



**ASSOCIATION INTERNATIONALE DE LA COULEUR  
INTERNATIONALE VEREINIGUNG FÜR DIE FARBE  
INTERNATIONAL COLOUR ASSOCIATION**

**ANNUAL REPORT  
2017**



**NO. 30**

EDITED BY

**Lindsay MacDonald**  
University College London

# CONTENTS

Contents	1
Editor's Notes	2
President's Report	3
Executive Committee 2016–2017	4
AIC Accounts 2016	5
Directory of Members	6-7
In Memoriam	8
AIC2016 Interim Meeting in Santiago, Chile	9
Reports from Member Countries:	
Argentina	10
Australia	11
Brazil	12
Bulgaria	13
Canada	14
Chile	15
China	16
Croatia	17
Finland	18
France	19
Germany	20
Great Britain	21
Hungary	22
Italy	23
Japan	24
Korea	25
Mexico	26
Netherlands	27
Norway	28
Portugal	29
Slovenia	30
Spain	31
Sweden	32
Switzerland	33
Taiwan	34
Thailand	35
USA	36
Associate Member – IACC/NA	37
Associate Member – CMG	38
International Colour Day – ICD	39-40
Reports from AIC Study Groups:	
Environmental Colour Design	41
Colour Education	42
Colour Vision and Psychophysics	43
Language of Colour	44
The Museum of Colours	45
Report from CIE Division 1	46
Future AIC Meetings:	
AIC 2017 – Jeju Island, Korea	47
Munsell 2018 – Boston, USA	48
AIC 2018 – Lisbon, Portugal	49
AIC 2019 – Buenos Aires, Argentina	50



*Attendees at the AIC Interim Meeting in Santiago, October 2016:  
Ingrid Calvo Ivanovic (Chile), Tien-rein Lee (Taiwan)  
Patrick Callet (France), Jin-sook Lee (Korea)  
Jeannette Hanenburg (Belgium), Javier Romero (Spain)  
Shin'ya Takahashi (Japan), Renata Pompas (Italy)  
Elisa Cordero Jahr (Chile), Ivar Jung (Sweden)*



2016 was a year when there seemed to be more happening in the world of colour than ever before: more conferences, more journals, more books, more social media groups, more postgraduate courses, more international collaborations, and more members in AIC. We were delighted to welcome Croatia as a new member, bringing the number of AIC Regular Members to 27, and in this issue there is a report from every single one of them, as well as our two Associate Members and four Study Groups. These reports provide many insights into the way that the different groups function and reach out to serve their members.

The highlight of the year was of course the AIC Interim Meeting in Chile, organised most capably by ACC (see report, p.9). The theme of 'Color in Urban Life' was very relevant to the cityscape of Santiago and also to the interests of many of the delegates. It was entrancing on the excursion to Valparaíso to visit the house of Pablo Neruda, high on a hill overlooking the bay, where colour architecture, the decorative arts and urban life all seemed to merge into one. Other notable events reported by members in the pages of this Annual Report are: 30<sup>th</sup> anniversary of the Colour Society of Australia (p.11); large-scale lectures of scientific popularisation and professional colour training in China (p.16); a White Tea Party, looking like a Whistler painting

coming to life, in Zagreb (p.17); a visit to the Ostwald Museum in Saxony (p.20); a conference in Valentino Castle, Turin (p.23); dinner illuminated by fireflies in a Japanese temple (p.24); analysis of Rembrandt's pigments in the Netherlands (p.27); an honorary doctorate awarded to a distinguished practitioner in Slovenia (p.30); and the opening of the Canon Exploratorium in Bangkok (p.35). Activities for International Colour Day (ICD) in 2016 were reported by about half of all member countries, and are described in a special two-page report compiled by Prof Maria João Durão (pp.39-40). The Study Group reports show the customary variety and imagination (pp.41-44). Also included are an article on the Museum of Colours, which after four years of planning has become a physical reality in Berlin (p.45), and a preview of the Munsell centenary conference, to be held in Boston in 2018 (p.48).



*Two Professors and two Editors at PICS, London.*

A memorable activity for me in 2016 was organisation of the conference 'Progress in Colour Studies' (PICS), hosted by University College London (UCL) with support from the Colour Group (GB). It really brought home to me the diversity of disciplines associated with colour and language, and the strength of scholarship and research to be found in so many places. It was a particular pleasure to welcome Prof Roy Berns of RIT, my predecessor as Editor of this publication, as a keynote speaker.



*Attendees at AIC Interim Meeting 2016, on the stage of the Fresno Hall, Centro de Extensión UC, Santiago, Chile (official event photo).*

# PRESIDENT'S REPORT

The Association Internationale de la Couleur celebrates its Fiftieth Anniversary this year. The AIC was founded 21 June 1967 in Washington DC, USA, during the 16th Session of the Commission Internationale de l'Éclairage (CIE). There were eight foundation members: USA – Inter-Society Color Council; France – Centre d'Information de la Couleur; Great Britain – The Colour Group; Spain – Comité Español del Color; Sweden – Swedish Colour Group; Switzerland – pro/colore; Japan - Color Science Association of Japan; The Netherlands – Nederlandse Vereniging. Today the AIC has grown to 27 Regular Members.

In 1975 the AIC, at the bequest of Betty Judd in memory of her husband, established the Deane B Judd Award to recognise outstanding lifetime achievement in the field of colour science. The recipients, from Dorothy Nickerson (USA) in 1975 to Françoise Viénot in 2015, represent the international elite of colour science researchers. The AIC has recently established a new award for excellence in research in Colour in Art, Design and Environment. The first of these CADE awards will be presented in Jeju during the AIC Congress.



The AIC website is regularly updated and proceedings for all AIC meetings dating back to the first AIC Conference in 1969 are now available for download. A huge thank you is due to Frank Rochow for compiling this valuable record and research resource. The Journal of the AIC is also now openly accessible on the website, thanks to the work of the editors Stephen Westland and Vien Cheung plus AIC webmaster Jose Caivano.

On behalf of the AIC Executive Committee (EC) and AIC family, I would like to congratulate the Co-chairs Ingrid Calvo Ivanovic, Maria Rosa Domper, Paz Cox Irrarrazaval and the whole team at Asociación Chilena del Color who organised the outstanding programme for the AIC Interim Meeting 2016 in Santiago. Highlighting the global significance of the AIC, there were approximately 100 oral and poster presentations from 28 countries throughout Asia, Europe, North and South America, the Middle East and the Sub-Continent.

New and current initiatives for the EC are as follows:

## 1. AIC Student Paper Awards

The goal of the new AIC Student Research Awards scheme is to encourage students to present their work at AIC meetings and to benefit from interaction with the international colour community. Applications must be substantially related to the subject of colour, but may be based in any discipline or mix of disciplines. Both research-based and practice-based work will be considered. The best six papers, as judged by the Award Panel, will be published in a special edition of the Journal of the AIC and a financial reward funded by the AIC: 1st AUD\$1,000, 2nd AUD\$600 and 3rd AUD\$400. Also the top six authors will receive complimentary passes to the Conference banquet. The first awards will be presented at AIC 2018 in Lisbon, Portugal.

## 2. AIC Brand & Design Work Group Proposal

The Executive Committee is proposing that a Design Working

Group be established. This will comprise members who are knowledgeable in the fields of branding, print and web design and social media, to ensure that the AIC brand is consistent across all applications and adheres to developed standards.

## 3. Study Group for Arts and Design

This is an initiative from Professor Dr Maria João Durão. We live in an age of the hybrid and the crossover, a time when the combined forces of new media, postmodern thought and history have made it possible for artists to work in new ways. Borders can at times be unclear in the contemporary Arts and Design practices; for example, in the domain of painting, the stretching of definitions is the actual substance of the work. But

at the same time, the study of painting, sculpture and drawing from previous eras is also contemplated. There will be no overlap with the disciplines of the existing Study Group on Environmental Colour Design.

## 4. Future AIC Meetings

The AIC Congress 2017, to be held on the tropical island of Jeju in Korea, promises to be a memorable event coinciding with the 50th Anniversary of the AIC. Future AIC meetings are scheduled: Lisbon (Portugal) in 2018 hosted by Associação Portuguesa da Cor; Buenos Aires (Argentina) in 2019 hosted by Grupo Argentino del Color; Toulouse (France) in 2020 hosted by Centre Français de la Couleur; and the next Congress in Milan (Italy) in 2021 hosted by Associazione Italiana Colore. In June 2018, there will also be a special joint ISCC–AIC meeting to celebrate the Munsell Centenary. This will be held at the Massachusetts College of Art and Design in Boston (USA).

## 5. International Colour Day

To increase awareness of colour in the wider community, the AIC has been promoting the International Colour Day which falls on the Equinox on 21st March. This concept has been enthusiastically adopted by a number of Regular Members. Our aim is to achieve recognition of the ICD by UNESCO, but first we need all 27 Regular Members to take ownership of it.

## 6. Co-operation with the CIE

The AIC membership wants to develop further the already close relationship we have with the CIE, particularly in coordinating our meetings as we have done this year on Jeju.

On behalf of the AIC Community, I would particularly like to thank Prof Javier Romero, the immediate Past President, for his remarkable commitment to the AIC since first becoming a member of the Executive Committee nineteen years ago in 1998. He has made an outstanding contribution.

Finally I must say that none of the above initiatives could have been achieved without the support of a dynamic Executive Committee and ex-officio members. My thanks to all.

With colourful regards,

*Nick Harkness*

Nick Harkness, AIC President





**PRESIDENT**

Mr Nick Harkness  
11a Liberty Street  
Enmore  
NSW 2042  
AUSTRALIA  
T: +61 402 228 964  
[nick@nhpl.com.au](mailto:nick@nhpl.com.au)



**VICE-PRESIDENT**

Prof Dr Tien-Rein Lee  
Graduate Institute of  
Information Communication  
Chinese Culture University  
55 Hwa Kang Road  
Taipei 111  
TAIWAN  
T: +886 228 610 511  
[trlee@faculty.pccu.edu.tw](mailto:trlee@faculty.pccu.edu.tw)



**SECRETARY/TREASURER**

Prof Dr Lindsay MacDonald  
3DIMPact Research Group  
Faculty of Engineering  
University College London  
Gower Street  
London WC1E 6BT  
UK  
T: +44 207 679 2695  
[lindsay.macdonald@ucl.ac.uk](mailto:lindsay.macdonald@ucl.ac.uk)



**PAST PRESIDENT**

Prof Dr Javier Romero  
Dept. de Óptica  
Facultad de Ciencias  
Campus Fuentenueva s/n  
Universidad de Granada  
E-18071 Granada  
SPAIN  
T: +34 958 244241  
[jromero@ugr.es](mailto:jromero@ugr.es)



**COMMITTEE MEMBER**

Prof Dr Maria João Durão  
Laboratorio da Cor  
Faculdade de Arquitectura  
Universidade de Lisboa  
Rua Sá Nogueira  
Pólo Universitário  
Alto da Ajuda  
1349-055 Lisboa  
PORTUGAL  
T: +351 213 615 000  
[mjdurao@fa.utl.pt](mailto:mjdurao@fa.utl.pt)



**COMMITTEE MEMBER**

Dr Leslie Harrington  
23 Roosevelt Avenue  
Old Greenwich, CT 06870  
USA  
T: +1 203 637 8865  
[leslie@colorassociation.com](mailto:leslie@colorassociation.com)



**COMMITTEE MEMBER**

Prof Dr Jinsook Lee  
ChungNam Natl University  
Department of Architectural  
Engineering  
99 Daehak-ro  
Yuseong-Gu 305-764  
Taejeon  
KOREA  
T: +82 42 821 6573  
[js\\_lee@cnu.ac.kr](mailto:js_lee@cnu.ac.kr)



**COMMITTEE MEMBER**

Prof Gabriela Nirino  
Facultad de Arquitectura,  
Diseño y Urbanismo (FADU)  
Universidad de Buenos Aires  
Intendente Güiraldes 2160  
Pabellón III  
Buenos Aires  
ARGENTINA  
T: +54 11 4789 6200  
[gabinirino@gmail.com](mailto:gabinirino@gmail.com)

# ACCOUNTS

Bank account reconciliation statements for the period 1 January to 31 December 2016, prepared by the AIC Treasurer, Dr Lindsay MacDonald. All figures are in Australian dollars (AUD).



<b>(1) St George Bank Freedom Business Current Account</b>		
Opening Balance on 1 <sup>st</sup> January 2016	AU\$ 4,531.43	
Membership Income	+7,517.00	
Transfer to Savings Account	-6,000.00	Three payments of \$2,000
Transfer from PayPal on 1 <sup>st</sup> August	+3,000.00	
Expenses payments	-949.27	Two claims by Nick Harkness
Account Service Fees	-120.00	12 months @ \$10/month
<b>Balance on 31<sup>st</sup> December 2016</b>	<b>AU\$ 7,979.16</b>	
<b>(2) St George Bank Business Access Saver Account</b>		
Opening Balance on 1 <sup>st</sup> January 2016	AU\$ 12,550.19	
Total Credits	+142.82	Bank interest (monthly)
TFN Withholding Tax	-54.00	Government tax
Transfer from Current Account	+6,000.00	Three payments of \$2,000
<b>Balance on 31<sup>st</sup> December 2016</b>	<b>AU\$ 18,639.01</b>	
<b>PayPal (Australia)</b>		
Opening Balance on 1 <sup>st</sup> January 2016	AU\$ 1,380.35	
Membership Income	+ 3,094.00	
Service Fees	-100.80	Transaction fee 3%
Transfer to Bank Current Account	-3,000.00	
Expenses payment	-59.63	Claim by Lindsay MacDonald
Printing of Annual Report	-628.33	Print Domain Ltd UK£354
<b>Balance on 31<sup>st</sup> December 2016</b>	<b>AU\$ 685.59</b>	
<b>Total Funds</b>	<b>AU\$ 27,303.76</b>	

## Proposal for AIC Banking Arrangements

In May 2012 UBS Zurich, with whom the AIC had banked since its establishment, advised the AIC Executive Committee that from June 2012 it was no longer viable for UBS to maintain the account due to the low value of its financial resource. UBS advised they would give us until the end of July 2012 to close the account. Funds were therefore transferred from UBS to a new account with the St George Bank in Sydney in August 2012. There are now two accounts: a day-to-day Business Current Account and a Savings Account which earns some interest. To establish the account the AIC had to be registered in Australia as an organisation with at least one Officer of the AIC as a resident in Australia, and Nick Harkness has fulfilled that role.

The Executive Committee has reviewed the current banking arrangements and believes that to change country again would be very difficult. Nick's term as an Officer of the AIC will expire at the end of 2019 and the organisation therefore needs to have in place an alternative primary account holder who is resident in Australia. The Colour Society of Australia has very kindly accepted that their current Treasurer at any given time can take on this role. For this protocol to be acceptable to the St George Bank, an honorary position on the Executive Committee will need to be created. A new non-voting role for the CSA Treasurer is proposed, which will remain in place until alternative banking arrangements are established.



**ARGENTINA**

GRUPO ARGENTINO DEL COLOR  
[aike.fadu.uba.ar/sitios/sicyt/color/gac](http://aike.fadu.uba.ar/sitios/sicyt/color/gac)  
 Lic María Paula Giglio (President)  
[mpgiglio@hotmail.com](mailto:mpgiglio@hotmail.com)  
 María Eugenia Bravo (Secretary)  
[gac@fadu.uba.ar](mailto:gac@fadu.uba.ar)

**AUSTRALIA**

COLOUR SOCIETY OF AUSTRALIA  
[www.coloursociety.org.au](http://www.coloursociety.org.au)  
 Judith Briggs (President)  
[judithb@colourconsultants.com.au](mailto:judithb@colourconsultants.com.au)  
 Glenys Thomson (Secretary)  
[glenysdesign@smartchat.net.au](mailto:glenysdesign@smartchat.net.au)

**BRAZIL**

ASSOCIAÇÃO PRÓ-COR DO BRASIL  
[www.procor.org.br](http://www.procor.org.br)  
 Prof Dra Paula Csillag (President)  
[paula@publishing.com.br](mailto:paula@publishing.com.br)  
 Prof Dr Fabio Cuppo (Treasurer)  
[fcuppo@hotmail.com](mailto:fcuppo@hotmail.com)

**BULGARIA**

ГРУПА ЦВЯТ - БЪЛГАРИЯ  
[www.bgcolorgroup.org](http://www.bgcolorgroup.org)  
 Dr Ralitz Gueleva-Tzvetkova (President)  
[gtralitza@yahoo.com](mailto:gtralitza@yahoo.com)  
 Dr Sofia Anguelova (Secretary)  
[sna@tu-sofia.bg](mailto:sna@tu-sofia.bg)

**CANADA**

COLOUR RESEARCH SOCIETY OF CANADA  
[www.colourresearch.org](http://www.colourresearch.org)  
 Dr Doreen Balabanoff (President)  
[dbalabanoff@faculty.ocadu.ca](mailto:dbalabanoff@faculty.ocadu.ca)  
 Dr Joy Lim (Liaison)  
[joylim37@gmail.com](mailto:joylim37@gmail.com)

**CHILE**

ASOCIACIÓN CHILENA DEL COLOR  
[www.asociaciondelcolor.cl](http://www.asociaciondelcolor.cl)  
 Paz Cox Irarrazaval (President)  
[pazcox@gmail.com](mailto:pazcox@gmail.com)  
 Ingrid Calvo Ivanovic (Outreach)  
[juanita.laguna@gmail.com](mailto:juanita.laguna@gmail.com)

**CHINA**

COLOR ASSOCIATION OF CHINA  
[www.fashioncolor.org.cn](http://www.fashioncolor.org.cn)  
 Prof Haisong Xu (President)  
[chsxu@zju.edu.cn](mailto:chsxu@zju.edu.cn)

**CROATIA**

HRVATSKA UDRUGA ZA BOJE  
[www.hubo.hr](http://www.hubo.hr)  
 Prof Ana Marija Grancaric (President)  
[amgranca@ttf.hr](mailto:amgranca@ttf.hr)  
 Martinia Ira Glogar (Secretary)  
[martinia.glogar@ttf.hr](mailto:martinia.glogar@ttf.hr)

**FINLAND**

SUOMEN VÄRIYHDISTYS SVY RY  
[www.svy.fi](http://www.svy.fi)  
 Sini Vihma (President)  
[sini.vihma@gmail.com](mailto:sini.vihma@gmail.com)  
 Dr Harald Arnkil (Vice-president)  
[harald.arnkil@aalto.fi](mailto:harald.arnkil@aalto.fi)

**FRANCE**

CENTRE FRANÇAIS DE LA COULEUR  
[www.cf-couleur.fr](http://www.cf-couleur.fr)  
 Prof Patrick Callet (President)  
[president@centrefrancaisdelacouleur.fr](mailto:president@centrefrancaisdelacouleur.fr)  
 Barbara Blin-Barrois (Vice-President)  
[direction@okhra.com](mailto:direction@okhra.com)

**GERMANY**

DEUTSCHER VERBAND FARBE  
[www.dfwg.de](http://www.dfwg.de)  
 Dipl-Ing Frank Rochow (Chairman)  
[offices@rochow-berlin.de](mailto:offices@rochow-berlin.de)  
 Prof Axel Buether (Vice-Chairman)  
[buether@farbe-licht-raum.eu](mailto:buether@farbe-licht-raum.eu)

**GREAT BRITAIN**

THE COLOUR GROUP (GREAT BRITAIN)  
[www.colour.org.uk](http://www.colour.org.uk)  
 Dr Elza Tantcheva-Burdge (Chair)  
[etan711@talktalk.net](mailto:etan711@talktalk.net)  
 Dr Jenny Bosten (Secretary)  
[J.Bosten@sussex.ac.uk](mailto:J.Bosten@sussex.ac.uk)

**HUNGARY**

HUNGARIAN NATIONAL COLOUR C'TEE  
<http://mta.aic.mnb.uni-obuda.hu>  
 Prof Dr Ákos Nemcsics (President)  
[nemcsics.ajos@kvk.uni-obuda.hu](mailto:nemcsics.ajos@kvk.uni-obuda.hu)  
 Janos Zana (Secretary)  
[janos.zana@uni-corvinus.hu](mailto:janos.zana@uni-corvinus.hu)

**ITALY**

ASSOCIAZIONE ITALIANA del COLORE  
[www.gruppodelcolore.it](http://www.gruppodelcolore.it)  
 Prof Maurizio Rossi (President)  
[presidenza@gruppodelcolore.it](mailto:presidenza@gruppodelcolore.it)  
 Veronica Marchiafava (Secretary)  
[segreteria@gruppodelcolore.it](mailto:segreteria@gruppodelcolore.it)

**JAPAN**

COLOR SCIENCE ASSOCIATION OF JAPAN  
[www.color-science.jp](http://www.color-science.jp)  
 Prof Shin'ya Takahashi (President)  
[takahashi-s@tokaigakuen-u.ac.jp](mailto:takahashi-s@tokaigakuen-u.ac.jp)  
 Prof Katsunori Okajima (Liaison)  
[okajima@ynu.ac.jp](mailto:okajima@ynu.ac.jp)

**KOREA**

KOREAN SOCIETY OF COLOR STUDIES  
[www.color.or.kr](http://www.color.or.kr)  
 Prof Dr Jinsook Lee (President)  
[kscs2008@hanmail.net](mailto:kscs2008@hanmail.net)  
 Hyeryeoun Kim (Secretary)  
[2hr4u@naver.com](mailto:2hr4u@naver.com)

**MEXICO**

ASOCIACIÓN MEXICANA DE INVESTIGADORES DEL COLOR  
[www.amexinc.mx](http://www.amexinc.mx)  
 Dra Liliana Monroy Mendoza (President)  
[lammx@hotmail.com](mailto:lammx@hotmail.com)  
[amexincsocios@gmail.com](mailto:amexincsocios@gmail.com)

**THE NETHERLANDS**

STICHTING KLEURENVISIE  
[www.kleurenvisie.nl](http://www.kleurenvisie.nl)  
 Kim van Savooyen (Director)  
[kim.vansavooyen@kleurenvisie.nl](mailto:kim.vansavooyen@kleurenvisie.nl)  
 Jan de Vletter (Secretary)  
[janwvlet@planet.nl](mailto:janwvlet@planet.nl)

**NORWAY**

FORUM FARGE  
[www.forumfarge.no](http://www.forumfarge.no)  
 Prof Jon Ynge Hardeberg (President)  
[jon.hardeberg@ntnu.no](mailto:jon.hardeberg@ntnu.no)  
 Dr Marius Pedersen (Secretary)  
[marius.pedersen@ntnu.no](mailto:marius.pedersen@ntnu.no)

**PORTUGAL**

ASSOCIAÇÃO PORTUGUESA DA COR  
[www.apcor.org](http://www.apcor.org)  
 Prof Margarida Gamito (President)  
[margamito@sapo.pt](mailto:margamito@sapo.pt)  
 Maria Cristina Pinheiro (Secretary)  
[apcor@apcor.org](mailto:apcor@apcor.org)

**SLOVENIA**

SLOVENSKO ZDRUZENJE ZA BARVE  
[www.szb.si](http://www.szb.si)  
 Dr Sabina Bracko (President)  
[sabina.bracko@ntf.uni-lj.si](mailto:sabina.bracko@ntf.uni-lj.si)  
 Jasmina Weis (Secretary)  
[jasmina.we@gmail.com](mailto:jasmina.we@gmail.com)

# MEMBERS

## SPAIN

COMITÉ ESPAÑOL DEL COLOR  
[www.sedoptica.es/SEDO/color/](http://www.sedoptica.es/SEDO/color/)  
Dr Juan Luis Nieves (President)  
[jnieves@ugr.es](mailto:jnieves@ugr.es)  
Dr Esther Perales (Secretary)  
[esther.perales@ua.es](mailto:esther.perales@ua.es)

## SWEDEN

STIFTELSEN SVENSKT FÄRGCENTRUM  
[www.colourspot.org](http://www.colourspot.org)  
Lena Anderson (Chair)  
[info@atriumdesign.se](mailto:info@atriumdesign.se)  
Berit Bergström (Secretary)  
[info@colourspot.org](mailto:info@colourspot.org)

## SWITZERLAND

PRO/COLORE  
[www.procolore.ch](http://www.procolore.ch)  
Sabeth Tödtli (Geschäftsstelle)  
[info@procolore.ch](mailto:info@procolore.ch)  
Verena M Schindler (Liaison)  
[vmschindler@yahoo.com](mailto:vmschindler@yahoo.com)

## TAIWAN

COLOR ASSOCIATION OF TAIWAN  
[www.color.org.tw](http://www.color.org.tw)  
Prof I-Ping Chen (President)  
[iping@cc.nctu.edu.tw](mailto:iping@cc.nctu.edu.tw)  
Tracy Hsieh (Secretary)  
[tracy.tjhsieh@gmail.com](mailto:tracy.tjhsieh@gmail.com)

## THAILAND

THE COLOR GROUP OF THAILAND  
[www.thaicolourgroup.org](http://www.thaicolourgroup.org)  
Prof Dr Aran Hansuebsai (Chairman)  
[aran@sc.chula.ac.th](mailto:aran@sc.chula.ac.th)  
Dr Uravis Tangkijviwat (Secretary)  
[uravis\\_t@yahoo.com](mailto:uravis_t@yahoo.com)

## USA

INTER-SOCIETY COLOR COUNCIL  
[www.iscc.org](http://www.iscc.org)  
John Conant (President)  
[jconant@aerodyne.com](mailto:jconant@aerodyne.com)  
Dr Paula Alessi (Liaison)  
[geinhaus@frontiernet.net](mailto:geinhaus@frontiernet.net)

## ASSOCIATE MEMBERS

INTERNATIONAL ASSOCIATION OF  
COLOR CONSULTANTS/DESIGNERS  
NORTH AMERICA (IACC-NA)  
[www.iaccna.com](http://www.iaccna.com)  
Ellen Divers (Vice-president)  
[edivers@divers-e.com](mailto:edivers@divers-e.com)

COLOR MARKETING GROUP (CMG)  
[www.colormarketing.org](http://www.colormarketing.org)  
Sharon Griffis (Exec Director)  
[sgriffis@colormarketing.org](mailto:sgriffis@colormarketing.org)



## INDIVIDUAL MEMBERS

Dr Yulia Griber, Russia  
[Julia\\_Griber@mail.ru](mailto:Julia_Griber@mail.ru)  
Dr Esther Hagenlocher, USA  
[ehg@uoregon.edu](mailto:ehg@uoregon.edu)  
Jeannette Hanenburg, Belgium  
[jeannette.hanenburg@gmail.com](mailto:jeannette.hanenburg@gmail.com)  
Dr Anishka Hettiarichchi, Sri Lanka  
[anishka\\_h@yahoo.com](mailto:anishka_h@yahoo.com)

Dr Ines Klemm, Switzerland  
[ik@latrace.cc](mailto:ik@latrace.cc)  
Natacha Le Duff, Germany  
[contact@museum-of-colours.org](mailto:contact@museum-of-colours.org)

Dr JeeYoon (Joy) Lim, Canada  
[joylim37@gmail.com](mailto:joylim37@gmail.com)

Leila Susan Munive, Peru  
[munive.leila@gmail.com](mailto:munive.leila@gmail.com)

Dr Jaishanker R Nair, India  
[jrnair@iiitmk.ac.in](mailto:jrnair@iiitmk.ac.in)

Dr Zena O'Connor, Australia  
[zena.designresearch@gmail.com](mailto:zena.designresearch@gmail.com)

Dr Kazim Hilmi Or, Turkey  
[hilmi.or@gmail.com](mailto:hilmi.or@gmail.com)

Becky Ndidi Oyibo, Nigeria  
[oyibobecky@gmail.com](mailto:oyibobecky@gmail.com)

Dr Maria Papadopoulou, Greece  
[mpapado811@gmail.com](mailto:mpapado811@gmail.com)

Dr Rita Rao, Argentina  
[ritarao@libero.it](mailto:ritarao@libero.it)

Dr Alan R Robertson, Canada  
[alan.robertson40@gmail.com](mailto:alan.robertson40@gmail.com)

Dr Kevin Smet, Belgium  
[kevin.smet@kuleuven.be](mailto:kevin.smet@kuleuven.be)

Mette Terkildsen, Denmark  
[mette@danskfarveinstitut.dk](mailto:mette@danskfarveinstitut.dk)

Laura Tofts, Zimbabwe  
[laura@artisan.co.zw](mailto:laura@artisan.co.zw)

Dr Andrea Urland, Slovak Republic  
[a\\_urland@yahoo.com](mailto:a_urland@yahoo.com)

Dr Mark Wentworth, UK  
[mark@colourforlife.com](mailto:mark@colourforlife.com)

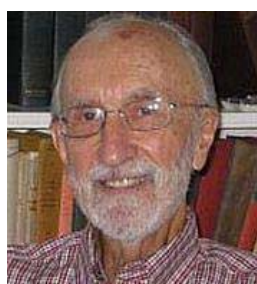
Dr Pietro Zennaro, Italy  
[pietro.zennaro@iuav.it](mailto:pietro.zennaro@iuav.it)

Dr Verónica Zybaczynski, Romania  
[veronica.zybaczynski@gmail.com](mailto:veronica.zybaczynski@gmail.com)



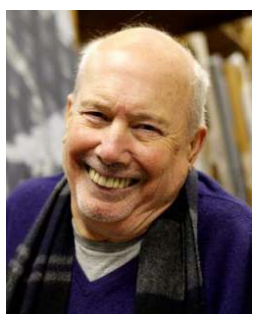


**John Krauskopf** (1929-2016) was widely recognized for his numerous contributions to experimental psychology and visual science. He earned his bachelor's degree from Cornell University and his doctorate from the University of Texas at Austin. During his career, he held research positions at the Lorrin Riggs laboratory at Brown University, the Walter Reed Army Institute of Research and Bell Laboratories. He also served on the faculty of Brown University, Rutgers University, Bryn Mawr College, St John's College Cambridge, University of Rochester, and New York University, where he was research professor of neural science until 2003. Dr Krauskopf is best known for a series of papers that identify the cardinal axes of color space, which he and his collaborators used to analyze chromatic channels in primates, as well as human color discrimination and the appearance of color-defined motion. In 1999, he received the Verriest Medal from the International Color Vision Society (ICVS). That same year he became a Fellow of the Optical Society of America, and won the OSA Tillyer Award in 2004.



**Harold Hellman** (1927-2016). The science writer 'Hal' Hellman was born in the Bronx, NY, received a BA in Economics from Hunter College, an MBA in Industrial Management from City College of NY, and MS in Physics from Stevens Institute. For 10 years he was employed by General Precision Aerospace in Little Falls, NJ,

where he worked as Technical Information Manager, editing and writing scientific papers and articles. As a freelance author, he published over 30 books on science and technology, including *The Art and Science of Color* (1967), which contains many experiments that can be carried out by the reader. He was an Associate Professor of Writing at NYU (1982-1990) and lectured at the Smithsonian Institute and the American Museum of Natural History. He is quoted as saying, "A fervently believed idea, even if wrong, dies hard."



**Richard Smith** CBE (1931-2016) was an English printmaker and painter. He produced work in a range of styles, but was often associated with color field painting. Born in Letchworth, he studied at St Albans School of Art and later as a post-graduate at the Royal College of Art in London. In 1970 he was the British representative at the Venice Biennale and in 1975 a

retrospective exhibition of his work was exhibited at the Tate Gallery in London. His abstract works from this period, in their scale, handling of paint and use of colour, show the influence of American colour field painters such as Mark Rothko. In attempting to connect 'high art' with popular culture, Smith's work differed from that of his Brit Pop contemporaries, who were more concerned with iconography. His riposte was: "My interest is not so much in the message as in the method."

**Adriana Fiorentini** (1926-2016) was for many decades a European leader in neuroscience. Born and schooled in Milan, she graduated in Physics in 1948 at the University of Florence. During her studies of optics she noticed a strange contrast phenomenon, which she correctly interpreted as the visual illusion known as 'Mach Bands'.

This observation was fundamental in shifting her research interests towards visual perception. In her time at Arcetri (1948-1968), Adriana published many innovative studies on physiological optics and perception, including the demonstration of human receptive fields defined by antagonistic centre-surround interactions. She wrote many book chapters, in Italian and English, on the perception of contrast, and of brightness and lightness. She helped to forge a community of visual scientists, leading to the European Conference on Visual Perception (ECVP). She was a founding editor of *Perception* for nearly 20 years, and on the editorial boards of *Vision Research*, *Brain and Behavioural Research*, *Clinical Vision Sciences* and *Optica Acta*. With Lamberto Maffei, she wrote *Arte e Cervello* (Art and Brain), about the nature of visual perception and visual language, which was met with great acclaim and received many prizes.



**Ricardo Cruz-Coke Madrid** (1925-2016). Born in Santiago, the son of Chilean senator Eduardo Cruz-Coke Lassabe, he grew up in an environment of science, politics and public health. Ricardo graduated from the University of Chile with the title of Medical Surgeon in 1950 and expanded his interests in genetics through postgraduate study in Paris, Madrid, Oxford and Baltimore. He was president of the Latin American Association of Genetics and the Human Genome Program. He was noted for his wisdom in different areas of the medical humanities, particularly in the history of medicine and medical ethics. His publications include *Color Blindness: An Evolutionary Approach* (1970) and (with Lorenzo Cubillos) *The Biographical History of Chilean Medicine, 1810-2010* (2014).



**Judy Napangardi Watson** (1925-2016) was an artist from the Australian Warlpiri tribe, who elected to use the wildest, most inventive of palettes to represent her country and as a means of re-affirming her relationship with it. She developed her distinctive style of painting using contrasting bands of colour with heavily textured surfaces worked in a

vigorous 'dragged dotting' style. Napangardi was a colourist almost without match, and the best of her works are exemplars of vivid and explosive coloration. Her frequent use of parallel bands of bright colour was a means of activating the surface of the canvases to create an illusion of motion.





COLOR IN URBAN LIFE  
Interim Meeting \* October 18th - 22th

'Color in Urban Life' was the main theme of this international and multidisciplinary meeting that brought together from different disciplines experts who link their professional work and research with the use of color in cities. The topics included the use of color in the natural and built environment, architecture, object design and visual communication, urban image and popular culture, current trends in art and design, theory, perception and wellness.

During AIC2016, researchers proposed observations, theories and postulations about how much in our daily lives we are surrounded and affected by color: how cities and their neighborhoods have distinctive color palettes; how textiles, furniture and even people transmit information, feelings and impressions about color. With this focus, the meeting included lectures, presentations and posters, selected by the Scientific Committee composed of thirty specialists from thirteen different countries. Accepted papers were organized into three broad categories, corresponding to the three meeting days: 'Color in Architecture', 'Color in Design', 'Color Aesthetics'.

The AIC2016 Keynote Speakers were prominent international experts, selected with the aim of giving both current status and greater depth to the categories identified. These keynote speeches were presented by: Louisa Hutton (Architect, Berlin), Verena M Schindler (Art historian, Paris), Natacha Le Duff (Cultural mediator, Berlin), Felipe Taborda (Graphic designer, Rio de Janeiro), La Nueva Gráfica Chilena (Sociocultural movement, Chile), Gabriel Gadd (Architect, Nice), Carol Derov (Marketing, Latin America), Patricia Fecci (Marketing, Brazil).



Keynote presentation by La Nueva Gráfica Chilena.

In the AIC2016 Programme there were 65 oral presentations, in thematic sessions such as: 'Environmental Color', 'Urban Color', 'Color Perception', 'Color & Culture', 'Color Psychology', 'Color, Health & Wellness', 'Color Education', 'Color, Materials & Science', among others. The papers were given by people of 28 countries, from America, Asia, Europe and Oceania. In addition there were 32 posters. The total number of attendees was ~450 and ~150 people participated in seven workshops.



Exhibition on concourse in Centro de Extensión UC

The meeting also included a series of complementary activities that allowed visitors to take advantage of their stay in Santiago. During that week, the exhibition *Color Textil*, curated by the academics Paola Moreno and Rodrigo Galecio, of the School of Arts of the Pontifical Catholic University of Chile, was inaugurated in the UC Art Gallery, which brought together works by the most outstanding Chilean exponents of textile art. At the same time, a film series about color was held in the cinema theatre of the meeting main venue, and an exhibition of *Cuadernos Cromáticos* at the University of Chile, among other activities. Finally, the meeting closed with a tour of Santiago city and an excursion to Valparaíso, always from the viewpoint of the use of color as the protagonist.



Walking tour around the historic areas of Santiago.

AIC2016 was organized by an alliance between the Department of Design of the University of Chile and the School of Design of the Pontificia Universidad Católica de Chile. The main venue was the Centro de Extensión UC, in the downtown area of the city. Six students from the University of Chile gave oral presentations, based on research work carried out as part of their academic training, resulting in greater participation of undergraduate students. The substantial effort in the management of an event of this magnitude, by both universities involved, was a contribution to situate Chile for dissemination of scientific and applied research. AIC2016 undoubtedly posed significant challenges for the future: it is a starting point for the lifting of a critical mass related to research on color in our environment, in images, objects and spaces, as well as for the establishment of networks at both national and international levels. Special thanks to our main sponsors and partners in this challenge, who supported us from the beginning, even beyond what was initially and formally committed: Faber Castell, Sherwin Williams, Antalis Chile and the Mustakis Foundation.





The Argentine Color Group (Grupo Argentino del Color, GAC) was founded in 1980, and brings together institutions and individuals who share an interest in the study of colour science and colour applications. The

goals of the Group are to encourage research on problems related to colour, to promote the exchange of information with similar associations abroad, to manage a documentation centre, and to integrate the different fields from which the study of colour can be addressed: science, technology, design and education. There is also a strong interest in the Group from the artistic community in the diffusion of their works.

ArgenColor 2016, the 12th Argentine Congress of Color, took place in the city of Córdoba, 16-18 May, organized by the following institutions: Institute of Color of the Faculty of Architecture, Urbanism and Design, National University of Córdoba; Faculty of Arts, National University of Córdoba; Faculty of Art and Design, Provincial University of Córdoba; and Argentine Color Group (GAC). The novelty in this event was the proposal, by the Institute of Color, to hold the 1st Meeting of Students and Color in parallel to ArgenColor 2016. There were 80 presentations, including 4 by renowned specialists, both national and international, 4 panels with 11 panelists, and 65 oral presentations and posters that addressed specific topics related to each of the areas proposed by the GAC.



*Student work in the different workshops at ArgenColor.*

Two anniversaries were celebrated: 20 years since ArgenColor 1996, the 3rd Argentine Congress of Color, realized in the same city; and 20 years since the creation of the Institute of Color. We paid homage to the founding color researchers, María Mercedes Ávila and Marta Polo.



*Authorities of the FAUD: Polo, Ávila and Adriana Incatasciato.*

With regard to publications, we published the Book of Proceedings of the 11th Argentine Congress of Color, ArgenColor 2014, organized by the Faculty of Architecture, Urbanism and Design of the National University of Mar del Plata and the GAC. The end-of-year toast, held on 17 December, marked the appointment of new Honorary Members of the GAC from the proposal of the Directive Commission and with the approval in Assembly: Antonio Álvarez, Juan Luis Ferrari and Silvio Enrique Roldán. The resolution was based on the recognition of the activity of members who built the GAC in 1980, along with Roberto Daniel Lozano and Susana H Sadi de Pons (Honorary Members), among others.



*Álvarez – Caivano – Giglio – Roldán – Ferrari.*



*Members of the Organizing Committee of guests for ArgenColor.*

The keynote speakers were Dr José Luis Caivano (Argentina), Dr Fernando Fraenza (Argentina), and Dra Georgina Ortiz Hernández (Mexico). The panels were: 'Color in design and architecture' by Mgr Mariela Marchisio, Dr Arturo Maristany and Esp Arq Guillermo Olgúin; 'Color in technology' by Daniel Maffei and Dr Anahí López; 'Color in education' by Lic Susana Rocha, Lic Celia Marcó del Pont and Lic Alejandro González; and 'Color in Culture and Art' by María Paula Giglio, Lic Varinia Jofré and Arq Anibal Manavella. Workshops for students were: 'Chromatic spaces: exploring contrasts', 'The tension between surface and representation: heuristic exercises around a system of color', and 'Applications of color in Serigraphy: group expressive experiences'. In addition, works of art and equipment were exhibited, including: 'Color Cycle', an installation by Sara Goldman; and 'Labyrinth' by Varinia Jofré.





The year 2016 saw increased activity in some, though not all, of the divisions for the Colour Society of Australia. New South Wales continued to have solid membership and attendance numbers at functions and to maintain good links with educational providers of interior design and decoration courses. Well-attended CSA meetings across all divisions included presentations on such varied subjects such as the analytical techniques used by conservators to investigate pigments and mediums employed in painting; trade showroom visits; film colourists; artists and lecturers; scientists; gardeners and others. All these presentations and subjects exhibited in so many ways how colourful our world and works are. Meanwhile our online CSA journal *Spectrum* continued with success.



*John Jackson explaining his large canvas showing the Palaeolithic evolution of the Brisbane River, its environs and geology.*

Overall, membership numbers were steady with regular meetings held in Western Australia, New South Wales and Queensland. Due to diminishing member numbers in the southern states, however, a decision was made to amalgamate South Australia, Tasmania and Victoria. This Southern States division has found that holding joint meetings with other groups such as the Artisans' Guild, Society of Dyers and Colourists, and botanical centres, generates better audiences.



*Conference speaker Jono Perry on 'Lighting Up Brisbane'.*

The major highlight of the year was our biennial CSA conference, this time organised and hosted by our Queensland

Division. Entitled 'ColourSpeak', the three days included 14 speakers, 3 workshops, an Education forum, a visit to a hospital (with colourful interiors), an evening boat cruise, and the start of CSA's 30th Anniversary celebrations. Presenters and speakers covered diverse subject areas such as behavioural optometry and syntonics; stained glass windows from Brisbane's St John's Cathedral; colour and psychology; colour usage in the built environment; planning and design details from Brisbane's Festival of Light; traditional colours of early Queensland homes of the past two centuries; theatre design; and synaesthesia, medieval pigments and alchemy.

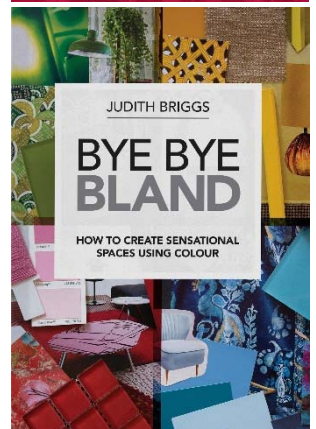


*CSA photography competition. Founding members Paul Green-Armytage and Eva Fay at the Brisbane conference.*

A special photographic competition took place during the conference where delegates could vote on their choice of the most colourful work on display. The education forum on the final day looked at the current situation of Tertiary Colour Education in various Australian states, noting that it was shrinking and resources are being diminished. This conference was a great success, and as always was a good opportunity to catch up with friends and colleagues.

A very colourful cake had been organised for the 30th Anniversary celebrations. Founding members Eva Fay and Paul Green-Armytage spoke about the beginnings of CSA, and acknowledged the other founders who were unable to attend. The celebrations will take place over the financial year, ending June 2017, and will include festive dinners in different states, and a special memento for all members. AIC President Nick Harkness, a long-time member of CSA, spoke about Australia's role in the global world of colour.

National President Judith Briggs published her book 'Bye Bye Bland – How to Create Sensational Spaces Using Colour' which has won two international print awards and a third award for the e-book version.







Associação ProCor do Brasil had a very intense and productive year in 2016. ProCor saw an increase in its membership, not bad for a year of economic recession in the country. Relevant companies LECHLER and XRITE PANTONE became regular members, plus three new individual members. New partnerships were created in 2016 with the Brazilian Cosmetics Association, Brazilian Watercolor Association, and Fine Artists Association.

On 21 March, to celebrate International Colour Day, ProCor held an event at FIESP building (São Paulo Industries Federation), where ProCor is hosted, via SITIVESP (São Paulo State Union of Paints and Varnishes Industries). Two lectures were presented to a public of 100 professionals and students in all sectors related to color. ProCor's President, Prof Dr Paula Csillag opened the event, explaining ICD, the AIC and ProCor.



*Dr Alberto Galbiati, from Lechler, speaking at ICD event.*

The first lecture, by Dr Alberto Galbiati, was about color trends and design for domestic environments. He talked about colour harmony in the internal environments of domestic venues, decoration and objects. He mentioned the relativity of colour, showing a clear heritage from Itten's and Albers's lectures at the Bauhaus design school. Dr Galbiati explained the project 'Color Design' and demonstrated it with color chips. He also made a rich explanation on color trends, showing fundamentals of forecasting for years to come, using color cycles as a basis.

The second lecture, by Pedro Gargalaca, was about new technologies for color management. He showed the latest equipment for controlling color accuracy in process color printing and reproduction. He gave demonstrations and attendees had the chance to test equipment he brought. After both lectures, a questions session was opened, with a lot interaction from the public. The afternoon closed with a networking coffee. The event had the sponsorship of LECHLER.



*Prof Dr Paula Csillag at SITIVESP's new Board of Directors' Ceremony.*

ProCor also participated in the ceremony for the new board of directors of SITIVESP (São Paulo State Union of Paints and Varnishes Industries). Also, ProCor was invited to participate in ESCCOR, School of Science in Color, organized by UNICENTRO, a university in the south of Brazil at Guarapuava, Paraná, under the direction of ProCor partner, Prof Dr Fauze Anaissi.



Brazil also celebrates another day of colour, the Brazilian Colour Day, established on the Southern Hemisphere's Spring Equinox, on 21 September. This year, the celebration was held at FEITINTAS, a trade fair for paints and varnishes. ProCor had an exhibition stand where there were banners and Caderno de Associados, so that visitors could learn more about the organisation and its members. The logos of sponsors appeared on the back wall of the stand: ABA, Abrafati, APAP, Lechler, Lukscolor, Multicolor, X-Rite, Coralís, 2AG, Imaginare, Senai, Sitivesp and Sherwin Williams. Prof Dr Paula Csillag also gave an invited lecture, in which she talked about colors in architectural environments. Copies of her book, *Comunicação com Cores*, were kindly offered by Lechler.

ProCor participated in the AIC meeting at Santiago, Chile, with two regular members presenting papers: Patrícia Fecci, from Sherwin Williams, was a keynote speaker and talked about color trends from The Color Marketing Group (CMG); Prof Paula Csillag presented a case study on a chromatic design for a hotel. Other Brazilians were present at the meeting and subsequently became new ProCor members, notably Prof Milena Quattrer. ProCor held more events in 2016 that can be seen at the website: [www.procor.org.br](http://www.procor.org.br)



*ProCor member Patrícia Fecci at AIC in Santiago de Chile*

## ГРУПА ЦВЯТ БЪЛГАРИЯ



## COLOR GROUP BULGARIA

The association of Color Group – Bulgaria conducts its strong scientific and popularizing activities in the domain of color science, while organizing and conducting scientific forums, lectures, and through its active publishing and social activities.

In January 2016, through the special presentation of the last editions of our Association in the Sofia Public Library, we ended the celebration of the 35th anniversary of the organization: the proceedings of the scientific forums held in 2015 and two brand-new books on colour topics, printed at the beginning of the year. This was with the special participation of Prof Michel Albert-Vanel (France), an honorary member of CGB, where his new bilingual book was presented: *Système Planétaire des Couleurs* (Planetary Color System), in French and English. We also presented the e-book of Aleksandar Radoslavov 'Aspects in the design of packaging. Part 1. Colour in packaging' (in Bulgarian, Sofia 2016), ISBN 978-619-7226-06-5.



*CGB members on the ICD excursion to Lovech.*

On 21 March we traditionally celebrated the International Colour Day, through a trip: the photo plein air 'Renaissance architecture – 1' by members and followers of the Group, to the Architecture reserve of the village of Staro Stefanovo and the city of Lovech, about 150 km northeast of Sofia.

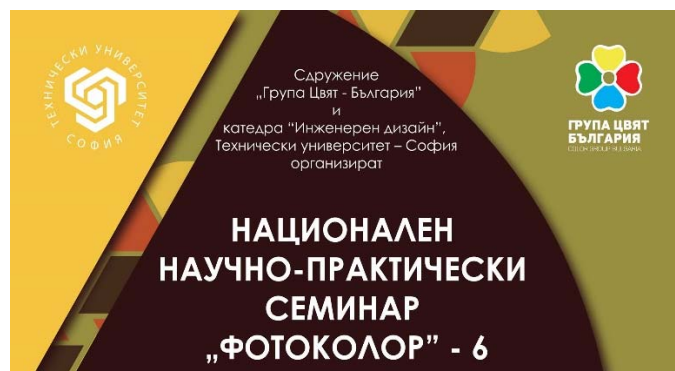
In June 2016, together with our partners of the Sofia University 'Saint Kliment Ohridski', we held the 2nd International Scientific Conference 'Colour and Language'. Lectures by researchers from Bulgaria, Serbia, China, etc, were presented. The scientific part of the conference was opened by the Deputy Dean of the Faculty of Classical and New Philologies of Sofia University, Prof Dr Milena Popova. In her introduction speech, she underlined the significance of linguistic and semiotic aspects of colours for contemporary society. Then 27 scientific papers were presented, as well as 4 books on the topics of contemporary colour science. The scientific forum was accompanied by an exhibition of children's painting on 'Colours in the visual language of children'. The materials were published in the e-proceedings (ISSN 1314-3883) edited by Prof Dr Detelina Metz and Dr Ralitz Gueleva-Tzvetkova. The author of the graphical design was Dr Rangel Chipev.



*Graphical designs for: (left) Colour & Light; (right) Colour & Language.*

Together with the Bulgarian National Committee of Lighting, a CIE-member, the CGB participated in the Annual Youth scientific conference 'Lighting 2016', 21-23 October. Our contribution was an exhibition of projects for lighting: household appliances, automobiles, environment design, etc, developed by students (bachelors and masters under the direction of professors of the Chair of Industrial Design of the National Academy of Arts). Together with the collective member of our Association, the New Bulgarian University, Department of Architecture, we held the National Seminar 'Colour and Light in Architecture' on 24 October. Participants emphasised new aspects of the symbiosis between colour and light for building architectural environments. The Proceedings were published on CD, volume 5 of the same series (ISSN 1314-6564), edited by Assoc Prof Dr Anna Avramova. The author of the graphical design was Dr Eng Elena Dimitrova.

On 2 December, in partnership with the Technical University of Sofia, the 6th edition of the National Seminar 'PHOTOCOLOR 6' was held. As a good tradition, a photographic exhibition accompanied the Seminar: 'Traditions and modernity in the Region of Lovech', developed on the basis of the materials of the photo plein air held during the year, and individual art projects of Assoc Prof Dr Yakim Deykov, architect Angela Andreeva and Yavor Dankov. The papers and photographs were published in the e-proceedings of 'PHOTOCOLOR 6' (ISSN 1313-9509), edited by Dr Ralitz Gueleva-Tzvetkova. The author of the graphical design was Eng Radka Yordanova.



*Poster for the PHOTOCOLOR 6 exhibition.*

During the year, we enjoyed the many new scientific and artistic achievements of members of the Association, including theses, exhibitions and books that completed the rich calendar of major events. In 2016, three issues (No 31, No 32 and No 33) of the Bulletin of the Color Group of Bulgaria were published. Work on the informational website of the Association is in progress: <http://bgcolorgroup.org>





The Colour Research Society of Canada / Société canadienne de recherche sur la couleur has a new Executive Committee: Doreen Balabanoff, President, Vivian Lo, Vice-President, Judith Tinkl, Secretary, Sharyn Adler Gitalis, Treasurer, and Brian Funt, Candida Girling, Robin Kingsburg, Joy Lim as Members-at-Large. The CRSC continues to host diverse colour events and to promote interest in colour studies across different disciplines and sectors.

We held a wide variety of events during 2016, commencing with a Colour Talk and Workshop on 21 March at Sip Wine Bar, Toronto, to celebrate International Colour Day (see p.39).



*Festival of Colours – Different colours of tea from around the globe.*

'Festival of Colours – Different colours of tea from around the globe' was an annual Festival of Colours Seminar held at Queen's Park, Toronto (24 May). Attendees of this Asian Heritage celebration included educators, government staff, colour consultants, artists, designers and community groups from diverse cultures.

CRSC had a booth, for the second year, at IIDEX Canada (30 Nov – 2 Dec) at the Metro Toronto Convention Centre (MTCC), North Building. IIDEX Canada is North America's largest annual exposition & conference for design and building.



Artists Sarindar Dhaliwal, Judith Tinkl, Gwen Tooth, Robin Kingsburgh and David Griffin are among the CRSC members whose work continues to explore colour ideas and who have held exhibitions in the past year. Artist Sarindar Dhaliwal gave a talk within her exhibition 'The Radcliffe Line and Other Geographies' at the Robert McLaughlin Gallery, Oshawa, on 13 August. See <http://www.nyartsmagazine.com/?p=21954>

Judith Tinkl is a practising fibre artist who is fascinated with the phenomena of light and colour. She has been a faculty member at the Ontario College of Art & Design since 1990. Her work was included in 'Durham Goes Downtown' at Charlotte Hale & Associates, Toronto (June) and in 'Pontoon' at the Kathleen Gormley McKay Art Centre (June). Her works explore the possibilities of using 3 hues (red, blue and green) in 4 values.



*Judith Tinkl: Back to My Roots: 3 x 4, # 1, 2 & 3, 2016, 38" x 35", fabric, machine pieced & hand quilted.*

Member Deirdre Tomlinson presented a paper at the AIC conference in Santiago, Chile, entitled 'The Value of Colour Design Applications on Urban Campuses'. She is completing her Master's Degree in Inclusive Design at OCAD University. Her thesis is entitled, 'Designing Inclusive Urban Playscapes across Sensorial and Socio-spatial Boundaries.'

Member Doreen Balabanoff completed her PhD at the School of Architecture, University College Dublin, on: 'Light and Embodied Experience in the Reimagined Birth Environment' and she published a research article, 'An Artistic Praxis: Phenomenological Colour and Embodied Experience' in JAIC Vol 17 Special Issue on Colour and Light.



The CRSC prepared a proposal to host an AIC Congress and looks forward to further possibilities for AIC contributions and collaborations. We continue to build our organizational structure and strategic planning, and we welcome new members from across Canada who are interested in planning events, participating in governance, and sharing professional profiles and knowledge. Please see [www.colourresearch.org](http://www.colourresearch.org) Also at <https://www.facebook.com/groups/288343247927922> is the CRSC Facebook page, a lively resource for the sharing of colour ideas and colour news.



*The green fairy storybook (detail), 2009, bookwork  
Collection of the Robert McLaughlin Gallery*



*Putting off the washing up (1991-2010)  
chromira print  
49" x 60"*

## Sarindar Dhaliwal: Artist's Talk





ASOCIACIÓN CHILENA DEL COLOR

It has been a member of the AIC since 2009.

The Chilean Colour Association (ACC) is where Chilean professionals and other interested people find a place for discussion, research, and work in the

## Diálogos de Color Seminar

As part of the celebration activities of the International Color Day, on 21 March, was held the third 'Diálogos de Color' seminar, which was also the opportunity to launch activities for the AIC2016 Interim Meeting. This multidisciplinary event brought different perspectives on the state of the art of the reflection about color, with approaches from art, design, architecture, philosophy and science, among others.



In this seminar, four speakers made oral presentations: Elisa Cordero, on the education of color; Roberto Rubio, on color philosophy and phenomenology of perception; Humberto Eliash, on color in public and popular architecture, and, finally, Lina Cárdenas on color management for textile design. The event was held in the Main Auditorium of the Facultad de Arquitectura y Urbanismo of Universidad de Chile. More than 150 people attended.

## Color Training for Tile Craftsmen

Researchers Ingrid Calvo and Lina Cárdenas gave a training workshop about color for tile craftsmen, workers of the company Baldosas Cordova, the oldest and most traditional in Chile. Following the old Spanish tradition throughout its 80



years of existence, this company has become an undisputed leader in hand-decorated tiles. Most of the heritage churches, schools, public buildings, supermarkets and countless private houses continue to be tiled with their products.

The color workshop started with a visual evaluation of the craftsmen, using first the Neitz Test of Color Vision,

and then the Farnsworth-Munsell 100 Hue Test. The workers attended a color class which included some basics about light, visual perception, color harmony and contrast, and they received some guidance for color combination and the forming

of color schemes. Finally they had to apply the color knowledge into the making of a series of tiles, generating new color proposals for the company's traditional designs. Twenty workers were trained in the two-week workshop.

## Colorearte Workshop in Valdivia

In Valdivia, in the south of Chile, the Colorearte workshop was held, consisting of training in dyeing with anilines, photography and creativity. The goal was to deliver artistic production tools to school teachers, to be implemented in classrooms. Subsequently, a national contest was conducted with textile works stained with colored anilines, made by students. This year more than fifty teachers from schools throughout the region participated, and were very satisfied with the results. The workshop was organized by the Mustakis Foundation and the Universidad Austral de Chile.

## The Colors of Happiness: Workshop for Graphic Artists

In September, members of the AIC2016 Organizing Committee, Osvaldo Zorzano and Ingrid Calvo, gave a workshop about 'The Colors of Happiness', for Graphic and Editorial Designers as well as Printing Workers and Suppliers. This workshop was organized by Antalis

Chile, a company focused on paper and printing supplies, also an AIC2016 sponsor. During the workshop,



participants were invited to think about which colors best represented happiness in their lives, by visualizing different kinds of images selected from the concepts of happiness and joy. Then, they had to choose those colors from among the wide variety of colored papers of Antalis, in order to make a composition using a given grid. When each composition was finished, the participants received a random number for the final arrangement of the compositions, and finally a collective work about happiness was made. The completed work was digitized and every participant received the colorful poster after the workshop.

## Lisbon Internship of a Chilean Color Researcher

In May, Elisa Cordero completed an internship (funded by the Chilean Government) at the Faculty of Architecture of the University of Lisbon, invited by Prof Maria João Durão, Director of LABCOR.

Elisa visited the Color Laboratory and interviewed the doctoral students. In the city, she carried out a small research of environmental color in three districts: Alfama, Chiado and Barrio Alto. Finally she presented 'Color Research and Application in Architectural Space' at the meeting 'The Future of Research in Color and Light in Portugal', held to celebrate the 12th anniversary of the LABCOR color research laboratory (see p.29).







The Color Association of China is one of the committees of the Chinese Optical Society (COS), specialized for

vision and colour. As the National Color Association it joined AIC in 1986, together with Division 1 (vision and color) of the China Illuminating Engineering Society (CIES). Its objectives are to encourage the research of color science and its application in different aspects, and through seminars to exchange information and new technology about color.

The 3rd Conference of the Asia Color Association (ACA) was hosted by CAC, chaired by Prof Haisong Xu, together with the China Fashion & Color Association (CFCA), in the historical city of Changshu, 21-22 May. This event provided a unique platform for exchange of views, bringing together leading researchers, scholars, students, artists, architects, engineers, designers, teachers, lighting experts, and color practitioners. The theme of ACA2016 was 'Color Driving Power' to enable full communications in science, application and culture in the various color fields of appearance, perception, communication, imaging, environment, design, etc. The nearly 200 participants came from Japan, Thailand, Korea, UK, Australia, Taiwan and China. About 60 academic papers were published at this conference, including oral and poster presentations, as well as 7 splendid invited lectures by Dr Taiichiro Ishida (Japan), Dr Pichayada Katemake (Thailand), Prof Youngin Kim (Korea), Prof Tien-Rein Lee (Taiwan), Prof Hongyu Guo (China), Dr Changyu Diao (China), and Prof Chaode Li (China).



(left) Ms Sha Zhu, President of CFCA; (centre) Prof Haisong Xu, President of CAC; (right) Prof Mitsuo Ikeda (Coordinator of ACA) all made opening addresses at ACA2016 China.



A group photo of some participants at ACA2016 China.

The 2016 China International Fashion Creative Forum along with the 107th Summit of the International Commission for Color in Fashion and Textiles was held in Shanghai on 26 May. Coming from Italy, France, UK, America, Finland, Japan, and China, nearly 30 color trend experts attended this event to elaborate the future trends of color and fashion via various visualization means, and to discuss several hot topics, such as the localization and internationalization of color, and the relevance of color to fashion, city life, and so on.



The 2016 China International Fashion Creative Forum along with the 107th Summit of the International Commission for Color in Fashion and Textiles, on 26 May 2016 in Shanghai.

The First China (Xinjiang) Invitational Tournament of Tourist Textile Gift Design was implemented in September in Urumchi of the Xinjiang Uygur Autonomous Region. A series of special products were examined and highly appreciated, being full of western China style mixed with modern fashion style.

During 2016 six large-scale lectures of scientific popularization and professional training were carried out on color subjects, mainly on psychology, dress collocation, fashion trend interpretation, matching skills, orientation, management, planning, professional coordination, and so on. Numerous technicians, students as well as teachers benefitted from these events performed in many communities of Nantong University, Shenyang Petroleum University, Xinxiang Fashion & Color Association, Inner Mongolia University of Science and Technology, and Zhongyuan University of Technology. Moreover, invited by the National Textile Museum in Shaoxing, several lectures were conducted on the different topics of 'Diversity and trends of color applications in textile industry', 'Dress color and visual merchandising', and suchlike for the vast numbers of personnel from the local textile industry.

The 2016 China Color Academic Annual Conference was held 11-12 December in Beijing. Various experts and scholars from Japan, Korea, and China were invited to present on the theme of 'Color, Innovation and Fusion' at this event, which provided a professional communication platform for color design and research personnel from various fields, as well as teachers and students from different art colleges.



The 2016 China Color Academic Annual Conference in Beijing.





On 20th October 2016 the Croatian Colour Society (CROCOS) became a regular of AIC, approved by the Executive Committee at its meeting in Santiago da Chile. This is great recognition for our Society. In 2016 CROCOS maintained its intensive activity on the organization of activities related to colour and light events.

## International Colour Day 2016

On 21 March CROCOS, together with University of Zagreb Faculty of Graphic Arts and Faculty of Textile Technology, celebrated ICD in the Technical Museum Nikola Tesla. This colourful event included a scientific one-day conference, exhibition, interactive workshops, multimedia performances and Joyful Corner, entitled 'Colour in Science and Art'.



*Colourful exhibition for ICD at Technical Museum Nikola Tesla.*

## Croatian Festival of Science

The University of Zagreb Faculty of Textile Technology, participated in the Festival of Science, held in Zagreb 18-24 April, organized by Technical Museum Nikola Tesla. CROCOS members participated in the workshop 'Black and white world: Art in Textiles – Textile in Science' and the interactive workshop 'COLORINA – Art and Science in Notebook', painting with pigment dyes.



*COLORINA – Art and Science in Notebook*

## Identities – Student Exhibition

A project was organised with international students and mentors, who had gathered around the theme of identity – local and national. South African students from the University of Pretoria expressed their illustrations and posters about knowledge of Croatian identity, while the Croatian students created textile patterns inspired by South Africa, after which both designed useful objects. The art mentor at the University of Zagreb was CROCOS member, Prof Koraljka Kovac Dugandzic. Mentors in the technical realization were Assoc Prof Ana Sutlovic and Assoc Prof Martinia Ira Glogar.



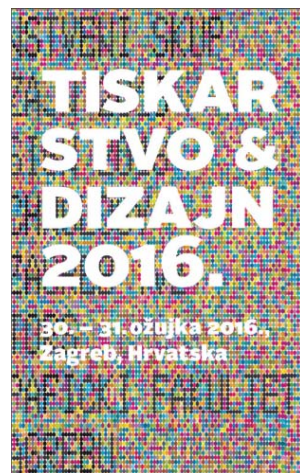
## White Tea Party

White Tea Party was a one-day event, in which students of University of Zagreb course on Costume presented their work with other students from the Academy of Music, Academy of Dramatic Arts, Academy of Fine Arts, and Faculty of Humanities and Social Science, all supervised by CROCOS member Ivana Bakal. White Tea Party in one afternoon and evening offered a variety of workshops where visitors got the chance to see and test their own skills in the decoration of hats, shoe making, painting fabric, design of floral wreaths, and also to learn something about the culture of drinking tea and coffee. And about white, of course.



## Printing & Design Conference

The 28th International Printing & Design Conference was held in Zagreb, 30-31 March. The main organizers were Polytechnic of Zagreb, University of Zagreb Faculty of Graphic Arts, University of the North, and Polytechnic in Varazdin. CROCOS member Dr Maja Strgar Kurečić presented a paper on 'Light Painting', an old photographic technique in which a long shutter speed is used, along with a moving light source. She explained several ways of painting with light, such as: illuminating the object in total darkness, while moving the light source directed towards the camera; and moving the camera with a static light source. Light sources can be anything from flashlights to burning steel wool.







2016 was a lively year for the Finnish Colour Association. On 27 February we saw the opening of an art exhibition by members and others in Galleria Kajava in the Vallila Library in Helsinki. The participants were Elena Hopsu, Anne Ovaska, Marita Meckelborg, Hilikka Kuusinen, Maija Junno and Anu Välitälo. The theme of the exhibition was Vastavärivoima, which translates as “power of complementary colours”. Some of the works were studies of the phenomenon itself, others employed complementary colours symbolically or to convey emotions. Colours were used to illustrate opposing principles, such as light – shadow, extrovert – introvert, passion – calm, but also wholeness and harmony. The exhibition is just one example of activity that has evolved from the FCA’s Facebook group.

In May, the FCA arranged an excursion to four exhibitions at three different sites in Southern Finland. They were Thomas Nyqvist’s recent paintings at the Hyvinkää Art Museum, Raili Tang’s exhibition ‘With Joy and passion – paintings 1989–2015’ and the Kimmo Pyykkö Art Museum in the Kangasala House, Kangasala and Carolus Enckell’s retrospective of his life’s work at The Sara Hildén Art Museum in Tampere. A bus full of members, non-members, artists and art students, 20 in all, participated in this full-day tour. The day’s highlight was the presentation of the FCA’s Iiris Award 2016, at the Sara Hildén Museum in Tampere, to Carolus Enckell for his life-long achievement as an eminent artist and educator. Apart from his outstanding career as an abstract colour field painter, Enckell has played a pivotal role in developing Finnish colour education as rector of Vapaa taidekoulu (the Free Art School), where he applied to the school’s colour teaching the pedagogical method of Josef Albers, which is still used widely in colour teaching in art and design schools throughout Finland. For more on the award, see: <http://www.svy.fi/en/iiris-palkinto-2016-2/>



Ilona Huolman, Sini Vihma (President of FCA) and Carolus Enckell at the Iiris Award ceremony, held in the Sara Hildén Art Museum.

As in the previous two years, the Association held in November an open symposium or ‘Colour Evening’, this time at the Metropolia University of Applied Arts and Sciences in Helsinki. The theme of the evening was colour research under the title ‘Aspects of Colour’. It consisted of talks by colour specialists, followed by free discussion with snacks and beverages. Katariina Ruuska-Jauhijärvi, student of Metropolia, presented her research on conservation methods involving colours. Architect Kati Winterhalter spoke about the reconstruction of historical interior colours, using as an example the restoration and conservation of the colours of the entrance hall of the Finnish National Library. Kirsi Perkiömäki, lecturer in Chemistry, spoke about colour research from the viewpoint of chemistry, and Saara Pyykkö presented her doctoral research into the colour design process of three new housing areas in the Helsinki metropolitan area. Finally, Harald Arnkil gave a talk on the colours of architect Alvar Aalto. About 80 people took part in the symposium, which generated a lively discussion.



‘Colour Evening’ at the Metropolia University in Helsinki

A member of the FCA executive, Saara Pyykkö, took part as the only Finnish representative in the AIC Meeting in Santiago, 18–22 October. The title of her presentation was ‘Colours of a Neighbourhood: Methodological Questions and Challenges’ and it dealt with the methodology of her doctoral research into urban colour design, using ‘colour walks’ and photography. Saara also took part in a post-conference excursion to Valparaíso together with other Nordic participants, thus strengthening the already close collaboration between colour researchers from Finland, Sweden and Norway.



Saara Pyykkö (second from left) with Nordic group at AIC in Santiago.





The year 2016 was marked by an important work, realized by CFC past president Annie Mollard-Desfour helped by Laurence Pauliac, Céline Caumon, Delphine Talbot and Guy Lecerf, reinforced by a local team of students in Toulouse and Montauban, for preparing the CFC 40th anniversary. A two-day meeting was organized 9-10 April in two French cities renowned for their contribution to color history. A first full day of conferences at Bemberg Foundation in Toulouse and a beautiful exhibition was planned. The second day was the occasion to visit some important places in Albi. A lot of colour documents and tools, given by *Mémoire des industries de la peinture* to *Archives départementales du Tarn*, were available for a temporary exhibition dedicated to our members. A few speeches and talks were given on industrial aspects inside an amphitheatre, decorated by old commercial posters. The last part of the day was dedicated to the *École européenne de l'art et des matières*. Last, but not least, there was a guided tour of the Toulouse-Lautrec museum.



*Exhibits of the 'Mémoire des industries de la peinture'.*

In March we held the Interdisciplinary Spring School on the Colour of Materials «EDP 2016 : Light, colour and social issues» in Roussillon (Vaucluse) at the Conservatoire des Ocre et de la Couleur. This thematic school, founded in 2000, gathered 70 researchers working in various fields from the sciences, arts, technologies and humanities.

On 21 June, the summer solstice, was a classical rendezvous with the solar lighting for sunset and polychromy on Notre-Dame de Paris Cathedral, with comments on the medieval polychromy programme and visual effects by Patrick Callet.

CFC General Assembly was on 25 June. After 12 years of Mollard-Desfour presidency, a new team has been chosen: Patrick Callet (President), Barbara Blin-Barrois (Vice-president), Alain Chrisment (Secretary) and Elizabeth Condemine (Treasurer). Deep modification of the legal status has never been made since 1976. New activities under construction are:

definition of several work groups, preparation of international events, greater involvement of members in the activities of CFC, and a new communication policy (QR code, web services and publications, reserved access to members, more interactivity).



In September, CFC members participated in the GdC XII Conferenza del Colore in Torino, Italy (see p.23). Two session chairs were attributed to CFC, vice-president Barbara Blin-Barrois and Hélène de Clermont-Gallerande.



*Ladies of the French team in Torino at the XII Conferenza del Colore, Castello del Valentino, Politecnico di Torino. Behind are exhibited paintings from CFC member, Larissa Noury.*

On 19 September was an exhibition of paintings and fashion show by Dr Larissa Noury at Musée de la Vigne et du Vin, Paris.

At AIC Santiago, 18-22 October, CFC presented to the Executive Committee an application for hosting an AIC conference in France, with the decision that CFC will organize AIC2020 in Avignon. Four CFC members made oral presentations in Santiago: Verena M Schindler gave an invited talk, Mélanie Yonge presented her work with France Cler, while Thomas Muller and Patrick Callet demonstrated new technology.



*Demonstration in Santiago of spectral acquisition of natural polarized light in urban spaces by Thomas Muller and Patrick Callet.*





because it is very close to the historic 'Haus Energie' in Großbothen, the home of Wilhelm Ostwald, the famous colour scientist and winner of the Nobel Prize for Chemistry in 1909.



*DfwG conference participants at Klosterhotel Nimbschen.*

The first day was filled by meetings of the DfwG working groups 'Fluorescence' led by Dr Claudio Puebla of Axiphos, 'Multigeometry Colour Measurements and Industrial Colour Tolerances' with chairman Dr Alfred Schimacher of PTB, and 'Colour Image Evaluation' with chairman Dr Andreas Kraushaar of FOGRA. During the informal evening gathering there was time enough to talk about the influence of Wilhelm Ostwald's work and, as the Luther-Year 2017 was approaching, the function of Martin Luther and his wife in Nimbschen.

The second day started with the DfwG working group 'Basics of Colorimetry' led by Dr Peter Bodrogi of TU Darmstadt. Thereafter the DfwG Annual Conference was officially opened. The first speaker was Paul Myland, the recipient of the 2016 DfwG Sponsorship Award, who talked on 'Colorimetric Colour Reproduction of Digital Camera Systems using Linear Interpolation Methods'. Then all meeting participants visited the Wilhelm Ostwald Museum, where historical exhibits



*Wilhelm Ostwald Museum.*

demonstrate the whole work of Ostwald from chemistry and painting through colour science to early energy use and saving. Very detailed information on Ostwald's colour studies and achievements was given by a knowledgeable guide from the staff of the museum. Even to us, being colour scientists, a lot of previously unknown information on Ostwald's work was learned.

The next morning commenced with '200th Anniversary of Schopenhauer's Colour Science' by Eva Lübke, followed by 'On

a Collection of Historic Colour Measurement Instruments' by Gerhard Pausch. Peter Bodrogi reported on 'Inter-cultural Study of Colour Temperature preferences in Germany and China' and 'Inter-cultural Study on Memory Colours in Germany and China'. Then followed 'Influences of Surrounding

Light Colours on Colour Discrimination Thresholds' by Karin Bieske of TU Ilmenau. Moving to print issues, 'Colour Measurement on Transparent Media – How to calculate Transmission Spectra from Reflection Measurements' by Patrick Herzog and 'Quality Attributes of LED based Illumination for Visual Colour Matching' by Andreas Kraushaar, FOGRA and Karin Bieske, TU Ilmenau, were presented. The LED complex was further addressed by Ulla Hartwig, OSRAM Opto Semiconductors, in 'TM-30-15: Calculation Method, Analysis of today's LEDs. Klaus Richter reported on 'New work on ISO 9142-306' and Frank Rochow concluded the meeting with 'SID Display Week 2016: Large Area Illumination with Displays'.

The new standard DIN EN ISO 11664-6:2016-12 'Colorimetry – Part 6: CIEDE2000 Colour-difference formula' was published, as well as the draft standards DIN EN ISO 11664-5:2016-03 'Colorimetry – Part 5: CIE 1976  $L^*u^*v^*$  Colour space and  $u',v'$  uniform chromaticity scale diagram' and DIN 6171:2016-07 'Surface colours for traffic signs and traffic installations' and DIN 5033-1:2016-11 'Colorimetry: basic concepts'.

The interdisciplinary conference 'Farbe im Kopf – Von der Wahrnehmung zur Kunst' (Colour in Mind – From Perception to Art), took place 21-23 September in Tübingen, co-

organized by the Institute of Media Studies and the Research Institute for Ophthalmology of the Eberhard Karls University of Tübingen, the Deutsches Farbenzentrum (DFZ) and the Hector Fellow Academy. Diverse perspectives included state-of-the-art colour research keynotes and talks, new developments and innovations in the field of colour and light technology, practical workshops and art exhibitions. One focus was colour perception and its neuronal foundation in humans as well as animals, and the representation of colour in the brain, including the development of colour preferences. Another focus was colour in movies, art and technology as well as design, examining outstanding examples of artistic use of and communicative expression through colour.

The award for the best presentation by a young scientist was given by the Hector Fellow Academy to Dr Maria Olkkonen for 'Learning and Memory in Colour Perception'. The conference resulted in establishing *Colour Turn*, a peer-reviewed digital journal that seeks to promote and advance interdisciplinary and international research into colour studies. See: <http://colourturn.net/colour-turn-journal/>



*DfwG Sponsorship Award to Paul Myland by Bernhard Hill*





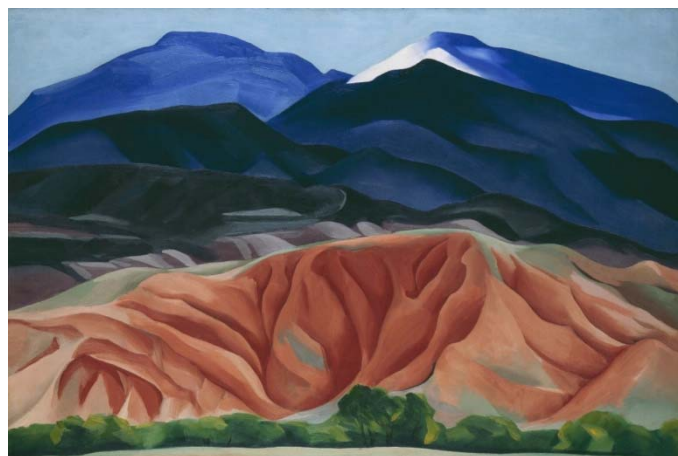


The Committee maintained its customary pattern of meetings, i.e. from October to May, on the first Wednesday of each month, but added some extras, with the AGM becoming a really special occasion. The Palmer lecturer at the traditional one-day January colour vision meeting was Prof David Brainard, Psychology Dept, University of Pennsylvania, who spoke about 'Psychophysics in the distal stimulus: color and material perception in the service of natural tasks'. The CRS lecture, delivered by Prof Annette Werner, was focused on 'Colour and Ambiguity'.

The February meeting presented a broad picture of the use of colour in art. In March two events were staged. At the beginning of the month, following last year's successful national conference, the First International Conference *Colour in Film* was launched in cooperation with the British Film Institute. This two-day event attracted participants from eleven different countries and speakers from four European states. Later in March was the annual celebration of International Colour Day (ICD). It included a range of activities, including demonstrations by the National Physical Laboratory (NPL) and a rolling presentation of colour projects by MA students from the Royal College of Art.



In April the tradition of a combined presentation of the biennial Newton Medal Award and the Stiles Memorial Lecture was resurrected at UCL. The Newton Lecturer was Prof Andrew Stockman and the WS Stiles Memorial Lecture was delivered by Prof John S Werner, University of California.



*'Black Mesa Landscape' by Georgia O'Keeffe (1930)*

At the AGM in May we celebrated the life and work of one of our long-time senior fellows, Dr Arthur Tarrant, with tributes from Andrew Hanson and Lindsay MacDonald. The remaining meetings covered a wide variety of topics. For example, in June members were treated to a private lecture at Tate Modern about the work of Georgia O'Keeffe, coinciding with a retrospective exhibition of over 100 of the artist's works.

In October there was a specialised meeting on 'Carotenoids and Colour Vision: protective function and effects on visual performance'. The annual Awards Meeting in November was followed by a visit to the 'Colour Experience' in Bradford, organised together with one of the Colour Group's Patron Members, the Society of Dyers and Colourists (SDC).

This year also saw three international events being partly sponsored by the Colour Group, all in September. These were: 'XII Conferenza del Colore', Turin, Italy; 'Progress in Colour Studies' (PICS) Conference, London, at which we sponsored an award for the best student poster; and 'Colour in Mind – from Perception to Art', Tübingen, Germany, at which Prof Anya Hurlbert was sponsored as a speaker.

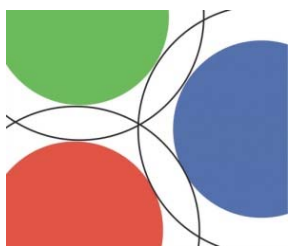
As an antidote to the usual London-centred activities, we launched a trial outreach in the North-East of England, under the working title of Northern Chapter of the Colour Group (GB). This regional group organised three events in the autumn: (September) Visit to the Stencil Library, Newcastle; (November)

'Colour Matters: Private View', Talks by Artists at Newbridge Studios, Newcastle; and (December) 'The Colour Red' in the University of Newcastle. Prof Robert Barton showed how, in a variety of animals, usually in males, red ornaments are sexually-selected and testosterone-dependent signals of health and dominance. Dr Jane Colbourne discussed a number of prominent red art pigments. Dr Gabriele Jordan explained the evolutionary reasons for genetic variability in the red-green opsin gene array of retinal photopigments and outlined how phenotypes could be measured in the laboratory.



*January: Janet Best and Annette Werner pose with THE DRESS.*





The Hungarian National Colour Committee was founded in 1969. It has maintained its activities until today and has produced numerous reports and organised exhibitions and series of scientific lectures for the general public in the colour fields of vision, environmental design, fine arts, measurement, colour and pattern harmony.

During the year 2016, there were many colour-related events. At the beginning of February, the VII LED Conference was organised at Óbuda University, with the Hungarian Lighting Association. The event was opened by Prof István Vajda, Dean of Electrical Engineering. Among all the main topics, the central topic was LED public lighting. The lecture by Ágnes Vidovszky dealt with colour preference investigations related to museum lighting, and that by János Pelye dealt with LED theatre lighting. In the two-day conference 25 lectures were presented, together with a range of LED-related industrial exhibitors.



Exhibitor stands at VII LED conference, Obuda University

In the middle of February, further training was performed by the visual education studio of the National Association of Hungarian Art Teachers. At their invitation, the speaker at the meeting was Prof Ákos Nemcsics, President of HNCC, who talked about aspects of the harmony of the visual environment.

At the end of March, a fine art exhibition entitled 'Colour-Shape-Space' was opened in the Palace REÖK in the city of Szeged. The curator of the exhibition was fine artist Zsigmond H Serényi. Among the 38 exhibitors were János Aknay, Pál Deim, János Fajó, Antal Kelle, Tamás Konok, András Mengyán, Antal Nemcsics, Zsigmond H Serényi, Ingo Glass and Antal Lux.



Zsigmond H Serényi opening the art exhibition at Palace REÖK.



Hedvig Dvorszky (centre) opening the MKISZ art exhibition.

In September, an exhibition „Complexity” was organised by the Interdisciplinary Section of Association of Hungarian Fine and Applied Artists (MKISZ), together with a one-day symposium. The exhibition was opened by Hedvig Dvorszky, art historian, and the work of Éva Mester, Tibor Szentpéteri, Béla Tilless and Ákos Nemcsics was shown. The complexity symposium was opened by President of the section Béla Tilless. Ádám Kertész dealt with the topic of colourful environmental design and holistic meaning. Other lectures dealt with the architectural face of Budapest.



'Hommage á Yellow'  
by Ákos Nemcsics (2016)

In November an exhibition by Antal Kelle, a member of MKISZ, was opened in the city of Érd. In addition to light and shadow, were mobiles and colourful collages. Kelle, who calls himself 'Artformer', started in fine art at the beginning of the 1970s, yet he works as an engineer, a professor and a playwright. He draws a lot from science in his artistic expression, and behind the geometric forms is the philosophical idea that there are many parallel views of things in the world, but only with contemplation can the reality be drawn. He says that the world has become a very complicated place: "We know much about everything but there are many parameters around us. We do not find the fixed ground under our feet, but are balancing in a wavy, troubled sea."



'Latent Tolerance' by Antal Kelle

At the beginning of December an HNCC meeting was held at the Hungarian Academy of Sciences. A decision was made to organise the next International Interdisciplinary Colour and Pattern Harmony conference in Pápa, 22-23 May 2017. Four working groups were established, for which the leaders are: Róbert Hirschler (education); János Zana (technical); András Mengyán (art); and Árpád Szende (colour planning). The conference secretary will be Antal Ürmös, PhD student.





The main event of the year that involves all the members of the Gruppo del Colore is the annual Conference.

The 2016 edition was held 8-9 September at Politecnico di Torino, in the prestigious Valentino Castle, in a collaboration between the Associazione Italiana Colore, DAD (Dept of Architecture and Design), DIST (Inter-university Dept of Science, Design and Land Policies), AIDI (Associazione Italiana di Illuminazione), Centre Français de la Couleur, Colour Group (GB), Colourspot (Swedish Colour Centre Foundation), Comité del Color (Sociedad Española de Óptica) and Groupe Français de l'Imagerie Numérique Couleur.



*The plenary session of XII Conferenza del Colore at the Politecnico di Torino in the prestigious setting of Valentino Castle [ph. Gino Spera].*

The conference started with a series of tutorials on different colour-related topics with personalities of international fame such as the artist Eugenio Bolley, Prof Angela Garcia Codoñer (Dept de Expresión Gráfica Arquitectónica, University of Valencia), Prof Raimondo Schettini (Università degli Studi di Milano-Bicocca) and Giovanni Brino (Politecnico di Torino). During the Conference, there was the award ceremony of the second edition of the *Premio Colore GdC* which was awarded this year to the famous photographer Franco Fontana. During the ceremony, he gave a lecture on colours and images. For the occasion there was an exhibition with works selected personally by the photographer, entitled *Paesaggi a Confronto*.



*The winner of 'Premio Colore GdC 2016', Franco Fontana, during his dialogue on colours and images (photo by Arch Gino Spera).*



*Renata Pompas (top left) with some participants of her workshop 'Knowing and Understanding Colour' that she organised in Milan.*

Members of our Association were involved in many activities relating to colour, such as, for example, Renata Pompas who collaborated on some entries of the new *Encyclopedia of Color Science and Technology*, and wrote monthly articles about Colour & Art. She also organised, together with Lia Luzzatto, the 2016 International Color Day (ICD) in Milan and participated in a lot of conferences and workshops.

During 2016 we published two issues of our online journal *Cultura e Scienza del Colore*. We also gave our patronage to the 24th Color and Imaging Conference (CIC24) in San Diego, 7-11 November, and to the Master Program in Lighting Design and LED Technology and to the Master Program in Color Design and Technology. In these courses Prof Maurizio Rossi and Prof Andrea Siniscalco, at Politecnico di Milano, regularly use the basic methodology and framework of experiments for teaching colour and lighting design (see p.42) that was also presented at AIC2016 in Santiago del Chile



*Students of the Master in Lighting Design course, engaged in experiments on the phenomena of light and colour perception.*





### CSAJ 47th Annual Meeting

The 47th Annual Meeting of the Color Science Association of Japan (CSAJ) was held 4-5 June at Meijo University in Nagoya, Aichi prefecture, chaired by Mikiko Kawasumi. The meeting theme was 'Natural light and artificial light'. More than 300 participants attended and 70 papers from various fields of color science and design were presented. In a special event on the first day (4 June), two invited speakers lectured on fireflies and blue-LED. Meijo University is the base of Prof Iku Akazaki, who won the Nobel Prize in Physics Prize in 2014 for blue LED research. During the reception and fine dinner, participants enjoyed viewing actual Genjibotaru fireflies (*Luciola cruciata*) gently shining green light in the garden of the Koshoji temple.



(left) Koshoji Temple Garden, Nagoya; (right) Genjibotaru firefly.

The CSAJ Encouraging Prizes were given to three students: Kazuki Hamada (Chiba University) 'Influence of Three Attributes of Color on Perceptible and Acceptable Color Difference in Natural Images'; Atsushi Moriwaki (Yokohama National University) 'Simulation of Deterioration Caused by Sunlight and its Reversal Process with Image Processing'; and Tetsu Ushirogouchi (Doshisha University) 'Color universal white illumination based on Confusion color line theory'.

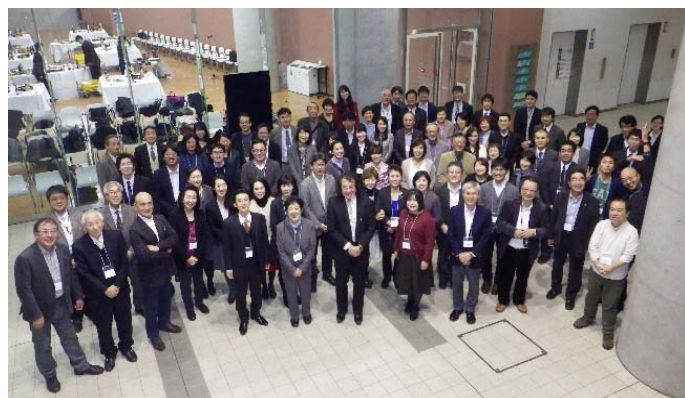


Poster session at CSAJ Annual Meeting 2016, Meijo University.

### Study Group Meeting 2016

The first Study Group Meeting 2016 was held 26-27 November in Osaka Electro-Communication University, chaired by Motonori Doi. More than 210 people attended, and 21 papers were presented. In addition, there were 6 special lectures, a tutorial, a symposium, workshops and demonstrations. Ten out of twelve Study Groups contributed to the meeting. The invited speakers were: Kosuke Sato (Osaka University) 'Digital Archives

of Megalithic Remains'; Noriko Nagata (Kwansei Gakuin University) 'The Metric of Kansei Value for Product Design'; Masako Yamada (Saitama Women's Junior College) 'Psychology of Skin and Color'; Ikuo Sato (Seric Ltd) 'Relationship Between Light and Color'; Masafumi Nishigaki (DIC Color Design Inc) 'Traditional Color Research and Color Chart of Nagoya'; and Kimiko Ohtani (Nara Women's University) 'Color in Japanese Traditional Foods (Washoku) and Sweets (Wagashi)'. The CSAJ Encouraging Prizes were given to Shigehito Katsura (Kyushu University) 'A Comparison of the Visual Search Function Cued by S-Cone Stimulus Value between Color Vision Types' and Keita Hirai (Chiba University) 'Fast Measurement of Spectral Reflectance and 3D Shape Using Multispectral Projector'.



Reception at CSAJ Study Group Meeting 2016

### Awards

The 8th CSAJ Research Award: Takuto Yanagida (Shizuoka University), Katsunori Okajima (Yokohama National University), Hidenori Mimura (Shizuoka University) for 'Color Scheme Adjustment by Fuzzy Constraint Satisfaction for Color Vision Deficiencies', *Color Research and Appl*, 40(5):446-464, 2015.

The 18th CSAJ Research Encouraging Award: Midori Tanaka, Takahiko Horiuchi, Shoji Tominaga (Chiba University) for 'Color Naming Experiments Using 2D and 3D Rendered Samples', *Color Research and Application*, 40(3):270-280, 2015.

In addition, the 20th CSAJ Award was presented to Akira Kitabatake, for his longtime contribution to the Association and for influential research in the history of color science.

### Publications

The CSAJ published six issues of the Journal of the Color Science Association of Japan in 2016. Six original papers and a number of feature articles were published, including papers at the Annual and Study Group meetings.

### Upcoming Meetings

The 48th Annual meeting of the CSAJ will be held 3-4 June 2017 at Bunka Gakuen University in Shinjuku, Tokyo. The Study Group meeting 2017 will be held 25-26 November 2017 at Sugiyama Jogakuen University in Nagoya, Aichi.

### Local Chapters and Study Groups

Three local chapters in the Kanto, Tokai and Kansai areas worked actively and organized several meetings throughout the year. CSAJ's newly elected executives started their term of office on 5 June: Shin'ya Takahashi (President), Katsunori Okajima (Vice-president) and Hideki Sakai (Vice-president) with 12 trustees. Currently, CSAJ has 1344 members.





The Korea Society of Color Studies (KSCS), which was founded in 1988, became a member of AIC in 1995, and hosted the AIC Interim Meeting in Seoul in 2000. Currently, it is actively preparing for a successful 13th AIC Congress in 2017 in Jeju Island, which is a World Natural Heritage site.

Celebrating International Colour Day (ICD) on 25 March, KSCS hosted a General Assembly and ICD seminar at Ewha Womans University under the theme of 'Culture and Color'. The aim was to reflect on the existence and meaning of color, which is present in our daily life, based on the cultural code. We developed a smartphone application called 'LOOK@COLORS in Culture', through which KSCS members communicated their color and culture codes. In addition, the 14th KSCS Chair, Prof Yoo-na Jung, was appointed as Honorary Chairwoman.



KSCS General Assembly, Ewha Womans University, Seoul.

With respect to its academic activities of 2016, the KSCS published four collections of papers, held two academic conferences, and hosted two seminars. The KSCS paper collections were published on the National Research Foundation of Korea platform on the last days of February, May, August, and November. A total of 46 papers from fields such as color science, design and education, were reviewed carefully and included in these 2016 collections.

During springtime, the academic conference was held with the theme *Urban Space & Color* on 20 May at ChungNam University where Prof Bok-seop Song (Hanbat National University) gave his keynote speech 'Urban Space & Color'. In the fall, the conference had the theme *Color Design for All* at ChungAng University, where Prof Sari Yamamoto (Tsukuba University in Japan) gave his keynote speech 'Color Universal Design in Sign', while Prof Emeritus Pyeong-seop Yoon (Sahmyook University) gave his keynote speech 'Plant Color Design for All'.

More notably, throughout the year KSCS actively prepared for AIC 2017. On 26 September, it hosted the AIC 2017 Boom-up Meeting at the Shilla Hotel, attended by around 100 people, including KSCS members, representatives from related institutions and industries, and academics. The aim was to promote the Congress to be held at the Jeju International Convention Center (ICC). At this event, Chairman Su-ro Hwang of the Institute of Korean Royal Silk Flower, a keynote speaker for AIC 2017, was introduced, and the cultural performance of



AIC 2017 Boom-up Meeting at Shilla Hotel, Seoul.

artist Ja-yeong Jung, who is critically acclaimed for her artworks combining sound and image, was presented and garnered applause from the audience. In addition, President Jin-sook Lee of the AIC 2017 Organizing Committee remarked that 2017 is especially significant since a variety of cultural performances and events are scheduled to mark the 50th anniversary of the AIC, which will be a valuable opportunity to show the world the potential of Korea's color academia and industry. Furthermore, President Lee delivered a keynote speech in Beijing on 11 December at the invitation of the China Fashion and Color Association (CFCA) and is working actively to promote and successfully host AIC 2017 (see also p.47).

The Korea Color Awards have contributed to advancing color culture in Korea and enhancing professionalism of the color industries. Many individuals, businesses, institutions, and local governments submitted their works in 8 areas, including urban and residential environment, architecture and interiors. This year 15 works were awarded; the Prize of Minister of Trade, Industry and Energy went to 'Everland Color Manual' and the Prize of President of Korea Institute of Design Promotion went to 'Dream of Spring Night'. Artists from Asia, Europe and USA participated in the KSCS Invitation Exhibition of Color Works, which marked its 9th anniversary under the theme 'GREENY'.



Entry in the KSCS Invitation Exhibition of Color Works.

Finally, President Jin-sook Lee of the AIC Organizing Committee and President Gyoung-sil Choi of the AIC Executive Committee and many other Koreans participated in the 2016 AIC Interim Meeting held in Santiago, Chile for five days 18-22 October. Twelve papers by Korean participants were presented. After Prof Lee's presentation about the Congress, the AIC Flag was handed over from AIC 2016 host Chile to AIC 2017 host Korea. Furthermore, using a promotion booth, KSCS distributed traditional Korean painting cards and promotional leaflets to AIC participants and encouraged them all to attend AIC 2017.



In 2016 the Mexican Color Association (AMEXINC) carried out the following activities and celebrations. We celebrated the International Color Day at the Faculty of Psychology, UNAM, with an activity directed to professors and students. The main objective was to create pictorial representations of their emotions using vinyl paint of different colors. Making an exhibition of the collectively generated drawings, we promoted the exploration of emotions through painting.

On 12 May, we celebrated the 11th anniversary of the creation of AMEXINC. Dra Georgina Ortiz Hernandez (the founding president of AMEXINC) imparted the Seminar of Color in the Faculty of Psychology at the UNAM, thus promoting the development of new lines of research related to color.



Something to highlight was the creation of the AMEXINC publishing company, which began its activities with the publication of the book *El color y la cultura en México y el Mundo* ('Color and culture in Mexico and the world') which was presented in different forums around the country during the year. Two more books are in the process of editing.



The aim of AMEXINC is to disseminate texts on color and, for this purpose, it organizes meetings and conferences. Therefore, this book presents the most outstanding exhibitions of the Third Mexican Encounter of Color celebrated in the city of Oaxaca. The chapters are grouped into two categories, first on theoretical/empirical development of color and second on use of color in different cultures and scenarios: (1) semiotic analysis of the phenomenon of *cesía*, within a natural and cultural context; (2) empirical research on the colors of violence for children through drawing; (3) eco-design applied to the design of objects; (4) meanings of the colors of different eras and cultural groups; (5) symbolism, meaning and colors of funeral ceremonies in different cultures; (6) advances in the meanings of variations of saturation and luminosity in yellow, red and blue; (7) production of natural cotton of different colors; (8) use of color in Peruvian textiles; (9) 'Chamateras de Doñihue', traditional textile artisans of central Chile, who produce complex textiles such as *chamanto*, the traditional clothing of *huaso* (Chilean country man); (10) origin of the art *Wixárika* and how the consumption of *peyote* influences its color in daily life, clothes and offerings; (11) an approach to abstract feminine art in Mexico; (12) color codes in the architecture of five haciendas in the Tequila Valley; (13) recovery of 65 façades of a street with patrimonial and landscape value, with an emphasis on architectural elements.

We carried out the exposition 'Otros jardines y sus delicias' ('Other gardens and their delights') from the Mexican painter Reyna Zapata Valdez, a founding member of AMEXINC, at the José Vasconcelos gallery at the Universidad Tepantlatlo. She also promotes exhibitions from diverse Mexican authors and supports the diffusion of the use of color in art, constantly demonstrating the use of color in culture.



Also, starting in 2016, we began, together with the Sociedad de Ex-alumnos de la Facultad de Psicología de la UNAM (SEFPSI) and the Asociación de Ex-alumnos de la ENAP de la UNAM (AEXENAP), the organization of the 1st AMEXINC International Conference and the 4th Mexican Color Meeting that will be held in Mexico City in 2017. This event will take place at the Enrique del Moran auditorium in the Faculty of Architecture at the Universidad Nacional Autónoma de México, 17-19 May, 2017 with the participation of different color specialists and presentation of the First National Color Award (in Mexico) and recognition of works in the subject of color.



With this we will fulfill the purpose of the Association that is to group the researchers, scholars and users of color in Mexico, namely: (a) Promote, realize and strengthen research on color, in a multidisciplinary way, in order to increase knowledge about color; (b) Support and strengthen the identity of the Mexican citizen through the use of traditional colors; (c) Publish and disseminate the research work of its partners and affiliates, both nationally and internationally.

A different manifestation of color in youth culture was the *Life in Color* performance that took place in Mexico City on 10 September. What originally began as a college tradition in the USA has transformed into a worldwide live concert, featuring spectacular DJs, soaring aerial acts, stilt-walkers, contortionists, fire shows, and cannons to deliver the famous 'Paint Blast'. It is now described as "the world's largest paint party".



Poster for the 'Life in Color' event in Mexico City.



## Kleur. & visie

HET NEDERLANDS PLATFORM VOOR KLEUR

Commissioned by the Rembrandt House Museum, the Leiden designers Maarten Kolk and Guus Kusters translated colour art from Rembrandt to the 21st century. The result: completely new pigmentation in ceramics inspired by timeless icons such as the Night Watch, the Jewish Bride and a self-portrait from his early period in Leiden. Although Rembrandt is often admired for his striking brushwork, he mostly built up his paintings in layers according to traditional methods. This typically involved layering colour upon colour, and playing with translucent and opaque applications, to achieve deep and rich colour effects, as well as subtle variations of tone and surface finish.

### Rembrandtlab: An Innovative Research in Colours



(left) Paints on porcelain forms; (right) Rembrandt self-portrait (1628)

In *Constructing Colours*, Kolk and Kusters studied Rembrandt's technique, guided by Rijksmuseum conservator and scholar Petria Noble. They explored the possibilities of applying Rembrandt's working methods to ceramics. His ground layers were translated into coloured porcelain forms. Over this surface, they applied colours evoking those used by Rembrandt, following his method of build-up of layers, using various colouring techniques.



(left) Colour palette selections; (right) with 'The Jewish Bride' (1667)

The interplay of light and color, gloss and opacity, had a greater role in historic finishes than we realize today. This was the topic of the meeting of the Historical Color Platform on 13 October.

### Historical Color Platform

At the request of Eloy Koldewij (interior specialist at the Cultural Heritage Agency of the Netherlands), the topic was 'Matte and Gloss'. Koldewij noted in the research of gold leather hangings how sophisticated their use has been in the past in interior decoration. Chairman Mariël Polman (Color specialist and paintings) said that colour historical research is literally about research into colour. Now that Color Historical Research, as a defined discipline, has a well-deserved place in the restoration field, the time has come to broaden its scope to include the properties of gloss and matte.

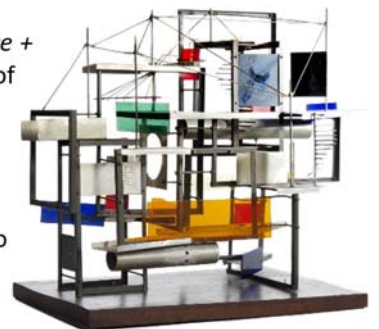
That raises the question of how we perceive shine. And what do we know about historical techniques aimed at shine? It appears that the various components of paint react differently to certain solvents. Pigments and binders were investigated in the research of Jessica Hensel. The result was surprising: different binders were used for various pigments, as a result of which the gloss is different per colour. Red typically has a satin gloss while blue is more matte.



Ceiling board from a courtyard house in Damascus: (left to right) before, during cleaning, cleaned, and after preservation.

Other speakers were: Emiel Goossens (Rolsma Line Oil Colors B.V.) about 'Gloss-rich preservation of monuments'. There was a discussion about the challenges of painting with new-fangled technology to emulate the traditional craftsmanship of the house painter. 'Gloss, opacity and perception' by Bill Wei and Sanneke Stigter, who did their research on photographs. 'Desen varnish Puyck! Recipes from the 17th century Mechelen Secretion Boeck' by Martine Postuma de Boer, and Bianca van Velzen dealt with the original varnished gold leather wallpaper at Lenghenhof in Dordrecht.

The exhibition *Constant. Space + Color* in the Cobra Museum of Modern Art, Amstelveen, presented reconstructions of architectural collaborations by Constant Nieuwenhuys with Gerrit Rietveld and Aldo van Eyck. For example, a model interior that he made together with Rietveld for



'Color Harmony in your Home' in the Beehive 1954. Also the reconstruction of 'Space Color' which he made with Van Eyck for the exhibition 'Man and House' at the Stedelijk Museum, Amsterdam, in 1952.

# Forum Farge.

Forum Farge, the Norwegian Colour Association, was founded on 10 April 2013. Its purpose is to stimulate research on all aspects of colour, to disseminate

research-based knowledge about colour, and to facilitate applications of this knowledge to solve colour-related problems within art, design, architecture, science and technology. The group became a member of AIC in 2014. More information about Forum Farge can be found on our website at [www.forumfarge.no](http://www.forumfarge.no)

## Annual conference: Forum Farge 2016

The annual conference was held in Kongsberg, Norway, hosted by University College Southeast Norway, on 14 March. Presentations included topics of colour, light and perception. The keynote presenter was Svante Pettersson (Architectural Lighting Advisor at Philips Lighting) talking about colour, architecture, and light. Other talks were given by Prof Rigmor Baraas (University College Southeast Norway) on colour vision, Ulf Klaren (Colour&Light Research Group) on colour and light, and docent Karin Fridell Anter (Royal Institute of Technology) on knowledge and misconceptions regarding color and light.

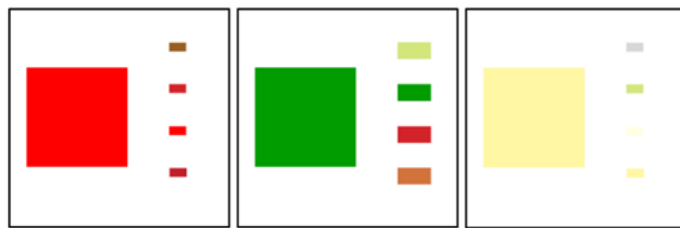


*Prof Rigmor Baraas presentation on colour vision.*

Short presentations were made by Forum Farge members covering such colour topics as universal design, folk art, visually impaired and phenomenology. The conference attracted many people, from both Norway and abroad, interested in colour from different occupations, including academia, technology, architecture, textile industry, lighting industry, and so on.

## Research activities

The Norwegian Colour and Visual Computing Laboratory ([www.colourlab.no](http://www.colourlab.no)) at the Norwegian University of Science and Technology in Gjøvik has been very active in 2016. They are currently coordinating a large research project 'HyPerCept – Colour and Quality in Higher Dimensions' funded by the Research Council of Norway, that deals with many topics from the visually impaired to colour in imaging devices. The project is divided into four sub-programs: (1) Improved image quality for the visually impaired; (2) Imaging technology for health, security, and art: Functional image quality; (3) Color and quality in imaging devices – value creation in the imaging industry; (4) Image quality in higher temporal and spatial dimensions.



*These images were difficult for colour vision deficient (CVD) observers*

Researchers involved in the HyPerCept project published 12 papers in 2016. An example was 'Quality of color coding in maps for color deficient observers' by Anne Kristin Kvitle, Marius Pedersen and Peter Nussbaum in the IS&T Electronic Imaging Conference. For a colour deficient observer, the quality of a map or other information design may be defined as the ability to extract features. As colour is such important conveyor of information, the colours need to appear correct and to be perceived in the desired and intended way. In order to investigate the discriminability of colour coding in an official Norwegian map product, an experiment was conducted involving both colour deficient and colour normal observers. The experiment revealed that the color deficient observers made significantly more errors than the normal observers, especially when the visual angle was reduced.

The Light & Colour Centre (LCC, formerly known as Light & Colour Group, <https://www.ntnu.edu/iat/lightandcolour>) in Trondheim at the Norwegian University of Science and Technology is involved in research projects on light and colour in an architectural context, involving daylight, artificial light, colour, physics of light and colour, visual perception, and related fine art. Ongoing projects are 'DayLighting' on daylight issues at high latitudes, 'IEA Task 50' on advanced lighting solutions for retrofitting buildings, and several PhD projects on colour-related topics and 'Trondheims Color Guide'.



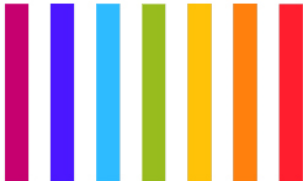
*Trondheims' traditional colour palette: chromatic hues are dominated by colours between yellow and red, with a few greens and greys.*

The nuances of the Trondheim palette are rather atypical colours, being more or less equally white, black and chromatic. Modern architecture does not support the traditional colour identity of the city, and is dominated by achromatic greys, often with strongly chromatic accents of all hues. Older more chromatic houses are being repainted with a dominant whiteness or within the achromatic greyscale.



*Norwegian contingent at AIC in Santiago*





During 2016 we established the basis for the 2018 AIC interim Meeting in Lisbon (see p.49). The conference logo was definitively chosen, and the meeting officially presented at the AIC 2016 closing ceremony. The event was also presented at the Progress in Colour Studies (PICS) Conference in London.

On 23 March was created, at the Faculty of Architecture of Lisbon University, a Research Group that aims to promote research studies in Light and Colour. This group, led by Prof Maria João Durão, our Honorary President, is constituted by several researchers with a majority of APCor Members.

On 1 June APCor associated the celebration of the International Colour Day (ICD) to the celebration of the 12th Anniversary of LABCOR at the Faculty of Architecture, University of Lisbon (see p.40).



The Portuguese Colour Association continued to be strongly represented by its members at the main forums of colour discussion throughout the world:

**Prof João Pernão**, the Vice-President of APCor, was chair of one of the sessions of PICS 2016, and presented there an oral paper

entitled 'A Phenomenological Approach to Colour Surveys in Architecture'. He was also invited, with Prof José Aguiar (they are both teachers and researchers at Faculty of Architecture, University of Lisbon) to integrate a team of Spanish architects (GAU – Gabinete de Arquitetura e Urbanismo, Lugo) for a Colour Plan competition in Galicia, Spain. The team won the first prize in the public competition for the geographic areas of Marina Baixa and Litoral.



**Prof Margarida Gamito**, the President of APCor, participated in the Design Principles and Practices conference (Rio de Janeiro), presenting 'A new chromatic methodology for urban furniture'. She was also present at the AIC 2016 Interim Meeting where, besides officially presenting the AIC Lisboa 2018, she exhibited a poster 'Impact of tiles panels on Lisbon chromatic environment'.



**Dr Miguel Sanches**, took part with oral presentations and papers in several events in Portugal. Abroad, he presented 'Improvements in color communication for graphic designers' at the 48th Conference of the International Circle of Educational Institutes for Graphic Arts Technology and Management in Leipzig. At AIC 2016, he presented 'Color Translation Tool: How Graphic Designers Care About Color Management'. In the same month, he published the paper 'COLORTRANSLATION – Plataforma para promover uma adequada comunicação de dados de cor' at CIDAG – Conferência Internacional em Design e Artes Gráficas (Barcelona).



**Dr Verónica Comte**, participated on the congress Utopia(s): worlds and frontiers of the imaginary, with a paper 'Tirana: Colour and Art on the Way to Utopia'.



At the AIC 2016 Meeting in Santiago she presented 'Paintings on residential facades: colouring out change, hope and renewal to the public space'. In November, Verónica was invited by Jose Luis Caivano to participate in the program 'Investigación Color, Luz y Semiótica de la Espacialidad', at Faculty of Architecture, Design and Urbanism, University of Buenos Aires.

**Dr Zélia Simões**, a member of the Executive and Organizing Committee, and also of the Advisory Committee for the Colour and Light Meeting, published the article 'A luz e a cor na requalificação da paisagem diurna e noturna: Rua Cândido dos Reis, Cacilhas – Almada', in Mendes, M et al (ed) *Espaços Vividos e Espaços Construídos: estudos sobre a cidade*. Vol 1 (3).



**Dr Ana Pais Oliveira** participated in several collective art exhibitions in Portugal and abroad, besides being selected for the longlist of 'The Solo Award 2016 – London Art Fair 2017', promoted by Wilson Williams Contemporary Art Gallery. She had also two individual exhibitions in Portugal: *Climbing tree houses* at Galeria Emergentes (Braga), and *o Bairro* at Forum de Arte e Cultura (Maia). She also successfully defended her PhD thesis 'Colour between pictorial and architectural space: relational processes in contemporary artistic practices'.



Ana Pais Oliveira painting in her studio (Shairart video, YouTube)



Slovensko združenje za barve  
Slovenian Society for Colours

of Maribor. After graduating at the University of Ljubljana, Academy of Fine Arts and Design, Prof Pogačar focused on the art of painting and graphic design, with special focus on industrial design. In his work he always managed to combine technology, science and art, with colour as his primary interest. His knowledge was successfully transferred to the students of the University of Maribor, Faculty of Mechanical Engineering, where he contributed to development of both under- and post-graduate courses. As Head of the Laboratory of Engineering Design, he mentored several students who have achieved international recognition. He remains an active member of the AIC Study Group on the Language of Colour.



Univerza v Mariboru



Professor Dr Vojmir Pogačar

A recent study, led by the Faculty of Natural Sciences and Engineering in cooperation with Faculty of Arts, University of Ljubljana, was performed by Nace Pušnik, Anja Podlessek and Klementina Možina. The aim of their research was to identify short inscriptions (words) being displayed in a limited time period on several screens of various sizes under different lighting conditions. Comparison of four colour combinations, of

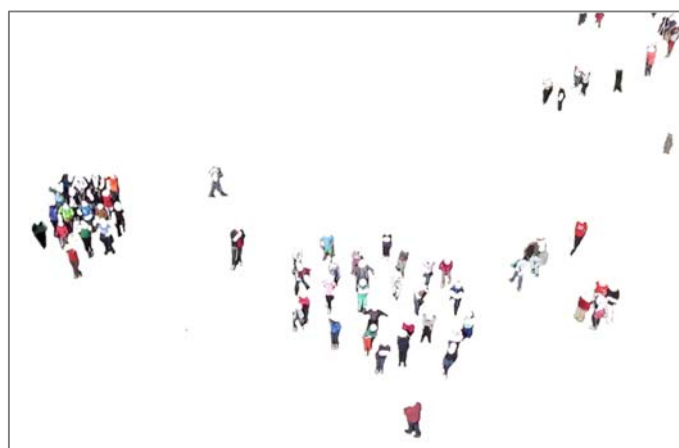


which two were positive (red on white or blue on white), and two were inverse (white on red or white on blue), indicated that the recognition thresholds for inverse colour combinations were lower when displayed on a larger screen. Conversely,



inscriptions on smaller displays were captured faster when using positive colour combination. Colour contrast, i.e. clarity, was high in both cases. Hence the effect of colour contrast on processing speed was smaller than the influence of the selected colour combination, as the results proved.

Marica Starešinič, Jure Ahtik, Andrej Učakar and Dejana Javoršek investigated an increasingly popular method of using a multicopter (also called 'drone') for capturing of colours in an event, and also the method of selection of individual colours from the crowd. With this method CIELAB values could be determined and used for further analysis. In the figure (next column), a crowd of people was isolated from other surroundings and the colours of their clothes were analysed.



Crowd of people isolated in image from their surrounding.

Primož Weingerl, Dejana Javoršek and Helena Gabrijelčič Tomc systematically analysed current and publicly accessible tools for generating colour schemes. Most of these tools are primarily intended for web developers and designers. The tools were evaluated based on their functionalities and important features for generating colour schemes, for example

how many colours can be included in a colour scheme, which colour harmony rules are supported, and whether colours in the scheme can be adjusted or reordered without disturbing the harmony.



An emotional response to colour was studied in a test group of Slovene female observers, and published: A Guzelj, A Hladnik, S Bračko, *Tekstilec* 59:311-320 (2016). According to the results, colour preferences and our attitude to colours change with age.

Age group			
Up to 19	19 – 30	31 – 50	Above 50

Ranking of colour samples according to the preferences in four different age groups of women.





## Comité del Color

The main activity of the Color Committee of Spain in 2016 was the organization of XI National Color Conference. It was hosted 19-22 July by the Universidad de Vigo in charge of Prof Humberto Michinel. During three days, Ourense was a place to share knowledge about different color disciplines: Food, Perception, Industry, Illumination, Multi-spectral imaging, Architecture and Art. 82 people participated in the conference with 60 different works. In addition, three invited lectures were presented by prestigious researchers from different universities. Prof Dr Sophie Wuerger from the University of Liverpool talked about 'Color vision across the life span: perception and brain imaging'. Prof Dr Iván Moreno from Universidad Autónoma de Zacatecas presented his work 'Role of Color in LED light source'. Finally, Prof Dr Stephen Westland gave an interesting talk about 'Non-visual effects of color'. In addition, attendees enjoyed Ourense with two tours around the city and surroundings. We would like to thank all the companies that offered their support and collaboration.

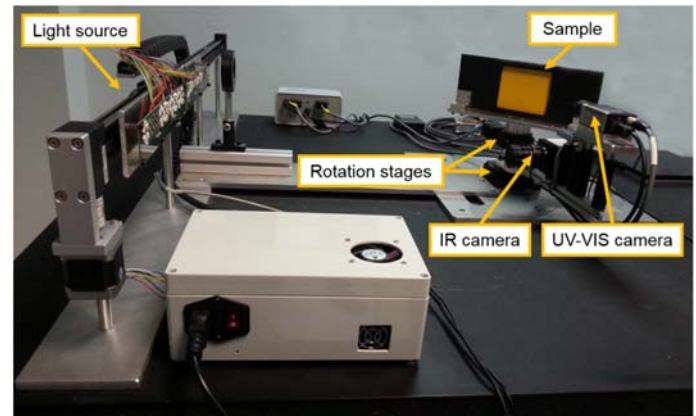


*Attendees of XI National Color Conference in Ourense.*

During this conference, the general meeting of the Committee was held. Different aspects about the progress of the Committee were discussed, including publication in the journal *Óptica Pura y Aplicada* belonging to SEDOPTICA, the renovation of our website (<http://www.sedoptica.es/SEDO/color>), and election of the new executive committee, which is now constituted by Dr Juan Luis Nieves (Universidad de Granada) as President, Dra Meritxell Vilaseca (Universitat Politècnica de Catalunya) as President-elect, and Dra Esther Perales (Universidad de Alicante) as Secretary. Once again, Dr Juan Luis Nieves has been designated as the AIC Representative of the Color Committee of Spain.

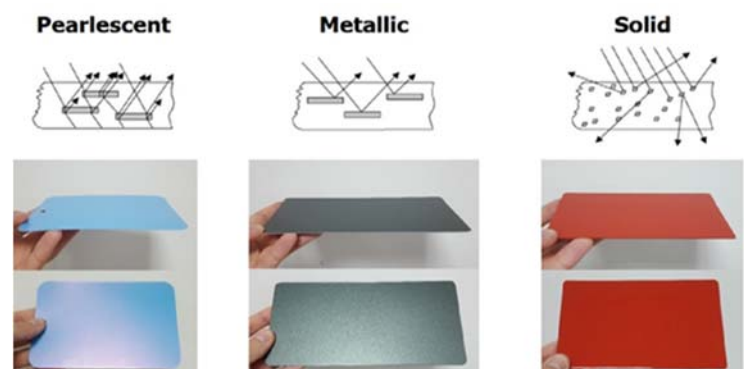
Furthermore, it should be noted that Prof Dr Enrique Hita from the Universidad of Granada, a relevant member of our Committee was designed Honorary Member of the Sociedad Española de Óptica (SEDOPTICA) due to his intense career in Optics, Color and Vision. We would like to express our gratitude to Dr Hita for his participation on the Committee.

Some members are working on the characterization of goniochromatic pigments commonly used in automotive coatings. A gonio-hyperspectral imaging system was developed to acquire spectral images with high spatial resolution, using different angular configurations of illumination and observation. The system has been designed to cover part of the ultraviolet (UV), all of the visible (VIS), and part of the infrared (IR) range of the electromagnetic spectrum. The system is based on light-emitting diodes (LEDs).



*Gonio-hyperspectral imaging system, developed at the Universitat Politècnica de Catalunya*

Different samples of commercial automotive coatings were analyzed by the system for their spectral reflectance factors at different geometries, following the standards DIN 6175-2, ASTM E2194, and ASTM E2539; the textural effects of sparkle, graininess and mottling were also evaluated. The spectral and colorimetric performance of the system was evaluated with respect to commercial gonio-spectrophotometers. Regarding textural measurements, new specific indices – mainly based on first- and second-order statistics – have been developed in this work for the assessment of sparkle, graininess and mottling. The system provided accurate results concerning spectral and colorimetric data in the VIS and IR ranges when compared with those of the reference devices. The largest differences were found for geometries close to the specular angle. Sparkle and graininess assessments also led to precise results, especially when applying the developed indices. Mottling results allowed clear differentiation between samples with and without this effect. The research is summarized in a dissertation thesis defended by Francisco J Burgos with the supervision of Dr. Meritxell Vilaseca and Dr Jaume Pujol from the Universitat Politècnica de Catalunya.



*Angle-dependent reflectance of three different material surfaces.*





During 2016 we have continued to raise the interest in colour education for both students and teachers in our ongoing project 'Ung färgkraft' (Young colour force). How do we attract young students to learn more about colour? How can we make colour education become an interesting and important topic? How can we convince management and teachers that colour knowledge is an important topic in the experience of a room? We now have a network of teachers in almost all of the design and architecture schools in Sweden. We meet once a year in a colour workshop for inspiration and exchange of experience. Students are invited to our members' meetings and they hold free membership in the Colour Centre.

Overall, we want to increase the knowledge of colour and make the use of colour an important element in the design process. We will create multiple tasks for design and architecture students to highlight the interest and importance of colour! This is the goal of our colour design competition 'Prisad Färg' (Awarded Colour) for students of design, architecture, visual communication and art in Sweden.



Winners of Prisad Färg 2016 at the Stockholm Furniture & Light Fair.

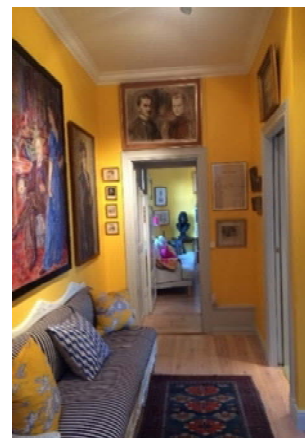
The theme in 2016 was 'Our Senses'. The task: How does a colour experience taste? Does yellow, red or blue smell of something? Can you hear a tone? How can a colour feel? We have our five senses: taste, smell, sight, hearing and touch. We need our senses to interpret our environment, something we do not always think about. The competition brief is to create a sensual experience with colour. With colour you can create dramaturgy and affects. The colour can put the experience in the centre of sensation. Specify the feeling you want to create, and which senses you want to arouse in the viewer.

### Member's meetings

In January we visited the exhibition *Rejält Retro* at the Nordic Museum which shows life and work, trends and traditions, in Sweden from the 16th century to today. This time we had a guided tour about how you can draw inspiration from traditional rural painted interiors to create contemporary themes in the design of today.



In March we celebrated the International Colour Day (pp.39-40). In May we arranged a very popular and exclusive guided tour to Villa Akleja in Vaxholm, in the northern area of Stockholm. The well-known antiques expert Claes Moser and his wife, who live in this house, told about life in this home at around 1901. At that time it was owned by the artist JAG Acke and the house was a meeting place for contemporary cultural personalities.



In August we visited the very colourful retrospective exhibition 'I oändligheten' (Infinity) of works by Yayoi Kusama at the Museum of Modern Art in Stockholm. Her distinctive artistry has captivated audiences for more than six decades. Like few other artists, she moves unerringly between painting and sculpture, between art and design, between East and West.



In September we listened to a talk on natural dyes with Lina Sofia Lundin. Most of our fabrics currently contain excessive amounts of chemicals that affect people and the environment in a negative way. Lina Sofia demonstrated how traditional plant colouring can be used in a new and more benign way.



The Annual Meeting with a talk about colour identity in different cultures, with a focus on South America.

In November we held the annual meeting, which ended with a colour talk entitled 'Färgen en del av platsens själ' (Colour one important part in the soul of a place) with Joanna Pierre. It was a colour trip in culture with a focus on South America, very appropriate for the recent AIC meeting in Chile.

Berit Bergström, Secretary,  
Swedish Colour Centre Foundation, [www.colourspot.org](http://www.colourspot.org)





decided upon through a strategic board meeting and a poll inquiring about possible key topics for annual meetings. The themes included colour trends, signage, set design, conservation/restoration, and materials. During the year, approximately 210 members supported pro/colore, and all meetings were extremely successful, which especially pleased the Board Members and Administrative Office.



*Trends and Trend Colours at STF. Photo: Marius Guirard*

The 25th pro/colore Ordinary General Assembly was held on 18 March at the new location of the Swiss Textile College (STF) in Zurich. Afterwards, the first event 'Trends and Trend Colours' took place, based on the experiences and perspective of Alexandra Pfister. Schooled as a dressmaker and designer, she told pro/colore members how trend colours lie dormant everywhere, and how curiosity plays an important role. Trends must be discovered, which is possible when the educated eye observes and interprets. Using a diagram, she further explained the frequency of trend changes. To bring attention effectively to a colour always means to touch people's innermost being.

On 22 April, several talks were presented on 'Colour and Signage'. Thirty participants travelled to Bern University of the Arts, HKB. First, Dr Sylvia Blezinger, of Blezinger Healthcare, talked about spatial orientation in hospitals and healthcare spaces, explaining how the function of signage is to help people find their way without assistance. Second, Iver Knebel and Catherine Woodman, founders of the visual communications firm blink design in Zurich, gave participants insight into their completed project at the Adidas Northeast Parking Garage in Herzogenaurach (DE). The aim was to design an attractive signage system in combination with energy-saving lighting.

After the break, Peter Lüthi and Urs Odermatt, both partners at the design firm kong in Biel, presented their design concept and its implementation of signage at the Magglingen Sports Centre, a project commissioned by the Swiss government. The sports facilities and spectator seating were developed to be flexible, rather than stationary, and therefore able to be adapted to accommodate different uses. For the final presentation, the event's host Prof Jimmy Schmid presented the advanced MAS Signage Program at Bern University of the Arts.

On 11 June, participants had the opportunity to look behind the scenes at the Theater St Gallen. Deputy Technical Director

Frank Stoffel as well as the prop managers Elisabeth Künzli and Martina Wagner guided us throughout the backstage world. This included visits to metal-working and welding workshops, the painting, carpentry, wall-papering and upholstery studios. At the end the participants enjoyed a breath of set-design air, viewing the backdrop of the musical *Don Camillo*. Afterwards, we enjoyed the stroll to Klosterplatz, where preparations were underway for the *El Cid* pageant.

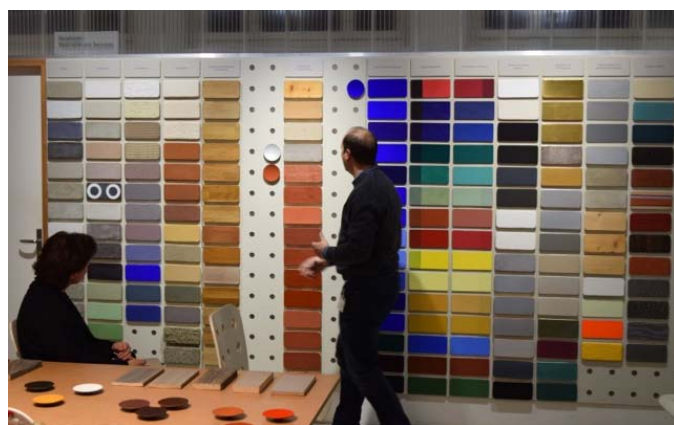


*Theater St. Gallen. Photo: Ralf Studer*

On 9 September was 'Restoring Façade Paintings and Buildings' in Stein am Rhein. Claudia Eimer and conservator/restorer Rolf Zurfluh, acknowledged for his work by many awards, told countless stories about the town and restoration work on façades. Eimer, the first woman to hold the public office of City Council President, gave participants a tour of the Town Hall. Every corner of this prominent building is steeped in history and is unique in terms of architecture, material, design and colour.



*Building Façade in Stein am Rhein*



*Materials at Haus der Farbe, Zurich. Photo: Marius Guirard*

The last event on 15 November was at the Haus der Farbe HF, the Professional School and Institute for Design in Craft and Architecture in Zurich. Matteo Laffranchi and David Keist provided insight into the studio, where a group of apprentices showed a student project of the HF colour design course. The highlight was visiting the collection of more than 400 samples of surface materials that are options in designing buildings – demonstrating an amazing diversity of colours, textures, and materials. The respective website will be launched in 2017. More information and details of each event are available online at [www.procolore.ch](http://www.procolore.ch)





中華色彩學會

Color Association of Taiwan

The Color Association of Taiwan (CAT) hosted some inspiring activities and well-attended meetings during the year 2016. Highlights included celebration of International Color Day, attending the ACA Conference in China and the AIC Conference in Chile, holding the 'Classics of Vision Science' Symposium and the CAT International Color Conference. At the end of the year, CAT made a successful proposal to the Industrial Technology Research Institute of Taiwan to add Color Specialist as a new industrial professional certification title.

### Celebrating International Color Day

CAT executives and members documented the ICD by taking photos of color-related lectures, practices and activities on 21 March in Taiwan and spreading these images with the ICD logo on social media. Over 100 CAT members shared over 50 colorful pictures of the day, which made International Color Day a little more visible in the media sphere.



### Classics of Vision Science Symposium

On 14 May CAT organized the 'Classics of Vision Science' Symposium jointly with the College of Environmental Design and the Department of Information Communication in Chinese Culture University. For this event, CAT invited Karl Johan Bertilsson, Vice-President of NCS Colour AB, to deliver a talk addressing the importance of color in design practice. Bertilsson also participated in the panel discussion and exchanged opinions with CAT color researchers and specialists on desirable properties of an ideal color system for designers.



Participants and invited speakers in CAT CVS Symposium

### Attending ACA 2016 China

CAT representatives attended and presented papers in the third ACA Conference held in Changshu, China on 21-22 May.



### Attending AIC 2016 Chile

CAT representatives attended the AIC 2016 Interim Meeting: Color in Urban Life, held in Santiago, Chile in October. They met Hsin-tung Chen, the Taiwanese ambassador to Chile, and Gabriel Osorio Vargas, the Chilean film director who created the short animated film *Bear Story* (2015), which won an Oscar.



Wen-Yuen Lee, Gabriel Osorio Vargas, Hsin-Tung Chen, Tien-Rein Lee

### Organizing 26th CAT Conference

The 26th CAT International Conference on Color Design, Application, and Science was held on 20 November in Taipei at Chinese Culture University. CAT invited distinguished color scientists, Prof Tetsuya Sato (Japan) and Prof Ronnier Luo (UK), as keynote speakers. Ten research papers were presented in the sessions of color technology and color design.



### Promoting the Certification of Color Specialist

Color scientists of CAT made a successful proposal to the Industrial Technology Research Institute (ITRI) of Taiwan to add 'Color Specialist' as a new industrial professional certification title. CAT will take the major responsibility to establish the training, evaluation, and certification grading programs.





The Color Research Center (CRC) at Rajamangala University of Technology at Thanyaburi, directed by Dr Phuangsuwan, was active during 2016, as usual. In June a team of six staff

members visited the University of Information Technology in Yangon, Myanmar, to give lectures on color science and application, and organized a workshop with the help of Konica Minolta on how to measure colors. Assoc Prof Obama of Shizuoka University of Art and Culture, Japan, joined the team to strengthen the lecture. This is an annual activity of CRC to let university people in ASEAN countries know about the importance of color science, design and application, and the team will visit Indonesia this coming June. The team visits not only countries abroad but also universities in Thailand to encourage teachers to promote education and research on color science and human vision.



*Dr Pichayada Katemake, Ar-Pa Pisanpiti (student from CIMET course), with Dr Eric Dinet and Prof Alain Trémeau from France.*

On 3 May, Prof Alain Trémeau and Dr Eric Dinet visited the Department of Imaging and Printing Technology, Faculty of Science, Chulalongkorn University and gave a tutorial on recent developments in computer vision. It was funded by ICT-Asia Regional Program. We attended the activity 'Dialog in the Dark' to experience the daily life of blind people. On the same event, Dr Jarkko Mutanen introduced the FinCEAL program. On 4 May, Prof Trémeau, Dr Dinet and Head of Dept of Imaging and Printing Technology, Dr Pichayada Katemake, had a discussion on educational cooperation with the Université de Lyon and UJM Saint-Etienne, who run the color-related courses: COLOR Science for Industry (COSI) and Color in Informatic and MEDIA Technology (CIMET). Also involved was Dr Stéphane Roy, Attaché for Scientific and Higher Education Cooperation, French Embassy in Thailand.

On 8 July, the Dept of Imaging and Printing Technology, Chulalongkorn University and Canon (Thailand) proudly opened the Canon Exploratorium where you can interactively learn by yourself about basic photography and digital printing. On 3-4 August the department organized 'Color Matching from Ink Formulation Software: Application Hands-on Training'.



*Opening of the Canon Exploratorium at Chulalongkorn University.*

From 20 Nov to 17 Dec, Dr Katemake visited UJM Saint-Etienne, and gave lectures on Advanced Color Science to Master students in the Color Science for Industry (COSI) course and conducted research activities on mutual reflection.



*CRC visiting lecture at University in Yangon, Myanmar.*

In July the CRC organized an intensive three-day seminar to study LMS cones, CIECAM, and the use of displays in psychophysical experiment by inviting Prof Emeritus Yaguchi of Chiba University, Japan. Staff and students coming from three different universities learned a lot from him. In September a CRC lecture was held for students, delivered by Prof Yamauchi of Yamagata University, Japan. In August two graduate students of Chiba University came to CRC on the laboratory-to-laboratory exchange program to stay for 45 days for joint research. The result will be presented at the annual conference of the Color Science Association of Japan to be held in June at Tokyo. Four staff and students of the CRC will also attend this conference and present their papers.

It can be said that education and research on color science and application have recently become more active than before in Thailand. In evidence it may be mentioned that seven Thai people attended and presented papers at the 3rd Conference of Asia Color Association held at Changshu, China, in May. The 4th ACA will be at Chiang Mai, a beautiful city of north Thailand, and it is expected that many Thai people will attend. The CRC expects to have new three PhD students from the next academic semester starting in June and the research activity at the CRC should become stronger. See [crc@rmutt.ac.th](mailto:crc@rmutt.ac.th)



### Publications

The ISCC News was published quarterly in 2016. Michael Brill's *Hue Angle* columns featured such fascinating topics as 'Think Pink' written by Roseanna Roberts as guest author, 'A Gentle Color Paradox', 'From Color Science to Privacy' by Michael Stokes as guest author, and 'Paradox Lost'. Carl Jennings from the University of Hawai'i started a new column entitled 'Refractions: Seemingly Random Musings on Color' to pique our curiosity on such color topics as 'Men in Black: Chromophobia in Western Culture', 'Stop and See the Roses', 'The Good, the Bad and the Ugly' and 'How Art Got its Colors: The Alchemists'. Another quarterly entry is 'A Blast from the Past' written by Paula J Alessi, which reminisces on valuable historic content from ISCC newsletters published 50 years ago. ISCC is pleased to offer our entire newsletter archive online at [www.iscc.org/resources/NewsletterArchive.php](http://www.iscc.org/resources/NewsletterArchive.php) for 1933-2015

### Meetings

The 2016 ISCC Annual Meeting was co-located with the Imaging Science and Technology (IS&T) Color Imaging Conference in San Diego. The CIC 24 meeting was 7-11 November, with the ISCC meeting as a Friday morning workshop, with the theme 'Life of a Color'. The workshop began with a talk from Mark Fairchild, who traced the fate of a photon from the surface of an object to the point that a color appearance is experienced in the brain. Next, Kelly Kovak from Color Association of the United States (CAUS) described how a brand color is originally selected, and then the associated strategic decisions made for introducing that color into the marketplace. Max Derhak from Onyx Graphics presented a color-management system for a complete process from light sources onto objects captured through color matching, providing the means to add perceptual aspects of color. Finally Ann Laidlaw from ACL Color Consulting presented 'The Manufacturing of a Color', following the path of a color from the creative process through development, approval, manufacturing and quality control.



Presenters at the ISCC Workshop (left to right):  
Kelly Novak, Max Derhak, Ann Laidlaw and Mark Fairchild

ISCC's very successful online seminar series continued in 2016, starting with a webinar given by John Conant from Aerodyne Research on 'The Right Paint Color to Help Hide a Helicopter'. The second webinar was given by Nurhan Becidyan, a retired CEO and President of United Mineral and Chemical Corporation, on 'The Chemistry and Physics of Special-Effect Pigments and Colorants'. The third and final webinar was given by Professors Susan Farnand and Michael Murdoch from the Munsell Color Science Lab at Rochester Institute of Technology, on 'Challenges and Rewards of Teaching an Online Color Science Course'. These 60-minute webinars are free and open to anyone around the world. Some presentations remain available online. If you join our LinkedIn online community, you will receive notices about the webinars. See <http://iscc.org/resources/SeminarSeries.php>



ISCC President John Conant presentation to Dr Ellen Carter.

### Awards

The 2016 ISCC Macbeth Award was presented to Dr Maxim Derhak. He was recognized for bringing to the public a method of color management based not just on the theoretical CIE illuminant D50 colorimetry, but on the spectral properties of the color stimulus functions. This provides a greater flexibility to those modeling the process color output of devices such as digital printers and presses and provides a framework for the inclusion of special colors, known as spot colors or brand colors. This framework became a formal specification of the International Color Consortium (ICC) in 2016, and is known as "iccMAX". The naming, we are assured, refers to its maximum color management potential, and is in no way reflective of its primary author. Also in 2016, Dr Ellen Carter and Mr Jack Ladson received Honorary Membership to ISCC. Ellen is the longtime Editor of the journal *Color Research & Application*.

### History

The Hagley Museum and Library is home to the ISCC artifact collection that used to reside at the Cooper Hewitt Museum in New York City. After Dorothy Nickerson passed away, Joy Turner Luke donated all of Dorothy's color collection to the Hagley. ISCC is revisiting the cataloging of this historical collection. For more information, please visit the website at <http://iscc.org/resources/hagley.php>

More details on any of the past 2016, current and upcoming activities can be found at [www.iscc.org](http://www.iscc.org)



## ASSOCIATE MEMBER – IACC-NA



The highlight of 2016 was our annual meeting, held in Richmond, Virginia, a historic city overlooking the James River, which was settled first by Native Americans and then by colonists in the 17th century. As the capital of the Confederacy and now of the state of Virginia, there was much history and architecture for our color designers to enjoy during their stay. We lodged at the Linden Row Inn, a beautifully restored 1839 building, and held the meetings at the same location.



Our meeting began with a presentation by colorimetry expert, Lori Sawaya, on 'Color Systems'. Then our President, Karen Collins, conducted the member meeting, our first without our beloved Frank Mahnke or Danielle. They were certainly missed. After a box lunch (and a decision to hold our 2017 meeting in Pittsburgh, near Falling Water), our Vice-President Ellen Divers presented on 'Color Research: Perspectives and Practicalities', an exploration of the history, methods and current trends in color research. The presentations were followed by a hands-on activity led by Ellen designed to balance out a content-heavy day with some creative expression.



*Creative group colour activity at the Annual Meeting.*

Dinner that evening was held at The Boathouse, where we had a room to ourselves with beautiful views of the James River and where we enjoyed camaraderie with our color friends – as well as some delicious crabcakes!



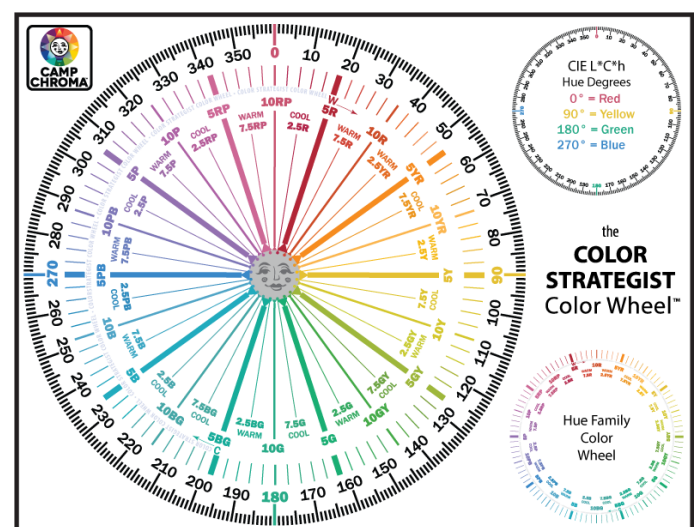
*Monticello, home of US President Thomas Jefferson*

The next morning found us driving west to Monticello, home of our country's third President, Thomas Jefferson, who is known for his architectural innovations, along with many other accomplishments. Not only was the tour interesting and informative, we also enjoyed the grounds, the vegetable and flower gardens and other quarters. Afterwards, most members found their way home while a few others remained and enjoyed Richmond's charms for a bit longer.

In terms of current research projects, Ellen Divers has been working on her thesis which addresses the holistic use of color in a dementia unit with the goal of benefiting both residents and staff. She has been combing the journals on both color and design and her plan is to conduct a pre-and post-evaluation with staff after repainting an existing unit. She is hopeful that this project will conclude this year and that her thesis will provide insights on how to approach color in special care units.

In other news, Lori Sawaya has condensed her color expertise into an online training program called *Camp Chroma* which was launched in January, 2016. Its focus is colorimetry and how to leverage spectral data to identify hue families and specify color palettes for the built environment. See:

<http://campchroma.com/color-strategist-color-wheel/>







Founded in 1962, the Color Marketing Group® (CMG) is the premier international association for color designers. Our mission is to create color forecast information for professionals who design and market with color. Each year CMG members analyze thousands of colors,

attend numerous ChromaZone® Color Forecasting Workshops and regional Conferences, and travel the globe in search of the next big thing. In 2016 North American Workshops were held in California, Colorado, Florida, Illinois, North Carolina, Ohio, Ontario, and Texas. International events were held in Milan, Bangkok, Edinburgh and Shanghai. During these events, participants discussed and identified the trends and influences that are driving future color directions. Workshops in 2016 explored color trends for 2018 and beyond.

The results of all this hard work are curated by a team of experienced CMG Members, who narrow down the candidate colors to a final shortlist of 16 from each region. These colors best represent the directions that color design will take in North America, Europe, Asia, and Latin America. This global forecast – the famed World Color Forecast™ – was revealed at the 2016 Summit in Albuquerque, New Mexico. Summit participants also received printed copies of the Forecast.



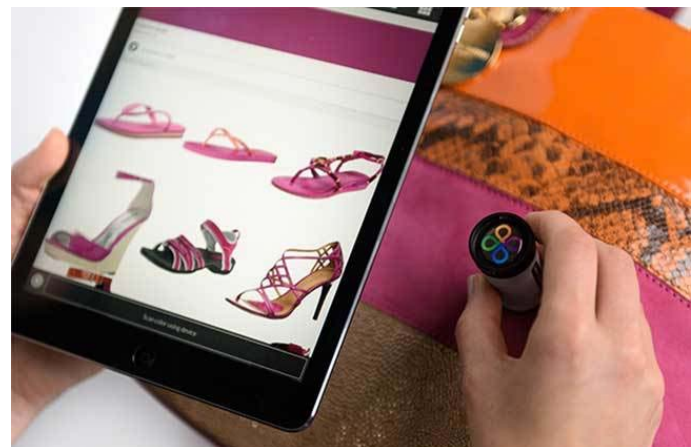
*Presentation at the CMG Color Summit in Santa Fe, November.*

In 2016 the Color App Workshops Committee continued to develop the Summit Workshop selections by introducing a specialized Workshop for Color, Material & Finishes (CMF). The goal was to explore how materials, processes, and finishes are influencing and driving the need for new colors and applications. Participants identified the future trends for materials and finishes, and how these might influence or be applied to CMG's 2018+ World Color Forecast™. The final results were distributed electronically to CMG members.

The 2016 Summit was also the launching pad for our Color Muse App, a digital resource to streamline color selection. It provides a mobile color scanning system that digitizes the way colors and products are accurately sourced, organized, and purchased. This project was led by CMG Committee Members, in partnership with CMG Company Member, Variable Inc. Summit attendees received a complimentary CMG Color Muse, and CMG members received exclusive access to all CMG's regional color trends over the past 5 years, with reference libraries including British Standard, Munsell, NCS, and RAL.



CMG Members collaborated in interactive Color and Trend Workshops, sitting shoulder-to-shoulder with like-minded comrades, comparing contemplations on color and trend; learning from and teaching each other. During the Summit CMG also launched the first Future Thinking Workshop. This inaugural Workshop moves beyond color and trend watching and goes even deeper to the center of where trends begin. Taught by three world-class CMG futurists, this event looks at how to find and interpret trend origins, how to connect trends with color, and how to develop original thinking and use it in your work. Contributors to this Workshop in 2016 received the final results from each of the Workshop groups.



*Color Muse measurement device in use with app on an iPad*



*CMG Trend Workshop: identifying where color trends originate.*

Finally, the Summit saw the unveiling of CMG's new brand identity, designed by CMG Member, Britton Marketing & Design Group. Britton worked with CMG's Executive Committee to rejuvenate our brand, helping us truly to reflect the creative spirit and personality of the association. For more information on Color Marketing Group, our events, International Summit or membership, please visit our website at [www.colormarketing.org](http://www.colormarketing.org)



# INTERNATIONAL COLOUR DAY (ICD)



## INTERNATIONAL COLOUR DAY

announced as the winner of the international competition for the ICD logo design. This special report describes some creative celebrations by AIC members around the world in 2016.

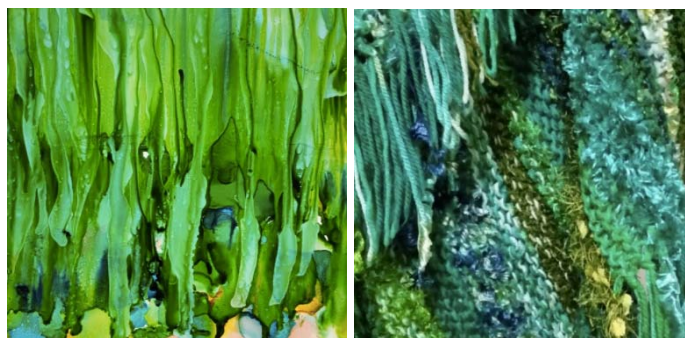
### AUSTRALIA

Australia celebrated International Colour Day with several activities, both Divisional and National. NSW Chairperson, David Briggs, hosted an exhibition entitled 'A Visual Dictionary of Colour' at the National Art School, Sydney. The exhibit included many painted illustrations, photographs, three-dimensional models and other works made by NAS undergraduate students in a workshop conducted during Drawing Week. The student works were supplemented by some of David's own digital illustrations. Some of the colour theories on show elicited some lively discussions.



*NSW ICD Visual Dictionary of Colour*

The Queensland and Western Australian Divisions held quiz evenings based on colour. Western Australia included some colour games as well. Participants, both young and not so young, enjoyed the lively and fun activities and everyone came away with improved colour knowledge. It was concluded that colour trivia events are a great way to spread colour knowledge and these may become annual events.



*Two prize winners of the competition 'How Does Green Speak to You': (left) 'In the Depths of the Ocean' by Fiona Reddoch, a watercolour painting; (right) a rug in recycled materials by Linda Blyth.*

Australia National President, Judith Briggs, launched a Facebook photo competition, 'How Does Green Speak to You?'. There were 97 entries from both CSA members and the wider community, all vying for two fabulous prizes: a three-night stay at the eco resort, Bina Burra Lodge in Lamington national park in Queensland; and a set of 24 wonderful art markers generously donated by Winsor & Newton. It was interesting to see what green means to a broad group of people.

### CANADA

CRSC organized the annual Spectrum Series to celebrate ICD on 21 March. The event took place at Sip Wine Bar, in Toronto. Colour Research Society of Canada members conducted colour presentations and activities in the private room.



*An evening celebrating colour in Toronto*

### GREAT BRITAIN

CGGB's celebration of ICD was held in the University of London and was organised by Andrew Hanson of NPL. The new generation of colour enthusiasts was represented by a number of Masters students from the Royal College of Art, with a rolling presentation of their projects. The programme comprised six talks with contrasting subjects – from art and fashion to science and education. The first engaged with the use of colour in art teaching and in particular showed examples of Roger Woodwiss's Albers workshops, including overlapping transparency and investigation into simultaneous contrast. This was followed by Janet Best on colour in fashion, touching on the significant role of colour in determining consumer choice.



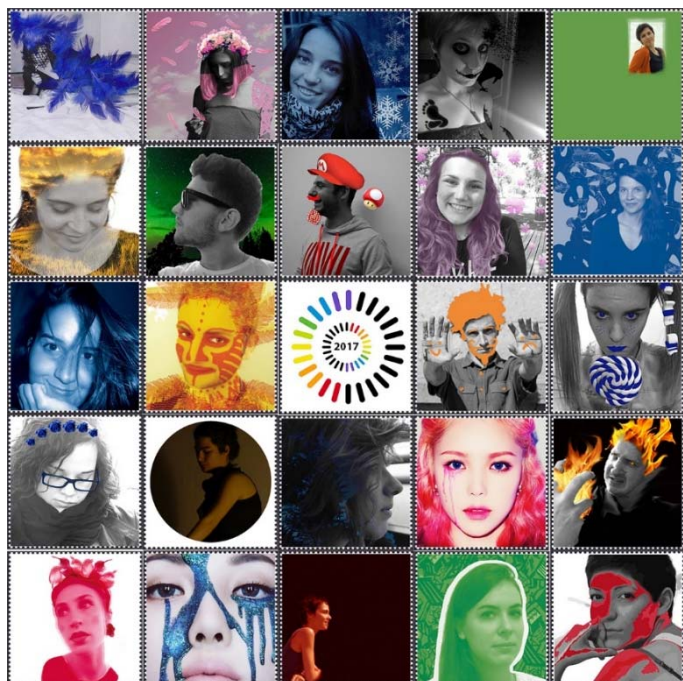
*The Hula-Hope Mural at Fox Primary School, London*

The third talk, by artist Philip O'Reilly, focused on how colour works in a wide range of materials. Shirine Osseiran showed a film revealing the process of creation of one of her murals, the Hula-Hope Mural. The subject of measuring colour and complications introduced by human colour perception was discussed by Andrew Hanson. The evening ended as it began, with the art projects of the RCA students, and their tutor, Sheena Calvert, explained the ideas behind each project.



## ITALY

The Fondazione Accademia di Comunicazione (Milan) organized a performance by students to celebrate the ICD, together with Lia Luzzatto, Renata Pompas and the photographer Sergio Tornaghi. It produced a grand miscellany.



## KOREA

KSCS hosted a general assembly and ICD seminar at Ewha Womans University under the theme of 'Culture and Color'. The aim was to reflect on the existence and meaning of color, which is present in our daily life, based on the culture code. To commemorate this event, KSCS developed a smartphone application called 'LOOK@COLORS in Culture', through which members communicated their color and culture codes.



## MEXICO

AMEXINC celebrated ICD at the Faculty of Psychology, UNAM, with an activity directed to professors and students in which main objective was to create pictorial representations of their emotions using vinyl paint of different colors. By making an exhibition of the collectively generated drawings, they were promoting the exploration of emotions through the medium of paint.



## PORTUGAL

The Associação Portuguesa da Cor (APCor) joined together the celebration of ICD with commemoration of 12th Anniversary of the Laboratório da Cor at Faculdade de Arquitectura Universidade de Lisboa. In the opening session institutions were represented by the Presidents of the FA-Faculty of Architecture and the FA Centre of Research of Architecture, Urbanism and Design, the Scientific Council, the President of Associação Portuguesa da Cor, the Director of the Med-Croma Module and the Coordinator of the Colour Laboratory. They presented projects carried out by researchers, professionals and partner institutions both private and public, including several APCor members, to an audience of over 80. Three invited speakers dealt with colour in biology, physics and architecture: Prof Jorge Paiva, Prof Miguel Bernardo and Prof Elisa Cordero Jahr, a visiting researcher from Chile.



*Afternoon roundtable discussions at the Faculdade de Arquitectura*

The afternoon discussions focused on the 'Future of Colour and Light Research in Portugal'. For that purpose, 40 participants occupied the doctoral course rooms and shared experiences and knowledge, contacts and interests, facilitated by the adoption of round-table discussions. This arrangement promoted trans-disciplinary analysis, predominantly in the areas of Arts and Design, Multimedia, Health, Biology, Technology, Architecture and the Environment. The closing plenary identified and cross-compared connections among a variety of colour disciplines and suggested further incentives to colour education, promotion and dissemination of multidisciplinary research projects and collaboration with society at large.

Prof Dr Maria João Durão  
ICD Coordinator  
Faculty of Architecture  
Lisbon University  
PORTUGAL  
[mjdurao@fa.ulisboa.pt](mailto:mjdurao@fa.ulisboa.pt)  
T: +35 1 916 220 608





# AIC STUDY GROUP ON ENVIRONMENTAL COLOUR DESIGN (SG-ECD)



The ECD Meeting at the AIC Conference 2016 in Santiago, Chile, was held at the Faculty for Architecture and Urbanism (FAU), University of Chile.

Invited speaker Verena M Schindler presented the opening lecture on new colour trends in architecture and on different approaches concerning how ECD members analyze and apply colour in the urban environment. Renowned architect Louisa Hutton, of Sauerbruch Hutton (Berlin/London), gave an invited talk describing her subtle approach to colour in the firm's architectural projects. As with Gottfried Semper, for Hutton colour is the most sublime form of 'dressing' of buildings and not merely a decorative enrichment of form. Hutton's explorations of surface, depth, and solidity include colour and materials. The firm's Brandhorst Museum (2009) in Munich has become a contemporary icon of colour design in architecture. Here a first layer of horizontally folded bi-coloured sheet metal wraps the building for insulation. In front of this, ceramic rods have been fixed vertically, constituting—with sunlight and shadows—a textile-like double skin.

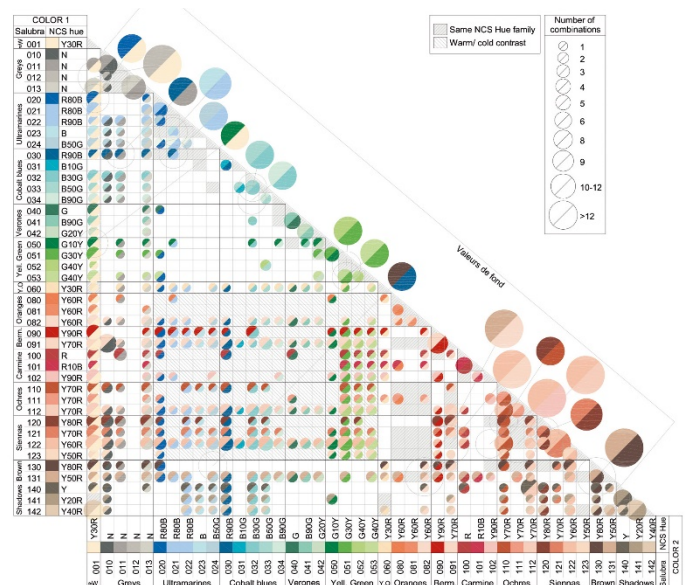


AIC 2016 invited speaker Louisa Hutton; Sauerbruch Hutton's colour concept of the southwest façade of Museum Brandhorst, Munich.

Several short talks were featured on the ECD Meeting programme. Yulia Griber (Russia) examined regulations related to environmental color design in Russia and gave some insights into the topic. Darío Suárez (Argentina) talked about urban chromatic design analysis of Villa Carlos Paz, Argentina.



SG members at AIC 2016, Pontificia Universidad Católica, Santiago



Juan Serra Lluch's diagram of Le Corbusier's Salubra pairs of colours.

Juan Serra Lluch's (Spain) talk was about a colour-combination app that runs Le Corbusier's Salubra colour keyboards. Serra presented interesting research findings concerning Le Corbusier's preferred colour combinations that were published in 2016 in *Color Research and Application* 41(1):85-100. Elisa Cordero Jahr (Chile) described colour schemes that were applied to institutional buildings of Austral University of Chile in Valdivia at the Teja Island Campus. One example of the use of colour is the Ernst Kasper Building, where the colours were found in Kasper's own house in Aachen. Margarida Gamito (Portugal) expressed her views on the impact of *azulejos*, polychrome glazed ceramic tile panels applied on building façades or exterior walls in urban Lisbon. Gisela Meyer-Hahn (Germany) reflected on her own colour-light compositions as temporary artworks for wind power plants, presented at night, describing their impact on visitors and the landscape. Karin Fridell Anter (Sweden) presented her publication on a colour & light research project. Finally, Verónica Conte (Portugal) discussed a colour-emotion atlas that she is working on.



New ECD members in 2016 are: Anahí López (Argentina); María Augusta Barragán (Bolivia); Milena Quattrer, and Pedro Felipe Pinho Souza (Brazil); Sebastián Cares Peralta, Lina M Cárdenas, and Cecilia Valenzuela (Chile); Saara Pyykkö (Finland); Isabel Rosa Müggler Zumstein (Switzerland); and Cath Carver (UK).

SG CHAIR: Verena M Schindler  
Atelier Cler Études Chromatiques  
64, rue Vergniaud  
75013 Paris, FRANCE  
T: +33 1 45 80 91 15  
[ecd.studygroup@yahoo.com](mailto:ecd.studygroup@yahoo.com)  
[www.aic-colour.org/sgroups.htm](http://www.aic-colour.org/sgroups.htm)





Another year passed in 2016 without a formal meeting of SG-CE, but it certainly did not mean less activity. We briefly report some of the activities of SG-CE members around the world, from Brazil and Argentina through Italy and Croatia to Japan.

**Brazil** In November SG-CE member Prof Dr Pablo Manyé presented a paper at the Science and Technology Centre (CCT) of Universidade Regional do Cariri. The title was 'Chromology, between the waves', where he explained the necessity of a new science of colour with an expanded epistemological field. At the Centre of Arts he regularly presents his Aula-Luz (Light-Class) as the first class for undergraduate students of the Theater and Visual Arts course.



*Pablo Manyé presenting his Aula-Luz (Light-Class) at the Universidade de Fortaleza – Unifor, Brazil.*

**Argentina** At the ArgenColor 2016 Conference, workshops were organised for students, including: 'Chromatic spaces. Exploring contrasts', 'The tension between surface and representation. Heuristic exercises around a system of color', and 'Applications of Color in Serigraphy. Group expressive experiences'. Practical work involved painting wooden palettes and constructing a chromatic installation (see also p.10).



**Italy** Prof Maurizio Rossi and Prof Andrea Siniscalco, in the context of the Master in Color Design & Technology and Master in Lighting Design & LED Technology courses at Politecnico di Milano, implemented a framework of experiments for teaching colour and lighting design. The system consists of more than 20 portable boxes containing experiments on the phenomena of light and colour perception. These are not always easy to explain, and direct visual experience helps students to understand them from physical, visual and cognitive points of view.



*Some of the experimental apparatus at Politecnico di Milano.*

**Italy** SGCE member Renata Pompas organised and conducted two editions of the colour workshop 'Knowing and Understanding Colour', and with Lia Luzzatto and the students of Accademia del Lusso joyfully celebrated the International Color Day 2016.



**Croatia** Maja Strgar Kurečić, from the University of Zagreb, led a Light Painting Workshop with students in Turku, Finland, 4-6 October. The goal was to show some chosen locations in Linnankatu Street by employing different ways of painting with light and to bring the attention of street passers-by to the work process. The best results were obtained against dark backgrounds, reducing the impact of the street lighting.



**Japan** Kanae Aoki reported on an interesting educational program of the exhibition 'Records and Recollection' which was held at the Museum of Modern Art, Wakayama, Japan (where she is Curator) in the summer of 2016. At the end of the show, visitors of all ages were shown 50 sheets of coloured paper, and asked to prepare their recollection of the exhibition by selecting colours and cutting out shapes. These colourful pages expressed the visitors' memories through colours, and in this way became their records of the visit.



SG CHAIR: Robert Hirschler  
Attila u 93-95, 1039 Budapest  
HUNGARY  
T: +36 1 240 1094  
[robert.hirschler@yahoo.com](mailto:robert.hirschler@yahoo.com)  
[www.aic-colour.org/sgroups.htm](http://www.aic-colour.org/sgroups.htm)



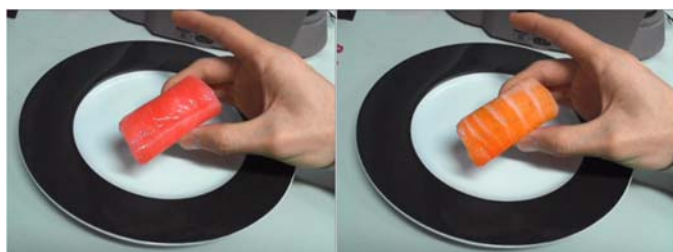


# AIC STUDY GROUP ON COLOUR VISION AND PSYCHOPHYSICS (SG-CVP)

The purpose of this Study Group (SG-CVP) is to discuss basic and practical studies in colour vision, colour appearance, colour discrimination, brightness perception of colours, colour preference and application tools for planning and testing universal colour designs, and to share useful information among the members. We deal with a range of topics from colour vision models to universal colour design, including colour perception of the elderly.

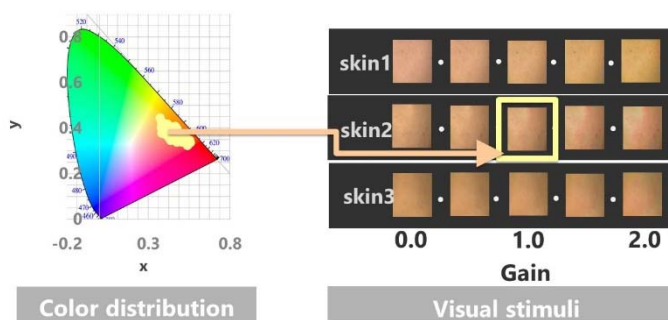
## Activities

1. Currently, the SG-CVP has 90 members from 16 countries.
2. We are planning to hold our next meeting at AIC2018.
3. We are hosting the SG homepage at the following site: <http://www.okajima-lab.ynu.ac.jp/CVPSG>
4. SG members published/presented some related papers in 2016. For example, the SG Chairman (Dr Katsunori Okajima) published with different co-authors: 'Motion perception under mesopic vision' in *Journal of Vision*; 'Chimpanzees can visually perceive differences in the freshness of foods' in *Scientific Reports*; and 'Eating with our eyes: From visual hunger to digital saturation' in *Brain and Cognition*.



Tuna can be changed to salmon using augmented reality (AR).

Also, he presented four papers at various conferences with different co-authors: 'Effects of Color Distribution on the Impression of Facial Skin', and 'Multimodal effects of color and aroma on predicted palatability of red milk beverages' in ECVP (European Conf on Visual Perception); 'Control of crossmodal effects of food appearance using a projective-AR system' in Sensometrics2016; and 'Contribution of ipRGC to the brightness perception' in APCV (Asia-Pacific Conf on Vision).



Skin stimuli with different colour distributions.

SG CHAIR: Dr Katsunori Okajima  
Dept of Env't and Information Sciences  
Yokohama National University  
79-7 Tokiwadai, Hodogaya, Yokohama  
240-8501 JAPAN  
[okajima@ynu.ac.jp](mailto:okajima@ynu.ac.jp)

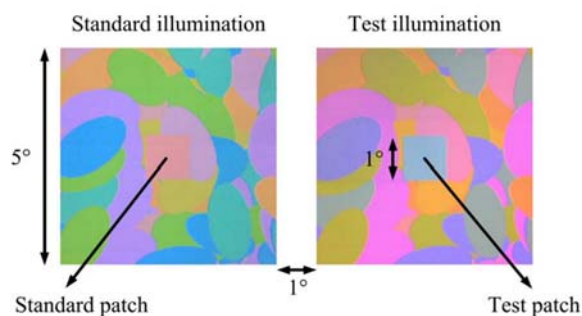


The SG Secretary (Dr Manuel Melgosa) finished his work as CIE TC1-55 Chair with the publication of CIE Technical Report entitled 'Recommended method for evaluating the performance of colour-difference formulae' (CIE 217:2016). He also co-authored: 'Using a standard grey scale for colour change in a multi-angle colour-assessment cabinet', Proc CIE 4th Expert Symposium on Colour and Visual Appearance (Prague); 'Accurate method for computing correlated color temperature', *Optics Express*; and 'Method to determine the degrees of consistency in experimental datasets of perceptual color differences', *JOSA A*.



'Guernica' by Pablo Picasso (1937)

In 'Accurate measurements of spectral reflectance in Picasso's Guernica painting', *Applied Spectroscopy*, by Javier Muñoz de Luna et al, the use of non-invasive spectral measurements is a part of the preventive conservation of artworks. A spectral measuring device was used with illumination specifically designed for a very large artwork (7.8m wide × 3.5m high). The system, controlled by a Cartesian robot, allowed spectral measurements in the range 400-780nm. A colour shift from the expected achromatic grey was demonstrated.

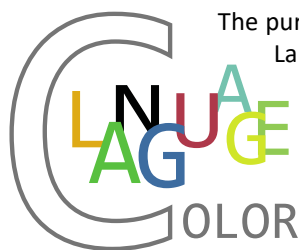


Standard pattern under D65 illumination (left) and test pattern under coloured illumination (right), presented haploscopically in each trial.

SG members published many other interesting papers. For example, Keizo Shinomori et al. 'Discrimination thresholds of normal and anomalous trichromats: Model of senescent changes in ocular media density on the Cambridge Colour Test' and 'Color constancy of color-deficient observers under illuminations defined by individual color discrimination ellipsoids' in *JOSA A*.

SG Secretary: Prof Manuel Melgosa  
Facultad de Ciencias  
Universidad de Granada  
E-18071 Granada  
SPAIN  
[mmelgosa@ugr.es](mailto:mmelgosa@ugr.es)





The purpose of this AIC Study Group on the Language of Colour (SG-LC) is to discuss and share information relating to studies on the (psycho)linguistics, semantics and semiotics of colour names and their place in cognitive (neuro)science. Key topics are colour cognition, colour naming, categorisation, colour memory, colour semantics and semiotics and cross-cultural differences. This study group was formed in 2010, and has 145 registered members from 45 countries. Our social networking platforms in Twitter (@aic\_lc) and Facebook (@languageofcolour) have currently 377 and 732 followers respectively. The study group did not hold a meeting in 2016 but you can find below some of the activities of our members.

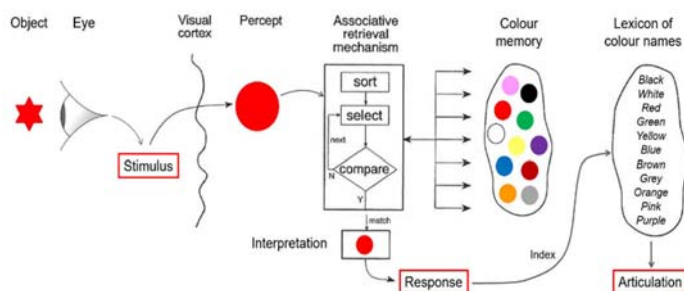


Members of SG-LC and of the PICS 2016 Organising Committee (left to right): Galina Paramei (Programme), Janet Best (Social), Dimitris Mylonas (Media) and Lindsay MacDonald (Chairman).

The fourth conference Progress in Colour Studies (PICS 2016) was held at University College London (UCL), 14-16 September, with 36 speakers and 30 poster authors, in the fields of colour perception, cognition, linguistics, design and architecture. Following the tradition of previous PICS conferences, at PICS2016, there was a strong representation of colour language research. Dr Carole Biggam (University of Glasgow, UK) spoke about historical semantics and translation of Old English colour terms. Dr Kimberly Jameson (University of California, Irvine, USA) presented a new interactive platform containing the exceptionally rich archive, now digitised, of the late Dr Robert MacLaury, who had collected colour naming data for dozens of languages and dialects throughout Mesoamerica. Prof Jan Koenderink (University of Leuven, Belgium) discussed the relationship of perceived colours to the spectrum. Finally, Prof Semir Zeki reviewed current developments in neural colour mechanisms.

The PICS2016 Book of Abstracts remains available (for limited period of time) on <http://pics2016.uk>. In addition, a peer-reviewed book, *Progress in Colour Studies: Perception, Cognition and Language*, including 25 chapters based on selected PICS conference papers, is being co-edited by Lindsay MacDonald, Carole Biggam and Galina Paramei, and will be published in 2018 by John Benjamins (Amsterdam).

SL-LC member Lindsay MacDonald gave a keynote talk entitled 'Colour Naming – Linking Vision and Speech' at the 3rd Colour Culture Science Conference in Krakow, Poland, in November, where he presented a cognitive model of colour naming.

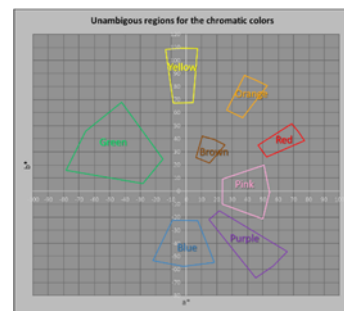


Model of mental processing of a colour from stimulus through perception and cognition to articulation as a colour name.

SG-LC Chairman Dimitris Mylonas designed a new colour naming and matching game 'Colours of Babel' as part of a successful crowd-funding project (112% of funding goal) to upgrade the online colour naming experiment (available at [www.colournaming.com](http://www.colournaming.com)) to run on all new mobile devices, minimise security threats and maintain its online presence. The new version of the experiment will be released in 2017.



To visualise colour name denotata within a chromaticity diagram, John Seymour, colour scientist and applied mathematician (Milwaukee, WI), has combined colour naming research from a number of sources to draw CIELAB boundaries for unambiguous regions of each of the eight chromatic basic colour terms (BCTs). More can be found online in his entertaining blog post at: <http://johnthemathtguy.blogspot.com/2016/12/unambiguous-regions-in-color-space-for.html>



SG CHAIR: Dimitris Mylonas  
Dept of Computer Science  
University College London  
66 Gower Street  
London WC1E 6BT  
UK  
[d.mylonas@ucl.ac.uk](mailto:d.mylonas@ucl.ac.uk)



SG CO-CHAIR: Prof Galina Paramei  
Department of Psychology  
Liverpool Hope University  
Liverpool L16 9JD  
UK  
[parameg@hope.ac.uk](mailto:parameg@hope.ac.uk)

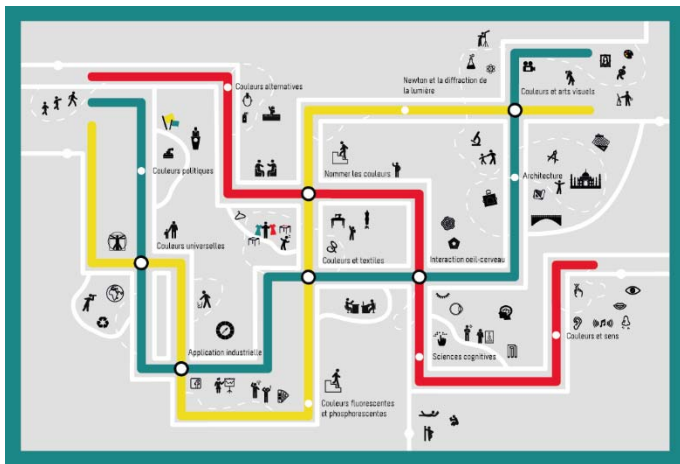






## Why a Museum of Colours?

Despite their omnipresence in our societies and cultures, and although they cause many reactions and emotions, no international multidisciplinary museum is dedicated to colours in their different aspects. This is the challenge that the Museum of Colours decided to take up. Since 2013, Natacha Le Duff and her team based in Berlin are developing both a concept and networks to make it happen. This is not an AIC Study Group, but it has many of their characteristics, above all a focus on colour.



*A formative sketch of the pathways in the Museum of Colours.*

## Our Concept

Combining artistic, scientific and sociological approaches to colours is a challenge within our museum's concept. We would like to apprehend this diversity thanks to three main pathways, which are to be connected by transition rooms. One will deal with the characteristics of colours thanks to the various theories helping humans to describe how they understand colours. Another pathway will address our perception of colours, not only the way they reach our brain through our eyes, but also how our perception is influenced by different factors. A third pathway will study cultural colours, since they convey values and symbols that deeply influence us.

This tripartite structure will enable the museum to foster interdisciplinarity, while taking advantage of a specific scenography. The combination of the documentary, the playful, the didactic and the sensorial aspects in each pathway will allow a full museum experience to the visitors. Our long-term goal is to create a fixed Museum of Colours gathering permanent and temporary exhibitions.

## Our Perspective

2016 was a busy year for the Museum of Colours. We attended different events, starting with the ICOM congress (Milano, July), affording the opportunity to present the Museum of Colours to a whole new audience composed of museum professionals. We also joined the AIC conference (Santiago de Chile, October). Regarding the development of the project in Berlin, our main goal was the setting up an exhibition about the Colours of Berlin.



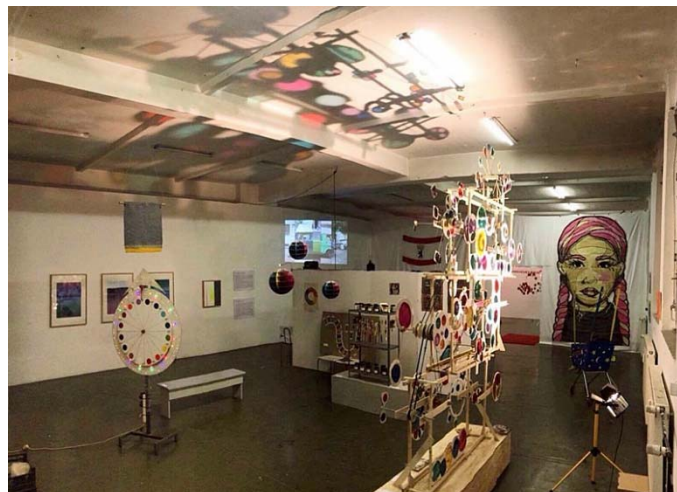
## The Cycle of Exhibitions

In 2017, the adventure will take form as we start a cycle of exhibitions in Flutgraben, an artists' house in the heart of Berlin. Each exhibition will follow a pattern made of three parts: (1) The Colours' Lab focuses on general questions about colours, underlining how colours are related to humans but also offering the opportunity to cross between sciences and arts and to explain various phenomena or mechanisms; (2) The Colours of Berlin shows the diversity of the presence and uses of colours in our urban landscape: natural, functional, symbolic, and artistic colours; (3) The Colour Room underlines the variety of symbols and cultural references associated to just one colour, suggesting the diversity contained in a single colour: its nuances, meanings, existences.



*Natacha Le Duff, creative lead*

The Pilot Exhibition in January welcomed around 400 visitors. The second exhibition will take place 17-25 June 2017. The Colours' Lab will be about the perception of colours: from the eye to the brain, including illusions and synesthetic approaches. Perception is also influenced by the cultural background, which Berliners often carry in themselves, adding value to our cosmopolitan metropolis rich from its diverse inspirations. From cobalt blue to Klein blue, the monochromatic room will lead visitors to the discovery of numerous shades of blue and of their uses and significations.



*Pilot Exhibition of the Museum of Colours which took place in January 2017 at Flutgraben in Berlin.*

In November 2017, the Colours' Lab will observe the conception of various coloring products ranging from coloured pencils to lipsticks, through paint and dyes. The Colours of Berlin will set its focus on the natural colours, which are defining a great part of the city's features, as half of the city is made up of green spaces and water. The Monochromatic Room will be green, in order to complete a Red – Green – Blue cycle, setting primary bases to further explorations.

Three other exhibitions per year are planned in 2018 and 2019. Stay tuned! Subscribe to our newsletter! Follow us on social media! The Museum of Colours! [www.museum-of-colours.org](http://www.museum-of-colours.org)



International Commission on Illumination  
Commission Internationale de l'Éclairage  
Internationale Beleuchtungskommission

The Terms of Reference of CIE Division 1 are: "To study visual responses to light and to establish standards of response functions, models and procedures of specification relevant to photometry, colorimetry, colour rendering, visual performance and visual assessment of light and lighting." There are currently 16 Technical Committees (6 Vision + 10 Colour), 4 Joint Technical Committees, 10 Reporterships and 10 Liaisons, all active in Division 1. An Activity Report giving details of the membership and current activities of the various Technical Committees can be downloaded from <http://div1.cie.co.at>

CIE Division 1 held a successful meeting at Hotel Don Giovanni, Prague, Czech Republic on 9 September 2016 as part of the 4th CIE Expert Symposium on Colour and Visual Appearance. During the meeting, Dr Youngshin Kwak, the Division Director, introduced the following research strategies for the Division:

- Colour quality of light sources re perception and preference
- Application of new CIE 2006 colorimetry
- Visual appearance: perception, measurement and metrics
- Comprehensive colour appearance model based on CIECAM02
- Visual impairment



*Delegates at the CIE Division 1 Meeting in Prague, Czech Republic.*

Two technical committees were close to finalising drafts of technical reports, including:

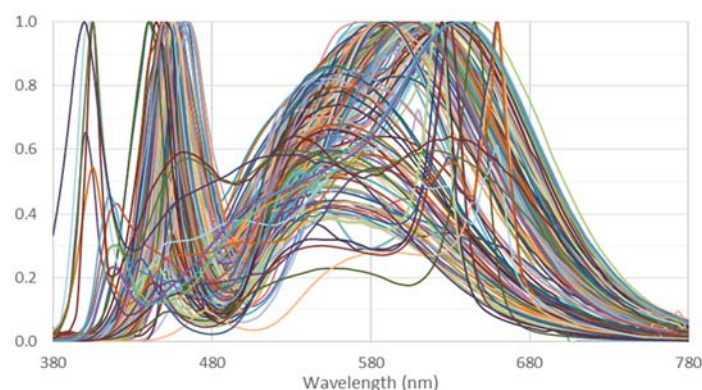
- TC1-90 'Colour fidelity index' chaired by Dr Hirohisa Yaguchi (JP). Authors participating in the writing of the draft are: A David (US), G Heidel (DE), W Jordan (DE), S Jost-Boissard (FR), MR Luo (GB), Y Mizokami (JP), Y Ohno (US), P Pardo (ES), K Richter (DE), K Smet (BE), K Teunissen (NL), M Wei (US), L Whitehead (CA), H Yaguchi (JP) and T Yano (JP).
- TC1-91 'Methods for evaluating the colour quality of white-light sources' chaired by Dr Yandan Lin (CN). The draft includes the indices: CQS, FCI, MCRI, PS, IES Rg, relative gamut area index (Ga), colour rendering vectors and colour saturation icon.

One reportership was close to finalising the intended tasks: R1-62 'Typical LED spectra' by Dr Sophie Jost-Boissard (FR).



*(left) Dr Hirohisa Yaguchi, TC1-90; (right) Dr Yandan Lin, TC1-91.*

Clustering of the LED spectra involved separating the different technologies of InGan blue (around 450nm) + phosphor (BLED); InGan blue (around 450nm) + phosphor + red InGaAlP (BLED+RED); and InGan violet or purple (around 400nm) + RGB phosphor (VLED), using Agglomerative Hierarchical Clustering (Pearson correlation coefficient, Complete linkage) method.



*850 spectral power distributions of LED spectra collected by R1-62.*

#### Work Items Closed

Two technical committees were closed in Prague: TC1-36 'Fundamental chromaticity diagram', chaired by Dr Françoise Viénot (FR), and TC1-55 'Uniform colour space for industrial colour difference evaluation', chaired by Dr Manuel Melgosa (ES). Reports from Division 1 during the past year include:

- CIE 170-2:2015 Fundamental Chromaticity Diagram with Physiological Axes – Part 2: Spectral Luminous Efficiency Functions and Chromaticity Diagrams (30 November).
- CIE 217:2016 Recommended Method for Evaluating the Performance of Colour-Difference Formulae (17 February).
- CIE TN 006:2016 Visual Aspects of Time-Modulated Lighting Systems – Definitions and Measurement Models (31 August).

#### New Work Items

One new reportership started after the Division meeting in Prague: R1-67 'Revisiting correlated colour temperature' by Dr Youngshin Kwak. The aim is to review the literature related to perception of the colour of white light sources with a goal to investigate the concept of correlated colour temperature.

**Next Meeting** The next meeting of CIE Division 1 will be held as part of the CIE 2017 Midterm Meeting in Jeju, South Korea, 20-28 October 2017, in the week following the AIC Congress.

– Dr Li-Chen Ou, Secretary of CIE Division 1



# AIC 2017 – JEJU ISLAND, KOREA

16 – 20 October 2017

The 13th Congress of AIC will be held in Jeju Island from 16-20 October, 2017. A total of 544 abstracts have been submitted from 42 countries under the theme of 'Being Color with Health.' We are expecting academic presentations on various fields related to color, such as health, environment, design, art, psychology, education, culture, and applications. In addition, there will be 12 invited lectures representing each field.

Keynote speakers will be: Prof Su-ro Hwang (Korea Royal Silk Flower Museum) 'Traditional Korean Paintings and Korean Traditional Colors' and Prof Roy Berns (Rochester Institute of Technology, USA) 'Teaching Color Science to Visual Artists Using Imaging Techniques'. Prof Hwang has been nominated as a Korea National Important Intangible Cultural Heritage (No. 124) for her service to restore and reproduce the ritual and grandeur art of the Josun Dynasty's Culture.

To celebrate the 50th anniversary of the AIC, we are planning two kinds of special exhibitions during the congress. 'Color and Culture' will provide an opportunity for the 28 AIC member countries to bring their vision, concept, and ideas in color and culture. 'Memory Photo Exhibition' will post a history of AIC showing images, photos, thoughts, and impressions, and so on.

Moreover, various programs are to be prepared including the social activities, folklore exhibition which shows Korean traditional colors and culture, Korean traditional dance performances, as well as Korean court banquet performances.



## Venue and Accommodation

ICC JEJU is located in the Jungmun Tourist Complex, 50 minutes' drive from JEJU international airport, with the cobalt-blue Pacific Ocean stretching away to the south and towering Mount Hallasan in the north. It provides world-class facilities and equipment for any kind of international conference. It is also famous for recreation and shopping with various natural landscapes, museums and duty-free shops. ICC JEJU has proven capability with the organization of more than 1,500 meetings since its opening in 2003. There are about 1,440 hotels and 1,247 pensions (apartment-style condominium) available within 10 km radius. The luxurious ICC Hotel and Resort, which opened in 2014, is connected to ICC JEJU via an arcade, and will offer a special rate for AIC 2017 (~30-40% discount).

## Important Dates

- April 2017 Notification of Oral/Poster Presentation
- June 2017 Submission Deadline Final Paper Proceedings
- July 2017 Early Registration ends (via online)
- August 2017 Late Registration ends (via online)



## Banquet

A banquet will be provided at an outdoor garden located above a shore cliff. Visitors can relish a high-end hotel meal while appreciating the surroundings and endless blue sea.



## Social Program

A cocktail party will be held at Jeju Stone Park where visitors can view the formation of Jeju-do, Jeju residents' traditional life phase, and a variety of stone artworks. Also provided will be the "tea time at o'sulloc" having a vast green tea farm.



## Performing Arts

Performances at the Korea National Center for Korean Traditional Performing Arts and dance performances by the Jeju Provincial Dance Company will be provided.



## Special Exhibitions

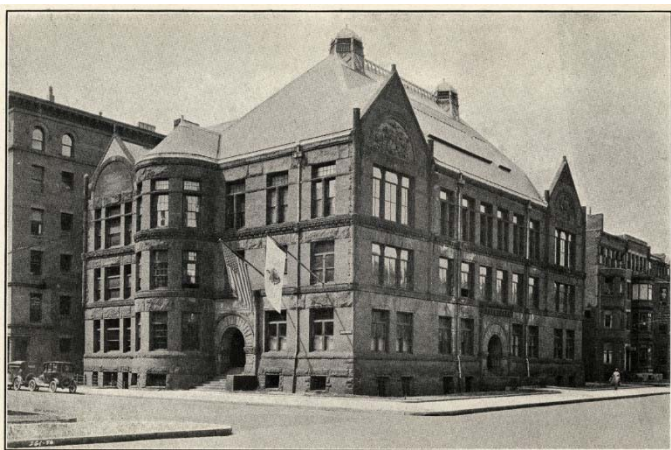
To celebrate the 50th Anniversary of AIC, two special exhibitions are to be held: 'Color & Culture' and 'Memory Photo'. We are expecting much participation in both events from all AIC member countries. In addition, an exhibition of folk paintings will be held to show Korean traditional colors and culture.

More updated information is available at [www.aic2017.org](http://www.aic2017.org)



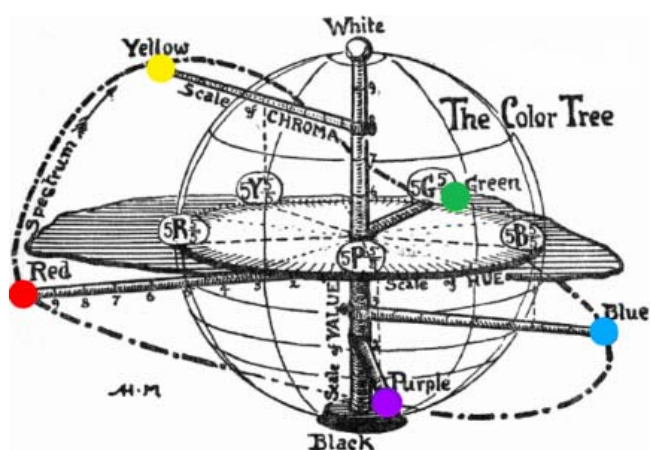
11 – 15 June 2018

The year 2018 will mark the 100-year anniversary of the passing of Albert H Munsell (28 June 1918) as well as the 75th anniversary of the Munsell Renotation. The ISCC and AIC are excited to announce a once-in-a-lifetime event to celebrate this milestone. The 2018 Munsell Centennial Symposium will take place from 11-15 June at the Massachusetts College of Art and Design (formerly known as Massachusetts Normal Art School when Munsell graduated and taught there).



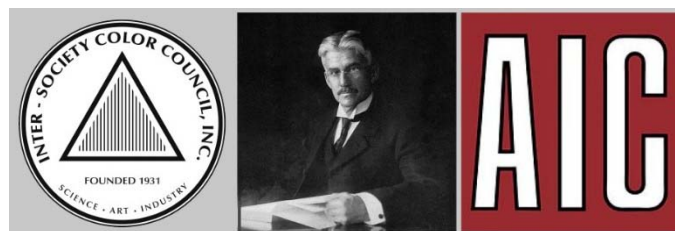
Massachusetts Normal Art School, from 1923-24 Catalog (flickr)

The theme of the event is 'Munsell's Legacy: Inspiring 21st Century Color Concepts'. This celebration will honor Albert Munsell's legacy by centering presentations around the three vertices of the ISCC logo: color in science, color in art and color in industry. Education, represented by the inside of the ISCC triangle, will be emphasized as it brings together color concepts in science, art, and industry.

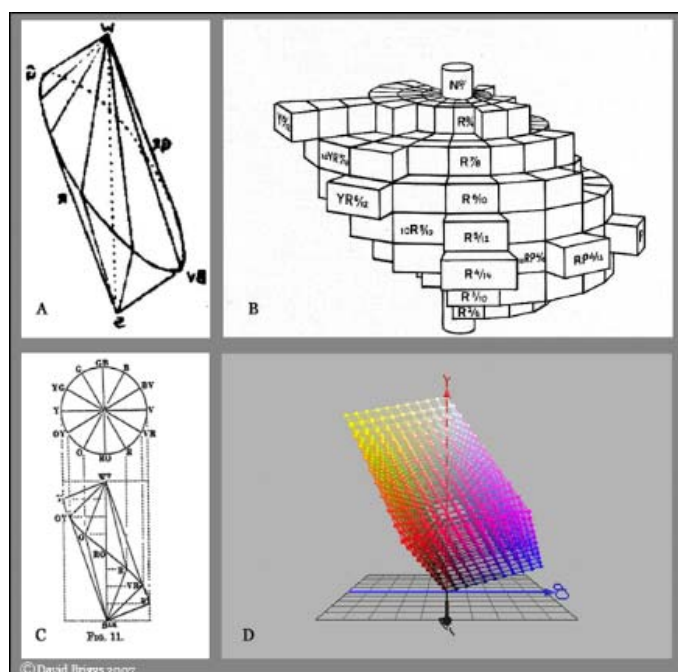


The Color Tree from 'A Color Notation' (1905) with Munsell's five hues

By designing a simple, systematic way of defining color, Albert Munsell built a strong bridge between art and science. The Munsell System has formed the basis for new scientific color models and has influenced color research in countless studies. It is the standard for perceptual uniformity, and is invariably used as the basis for assessing predictions by models of colour appearance. Over the past 100 years, Munsell's color order system with its H,V,C dimensions have been used around the world to teach color and communicate color specifications.



Each portion (science, art and industry) of the Munsell Centennial Symposium will begin with a Historical section outlining Munsell's contributions from the late 1880's until his death. That will lead into an Evolution section that will feature the milestones and significant events that have developed from Munsell's death up until the 21st century. Then there will be a State-of-the-Art section that will describe where color concepts are in 2018. Finally, each section will end with some talks on what the Future might hold for color in science, art and industry in the years beyond 2018.



Dimensions of Color: A. Kirschman (1896); B. Nickerson Diagram of Munsell (1942); C. Pope (1922); D. YCbCr by David Briggs.

This 5 day Munsell Centennial celebration will be an ISCC Williamsburg-style event. Thus, it will feature a single track of in-depth presentations with thought-provoking discussion sessions. Speakers will include: Berit Bergstrom, Roy Berns, David Briggs, Osvaldo DaPos, Mark Fairchild, Susan Farnand, Paul Green-Armytage, Leslie Harrington, Tom Lianza, Margaret Livingstone, Wendy Luedtke, Roy Osborne, Graydon Parrish, Danny Rich, Renzo Shamey, Lois Swirnof, Greg Wallace, Michael Webster, Don Williams and Dave Wyble. We hope to promote exchange of ideas among scientists, artists, and industrialists from around the world. So please mark your calendars for 11-15 June, 2018! This one-time special event will be a moment to reflect on the past century of progress in color, to look at where we are going, and to evaluate whether there are more fruitful directions we haven't yet pursued.

For more information, please see: <https://munsell2018.org>



# AIC 2018 – LISBON, PORTUGAL

26 – 28 September 2018

The Portuguese Colour Association (APCor) is pleased to present AIC Lisboa 2018, the AIC 2018 Interim Meeting that will take place in Lisbon, Portugal.



Lisbon, near the mouth of the River Tagus, is the capital of Portugal and the westernmost capital city in Europe and the only one along the Atlantic coast. Also, it is one of the oldest cities in the world, and the eldest in Western Europe, predating other European capitals such as London, Paris and Rome by centuries. Lisbon enjoys a Subtropical-Mediterranean climate with mild winters and warm-to-hot summers. The atmosphere and proximity of the river provide the city with a high-quality light that enhances the colour of its buildings.

## CONFERENCE LOCATION

The Conference will take place at the Calouste Gulbenkian Foundation, created by will of the philanthropist and art collector Calouste Sarkis Gulbenkian, with the aim of fomenting knowledge and ameliorating people's quality of life through the arts, beneficency, science and education.



The site has a modernist complex of buildings which includes the Foundation Headquarters, the Gulbenkian Museum and the surrounding garden. This complex won the Valmor Prize for Architecture in 1975 and was established as a National Monument in 2010, becoming the first contemporary work to be considered a patrimony in Portugal. On display in the Museum is the collection amassed by Calouste Gulbenkian, considered to be one of the most important private collections of international art, spanning 5,000 years of history.

## CONFERENCE THEME

The aim of this conference is to bring together an interdisciplinary group of specialists who use colour both in scientific research and professionally, addressing a key issue in the relationship of colour to society: human comfort.



**AIC LISBOA 2018**  
colour & human comfort

## DISCOVERING LISBON

Conference participants and accompanying persons may enjoy the rich variety of Lisbon architecture and monuments, as well as visiting several museums and gardens. For those who don't enjoy walking around, there will be numerous city tours, including river tours which allow city sightseeing from the river.



*Four views of Lisbon*

## OPTIONAL EXCURSIONS

One of the optional excursions, that will take all day, is the visit to Sintra, a town in the Lisbon Region, known for its 19th-century Romantic environment, which has resulted in its classification as a UNESCO World Heritage Site. This town is a symbol of Portuguese culture that has been celebrated by many writers and poets, including Eça de Queirós, Fernando Pessoa and Lord Byron. Another possibility is a midday visit to the Lisbon tiles museum, including a tour around old Lisbon, where there are located a great variety of ancient tiles.

More information may be found at [www.aic2018.org](http://www.aic2018.org)



*Optional excursions: Sintra and the Tiles Museum*



8 – 10 October 2019

In the spring of 2019, in Argentina, the Midterm Meeting AIC2019 will be held with the theme of Color and Landscape. The headquarters will be in the Autonomous City of Buenos Aires, and the Grupo Argentino del Color (GAC) is responsible for the organization. We also hosted the previous two editions of the conference held in Argentina: AIC 89, 6th Congress, Buenos Aires, 13-17 March 1989; and AIC 2010, Interim Meeting, Mar del Plata, 12-15 October 2010.

In the 2019 conference, and as part of the history that has been built together with the AIC, we will celebrate 30 years since the realization of that first event held in Argentina.



*Isologotype design: DG Lucía Mailló Puente*

The theme of the Midterm Meeting will be 'Color and Landscape', covering its looks, visions, constructions and configurations. The landscape, which contemplates a double existence, both that of the observer and what is observed, can be thought of as natural and social configurations; as a product of the actions and interactions of nature and humans; perception by a population, by a social group or individually; of objective and subjective character; as social and cultural construction, visual reality, mental image; transformation from the idea of terrestrial surface to that of identity in a society.

## Color and Landscape

... described, written, perceived, drawn, painted, vivid, remembered, walked, traveled, thought-out, colored, represented, prefigured, created, designed, inhabited, symbolized, transformed, repurposed, exploited, urban, rural, objective, subjective, inside, outside ...

... from the literal, littoral, physical, pictorial, cultural, patrimonial, archaeologic, anthropologic, psychologic, historic, philosophic, aesthetic, sociologic, geographic, topographic, epistemologic, among other disciplines ...

The landscape of Buenos Aires is studded with jacarandá trees. In spring they show off their distinctive deep purple flowers. Julio Carlos Thays (1849-1934) imported them and as Director of Parks and Walkways he designed several of the city's most splendid parks and avenues. Plaza San Martín and the streets near the American embassy host some of the best examples of the jacarandá. The trees, which are originally from the North West region of the country, are in their prime in November. When the flowers have died, they cascade to the floor in their multitudes and give the appearance of purple snow.



Among the jacarandá, tango, obelisk, Plaza de Mayo and cultural diversity, the Autonomous City of Buenos Aires is one of the main headquarters of international congresses of South America with excellent hotel infrastructure. In turn, with wonderful landscapes, Argentina is one of the tourist destinations most chosen for its great variety of cultural, geographic, climatic, gastronomic, among other proposals.



*Jacaranda and obelisco in Buenos Aires*

The Argentine Color Group (Grupo Argentino del Color, GAC) was founded in 1980, and brings together institutions and individuals who share an interest in the study of color science and color applications. The goals of the Group are to encourage research on problems related to color, to promote the exchange of information with similar associations abroad, to manage a documentation center, and to integrate the different fields from which the study of color can be addressed: science, technology, design and education. There is also a strong interest in the Group from the artistic community in the diffusion of their works.

For more información:  
<http://aic2019.org>







**ASSOCIATION INTERNATIONALE DE LA COULEUR  
INTERNATIONALE VEREINIGUNG FÜR DIE FARBE  
INTERNATIONAL COLOUR ASSOCIATION**

**[www.aic-colour.org](http://www.aic-colour.org)**