# JOURNAL OF COSMETIC SCIENCE

The Official Journal of the Society of Cosmetic Chemists



# Croda: Positively



With a long history of reporting, sustainability is an **integral** part of our Business, informing and guiding our development strategies. With around 60-70% of our raw materials coming from renewable sources, the **Ingredient Integrity™** of our products is central to our existing and future sustainable innovations. The **intimacy** of our customer relationship helps us to understand and meet both their needs and the demands of their consumers.

We can support you in meeting your sustainability goals and help you create new opportunities to have a sustainable **impact** on our world. Contact us to discuss how today.

Visit us at www.crodapersonalcare.com

Europe, Middle East & Africa pc-europe@croda.com North America marketing-usa@croda.com Latin America marketinglatam@croda.com Asia Pacific pc-asia@croda.com in Croda Personal Care

croda\_personal\_care

CrodaPC @CrodaPC

#### **Key Highlights:**

- Around 60 70% of our raw materials are from renewable sources, far above the average of our peers
- 21.1% Energy from non-fossil fuel sources
- 14 RSPO supply chain certified global manufacturing sites
- Committed to becoming Climate, Land and People Positive by 2030

Purchased to fine extrusive ase of notirst notast (unknown)
From: SCC Media Library & Resource Center (library.scconline.org)

**CRODA** 



### Journal of Cosmetic Science

The Official Journal of the Society of Cosmetic Chemists

**Editor-in-Chief:** Paolo Giacomoni, PhD, Consultant to the Skin Care Industry

Senior Associate Editor: Trefor Evans, PhD, TRI-Princeton | Hair Expert

Associate Technical Editor: K.P. Ananthapadmanabhan, PhD, College of Pharmacy,

University of Cincinnati | Skin Expert



**President:** Liz Streland, Croda, Inc.

**Vice President:** Michelle Hines, PhD, Mary Kay, Inc.

**Vice President-Elect:** Mark Chandler, ACT Solutions Corporation

Yulia Park, PhD, Amway Corporation **Secretary:** 

Treasurer: Karen Chun, Symrise, Inc.

**Executive Director/CEO:** Erica L. O'Grady, CAE, Society of Cosmetic Chemists HQ



© Copyright 2021 by the Society of Cosmetic Chemists. Permission is granted to readers and nonprofit libraries acting for them for fair use of the material contained in this Journal. Permission is further granted to quote from this Journal in scientific works with the customary acknowledgment of the source. Consent from EACH OF THE ORIGINAL AUTHORS along with notification to the Society of Cosmetic Chemists is required to reprint a figure, table or other excerpt. The republication, systematic or multiple reproduction of any material in this Journal (including abstracts) is permitted under written license from the Society of Cosmetic Chemists. The Society of Cosmetic Chemists may also require that permission must be obtained from EACH OF THE AUTHORS. Address inquiries to the Editor.

SUBSCRIPTION: JOURNAL OF COSMETIC SCIENCE, the Official Journal of the Society of Cosmetic Chemists, is published six times per year with January/February, March/April, May/June, July/August, September/October, November/December issues. Yearly subscription price is \$250.00 for 1-10 users, \$350 for 11-50 users, \$490 for 51-100 users and \$686 for 100+ users. JOURNAL OF COSMETIC SCIENCE, the Official Journal of the Society of Cosmetic Chemists, is a registered trademark of the Society of Cosmetic Chemists

POSTMASTER, MEMBERS AND SUBSCRIBERS: Send address changes to The Society of Cosmetic Chemists, 14 Wall Street, Suite 1620, New York,

**RESPONSIBILITY FOR STATEMENTS PUBLISHED:** The Society of Cosmetic

Purchasettefor the exclusive asteophori Pse frolast (tarknown)

responsibility for statements or opinions advanced by contributors to this

Missing issues will not be supplied if claims are received more than 60 days after the date of the issue, or if loss was due to failure to give notice of change of address. The JCS cannot accept responsibility for foreign delivery when its records indicate shipment was made.

EDITORS AND PUBLISHERS: Abstracts or digests of articles not exceeding 400 words may be published, duly credited to the author and JOURNAL OF COSMETIC SCIENCE, the Official Journal of the Society of Cosmetic Chemists. AUTHORS: When using illustrations or quotations taken from copyrighted publications, authors must get written permission from the copyright holder to reproduce the same.

PAGE CHANGES: The authors of a manuscript will no longer be assessed a page or color photograph charge for printed manuscripts. Any material set into type but ordered deleted from the publication at the page proof stage must also be paid for by the author. These changes will be invoiced to the senior author at the time of publication.

MANUSCRIPTS: Manuscripts should be prepared in accordance with "Information for Authors," which can be found at the end of this issue.

Periodicals postage paid at New York, New York and additional mailing offices.

Publication office: 14 Wall Street, Suite 1620, New York, NY 10005 (212) 668-1500, Fax: (212) 668-1504. Email: journal@scconline.org

From: SCC Media Library & Resource Center (library.scconline.org)

# SCC EDUCATION WEEK

Cosmetic Product Development: Lab to Launch

# June 21-25, 2021







The SCC presents a series of online CEP courses concentrating on 4 key areas in the development of a cosmetic product: raw materials, formulating for the delivery of active ingredients, prototype development and testing, and scale up and manufacturing.



**GAIN ACCESS** 

After the event, we're providing 30 days of FREE On-Demand access to your course selection(s) to view and/or review at your convenience. Replays of recorded presentations are available until July 26, 2021.

### **COURSE OFFERINGS:**

- Cosmetic Raw Materials
- Cosmetic Product Prototypes: Development and Testing
- Formulating for the Delivery of Cosmetic Actives
- Scale Up and Processing Cosmetic Formulations

Plus, a bonus seminar on Cosmetic Claim Substantiation

www.scconline.org/education-week

Purchased for the exclusive use of nofirst nolast (unknown) From: SCC Media Library & Resource Center (library.scconline.org)



### Journal of Cosmetic Science

The Official Journal of the Society of Cosmetic Chemists

Volume 72 No. 3 | May/June 2021

## ORIGINAL ARTICLES

# **Insights in Human Hair Curvature by Proteome Analysis of Two Distinct Hair Shapes**

Evelyne Maes, Fraser Bell, Charles Hefer, Ancy Thomas, Duane Harland, Alasdair Noble, Jeffrey Plowman, Stefan Clerens, Anita Grosvenor | pp. 249

#### Role of Redox Metals in Color Formation in a Hair Colorant

Jennifer M. Marsh, Robie L. Lucas, Chris Cowans, Shane Whitaker | pp. 268

# Taro Mucilage: Extraction, Characterization, and Application in Cosmetic Formulations

Vaniele Bugoni Martins, Juliana Giantini da Silva Carvalho, Gabrielli Aline Pietro Bom, Mário Antônio Alves da Cunha, Julio Cesar Klein das Neves, Marina Leite Mitterer Daltoé, Cristiane Regina Budziak Parabocz | pp.279

#### **Surfactant-Free Microemulsions in Fragrance Tinctures**

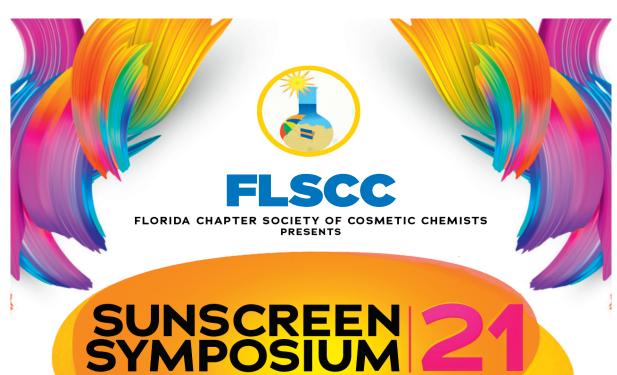
Perica Bošković, Vesna Sokol, Matea Dujmović, Martina Gudelj, Ante Prkić | pp. 292

#### UV Filters and Their Distribution on the Skin through Safe, Non-Penetrating Vehicles

Panagoula Pavlou, Angeliki Siamidi, Marilena Vlachou, Athanasia Varvaresou | pp. 298

### **Preparation and Evaluation of Pluronic Lecithin Organogels in Cosmetics**

Seong Jun Yang, Kyung-Sup Yoon | pp. 325 Purchased for the exclusive use of nofirst nolast (unknown) From: SCC Media Library & Resource Center (library.scconline.org)



SEPT. 23 - SEPT. 25

DISNEY'S YACHT & BEACH CLUB RESORT

Predicting the Future: Sun Care Trends in an Uncertain Regulatory Environment

### **Attendee or Exhibitor Registration:**

https://events.american-tradeshow.com/ sunscreensymposium21

#### **Hotels reservations:**

Click here or call (407) 939-4686 https://book.passkey.com/go/sunscreen21

Don't forget to Register for the Golf event & GALA! See you there!

(GALA event included in full reg, Golf is seperate.)

### Sponsorship Information

Be a part of the 2021 Sunscreen Symposium. Contact Peter Toth - flsccchair@gmail.com or Carol Holmes – flscctreasurer@gmail.com for your opportunity to be recognized!