

**Color Culture and Science**  
**Cultura e Scienza del Colore**



**CCSJ**  
Volume 12  
Number 2  
2020

ISSN  
2384-9568

**COLOR CULTURE AND SCIENCE Journal**  
**CULTURA E SCIENZA DEL COLORE**  
**CCSJ**

jcolore.gruppodelcolore.it

ISSN 2384-9568

DOI: 10.23738/CCSJ.00

ANCE E227716

ROAD: the Directory of Open Access scholarly Resources  
Registrazione presso il Tribunale di Milano n. 233: 24/06/2014

Volume 12, number 2, July 2020

DOI 10.23738/CCSJ.120200

**PUBLISHER**

Gruppo del Colore – Associazione Italiana Colore

www.gruppodelcolore.org

Registered office: Piazza Carlo Caneva, 4 - 20154 Milan (IT)

**PEER REVIEW PROCESS**

All articles submitted to the "Color Culture and Science Journal" are peer-reviewed according to the following procedure:

*First review level*

The Associate Editors evaluate each article in order to determine if the topic and content are of interest to the journal. Once the article passes the initial review, the Associate Editors select several referees from the Editorial Board based on their expertise in a particular subject area or topic.

*Second review level*

Each article is reviewed by two or three referees and submitted to a double-blind peer review process where both the authors and the reviewers are kept anonymous. Referees are asked to evaluate the manuscript based on the following criteria:

- Originality
- Relevance to journal's aims and scope
- Technical merit and/or validity
- Soundness of methodology
- Completeness of the reported work
- Conclusions supported by the data
- Correct acknowledgment of the work of others through reference
- Effectiveness of the manuscript (organization and writing)
- Clarity of tables, graphs, and illustrations
- Importance to color researchers
- Relevance to color practices

If the article is accepted with major revisions by the referees, the author(s) are asked to improve the article according to the suggestions of the referees. The revised article will then be submitted to a further review.

After collecting the referees' reports, the Associate Editors make a recommendation on the acceptability of the article to the Editor-in-Chief.

**EDITOR-IN-CHIEF**

Maurizio Rossi (Politecnico di Milano, IT)

**DEPUTY EDITOR**

Alessandro Rizzi (Università degli Studi di Milano, IT)

**ASSOCIATE EDITORS**

José Luis Caivano (Universidad de Buenos Aires, AR)

Vien Cheung (University of Leeds, UK)

Marco Gaiani (Alma Mater Studiorum Università di Bologna, IT)

Robert Hirschler (Serviço Nacional de Aprendizagem Industrial, BR)

Agata Kwiatkowska-Lubańska (Academy of Fine Arts, Kraków, PL)

Marcello Picollo (IFAC-CNR, IT)

Verena M. Schindler (Chair AIC S.G. Environmental Colour Design, CH)

Renzo Shamey (NC State University, USA)

Francesca Valan (Studio Valan, IT)

**EDITORIAL BOARD MEMBERS**

The complete and updated list of the Editorial Board Members involved in the peer review process is available on the CCSJ website: <http://colore.gruppodelcolore.it/ojs/index.php/CCSJ/about/editorialTeam>

**TOPICS**

The CCSJ accept papers on a wide range of topics on color, including and not limited to the following:

1. Color and Measurement/Instrumentation. Colorimetry, photometry and color atlas: method, theory and instrumentation; quality control and food coloring, dyes, organic and sustainable color.
2. Color and Digital. Reproduction, management, digital color correction, image processing, graphics, photography, film and video production, printmaking and 3D print, artificial vision, virtual reality, multispectral imaging, data visualization. Light field imaging. Multi-sensor fusion. Color localization, recognition, HDR imaging, ADAS systems.
3. Color and Lighting. Metamerism, color rendering, adaptation, color constancy, appearance, illusions, color memory and perception, color in extra-atmospheric environments, lighting design, lighting technologies, visual comfort.
4. Color and Physiology. Mechanisms of vision in their experimental and theoretical aspects, color vision and color appearance, deficiencies, abnormalities, clinical and biological aspects, synesthesia, health, well-being.
5. Color and Psychology. Phenomenology of colors, color harmonies, color & form, perceptive, emotional, aesthetic and diagnostic aspects.
6. Color and Production. Food and beverages, agriculture, textiles, plastic materials, ceramics, paints, gemology, color in the food industry.
7. Color and Restoration. Archaeometry, painting materials, diagnostics and techniques of conservation, restoration and enhancement of cultural heritage.
8. Color and Environment. Representation and drawing, urban planning, project of color, architecture, interior design, landscapes & horticulture, color and architectural syntax, territorial identities, biodiversity.
9. Color and Design. Furniture, CMF design, fashion, textiles, textures, cosmetics, food design, museography.
10. Color and Culture. Arts and crafts, history, philosophy, aesthetics, ethno-anthropology, graffiti, geology, sociology, lexicology, semantics, anthropology of vision, food culture and heritage, color naming.
11. Color and Education. Pedagogy, didactics of color, aesthetic education, artistic education.
12. Color and Communication/Marketing. Graphics, communication, packaging, lettering, exposure, advertising.

# Table of Contents

Editorial	5
<i>Maurizio Rossi</i>	
Color segmentation and neural networks for automatic graphic relief of the state of conservation of artworks	7
<i>Annamaria Amura, Anna Tonazzini, Emanuele Salerno, Stefano Pagnotta, Vincenzo Palleschi</i>	
DOI: 10.23738/CCSJ.120201	
Περὶ χρωμάτων (Peri chrōmatōn): Colour formation and investigation method.	16
<i>Maria Fernanda Ferrini</i>	
DOI: 10.23738/CCSJ.120202	
Graphical interpolation of Munsell data	21
<i>Pietro Paglierani, Simone Liberini, Alessandro Rizzi, Francesca Valan</i>	
DOI: 10.23738/CCSJ.120203	
Francesco Algarotti explains Newton's prism experiment to Ladies	31
<i>Paola Magnaghi-Delfino, Giampiero Mele, Tullia Norando</i>	
DOI: 10.23738/CCSJ.120204	
Light and Colour at the Theatre in Paolo Bini's Works for Francesco De Gregori	37
<i>Maria Letizia Paiato</i>	
DOI: 10.23738/CCSJ.120205	
Floral decorations and colours in Naples. The case of Villa Pappone in Posillipo	44
<i>Maria Martone, Alessandra Marina Giugliano</i>	
DOI: 10.23738/CCSJ.120206	
Food waste: potential bioresource for the colour of polymers	53
<i>Annalisa Di Roma, Alessandra Scarcelli</i>	
DOI: 10.23738/CCSJ.120207	

The restoration of the Basilica Minore di Maria SS. Incaldana in Mondragone (northern Campania): the role of color. 62

*Francesco Miraglia*

DOI: 10.23738/CCSJ.120208

Archaeological digital anastylosis. From survey to lighting analysis 67

*Lia Maria Papa, Laura Bellia, Pierpaolo D'Agostino, Gennaro Spada, Giuseppe Antuono*

DOI: 10.23738/CCSJ.120209

Transmitted light imaging in VIS and IR, in the study of paintings: a brief report on the behavior of the main historical pigments 79

*Miquel Herrero-Cortell, Paola Artoni, Marta Raich*

DOI: 10.23738/CCSJ.110210

### **Coloumn**

REVIEW: L'anima e la magia dei COLORI. Uso consapevole dei colori nella vita 89

*Renata Pompas*

# Editorial

Dear Readers, with vol 12 n. 2 we close the seventh year of CCSJ. Since 2019 the CCSJ website is available via the Open Journal System. This allows a better indexing of the published articles and will guarantee the compatibility with Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH). In 2020, despite the severe Covid19 crisis, we continued with the publishing activities and we refined our archiving policy to guarantee long-term access of our issues, making agreements with the Biblioteca Nazionale Centrale di Firenze. Since 2014 we have published 12 volumes for a total of 14 issues. Since 2015 we have applied the double blind peer review and since 2016 we have applied the DOI system. It is also useful to recall the importance of the concept of “diamond open access” under which our journal is published: the journal is completely free for both readers and authors. This is possible thanks to the voluntary support of the members of the "Associazione Italiana Colore" who work in the editorial committee, thanks to the associate editors, thanks to the deputy editor Alessandro Rizzi and the President of Associazione Italiana Colore Marcello Picollo. A special thanks goes to Chiara Storti of the Biblioteca Nazionale Centrale di Firenze (BNCF) the main official library of Italy, to Filippo Cherubini of IFAC-CNR who manages the Open Journal System, to Veronica Marchiafava, the secretary of our association, for the management of DOI database and to Andrea Sinicalco, the vice-president of our association, for the graphic support. Many of these people are also involved in the organizing committee of the important meeting in 2021: the AIC 14th Congress that will be held for the first time in Italy organized by the Associazione Italiana Colore ([www.aic2021.org](http://www.aic2021.org)).

The peculiarity of our journal, also written in the statute of our publisher, the Associazione Italiana Colore, is to collect papers on color and related areas in a multidisciplinary way. This basically means that in our peer review process we could have papers ranging from the science of colorimetry to the culture of color in the history of art. Moreover, these papers have very different styles and ways of writing, as diverse is the group of the peer reviewers that constitutes our editorial board. The CCSJ accept papers on a wide range of topics on color, including and not limited to the following:

1. Color and Measurement/Instrumentation. Colorimetry, photometry and color atlas: method, theory and instrumentation; quality control and food coloring, dyes, organic and sustainable color.
2. Color and Digital. Reproduction, management, digital color correction, image processing, graphics, photography, film and video production, printmaking and 3D print, artificial vision, virtual reality, multispectral imaging, data visualization. Light field imaging. Multi-sensor fusion. Color localization, recognition, HDR imaging, ADAS systems.
3. Color and Lighting. Metamerism, color rendering, adaptation, color constancy, appearance, illusions, color memory and perception, color in extra-atmospheric environments, lighting design, lighting technologies, visual comfort.
4. Color and Physiology. Mechanisms of vision in their experimental and theoretical aspects, color vision and color appearance, deficiencies, abnormalities, clinical and biological aspects, synesthesia, health, well-being.

5. Color and Psychology. Phenomenology of colors, color harmonies, color & form, perceptive, emotional, aesthetic and diagnostic aspects.
6. Color and Production. Food and beverages, agriculture, textiles, plastic materials, ceramics, paints, gemology, color in the food industry.
7. Color and Restoration. Archaeometry, painting materials, diagnostics and techniques of conservation, restoration and enhancement of cultural heritage.
8. Color and Environment. Representation and drawing, urban planning, project of color, architecture, interior design, landscapes & horticulture, color and architectural syntax, territorial identities, biodiversity.
9. Color and Design. Furniture, CMF design, fashion, textiles, textures, cosmetics, food design, museography.
10. Color and Culture. Arts and crafts, history, philosophy, aesthetics, ethno-anthropology, graffiti, geology, sociology, lexicology, semantics, anthropology of vision, food culture and heritage, color naming.
11. Color and Education. Pedagogy, didactics of color, aesthetic education, artistic education.
12. Color and Communication/Marketing. Graphics, communication, packaging, lettering, exposure, advertising.

In an era in which sectoral super-specialisation has reached extreme limits, having a multidisciplinary journal, on a multidisciplinary theme such as color, favors the development of problem solving skills that are based on the psychological methodologies of lateral thinking.

*July, 2020*  
*The Editor-in-Chief*  
*Maurizio Rossi*  
*Full professor of Lighting Design and Design Methods*  
*Politecnico di Milano*