

# Formula VIII

## Formulate Your Innovation. Innovate Your Formulation

Incorporating the 46th Jornadas Anuales del Comité Español  
De La Detergencia 2016 and NanoFormulation 2016

Barcelona, Spain  
4 – 7 July 2016

ISBN: 978-1-5108-3818-5

**Printed from e-media with permission by:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571



**Some format issues inherent in the e-media version may also appear in this print version.**

Copyright© (2016) by the Comité Español De La Detergencia  
All rights reserved.

Printed by Curran Associates, Inc. (2017)

For permission requests, please contact the Comité Español De La Detergencia  
at the address below.

Comité Español De La Detergencia  
Facultad Química  
Universidad de Barcelona  
Despacho 604  
c/ Martí Franques I  
Barcelona, E-08028  
Spain

Phone: 34 934 021 289

Fax: 34 934 021 291

[ced@ced.org.es](mailto:ced@ced.org.es)

**Additional copies of this publication are available from:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: 845-758-0400  
Fax: 845-758-2633  
Email: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

## Monday 4th July 2016

12:00 - 14:00 **Delivery of Documentation**

---

### Room 1

14:00 - 15:00 **TANDEM TALK**

- **Melt emulsification as formulation platform: research and application aspects**  
Frank, Kerstin /Abramov, Serghei. Basf (Germany) /Karlsruhe Institute of Technology (Germany)

---

### Room 1. DESIGN AND ENGINEERING OF FORMULATIONS. RELATIONSHIP BETWEEN STRUCTURE AND PERFORMANCE (1)

15:00 - 15:20 **Inventing a new category of formulation: a mouldable putty that turns into rubber**  
Jerlhagen, Asa, FormFormForm Ltd (United Kingdom)

15:20 - 15:40 **Particle Formulation by a Spheronization Process: Experiments and DEM Study**  
Weis, Dominik, University of Kaiserslautern (Germany)

15:40 - 16:00 **Emulsifiers for MWF: balancing performance, labeling and economics**  
Hedoire, Claude, Solvay (France)

16:00 - 16:20 **Investigation of chemically modified inulin as encapsulation material for pharmaceutical substances by spray-drying**  
Walz, Michael, University of Stuttgart (Germany)

---

### Room 2. FUNDAMENTAL SCIENCE, PHYSICO-CHEMICAL PRINCIPLES AND MECHANISMS IN FORMULATION (1)

15:00 - 15:20 **The Impact of Depletion-Attraction on the Nucleation and Growth of Colloidal Crystals**  
Patti, Alessandro, University of Manchester (United Kingdom)

15:20 - 15:40 **Development of Pectin Microparticles for Chlorhexidine Delivery: Physico-Chemical Studies and Formulation**  
Lascol, Manon, University of Lyon 1 (France)

15:40 - 16:00 **Prediction of the Equivalent Alkane Carbon Number (EACN) of Polar Oils with COSMO-RS  $\sigma$ -Moments: Application to the Aqueous Solubilisation of Fragrances.**  
Illous, Estelle, University of Lille 1, UCCS (France)

16:00 - 16:20 **Practical Implementation of HLD-NAC Theory**  
Gutiérrez, Alejandro, VLCI (Spain)

16:20 - 17:00 **COFFEE BREAK**

---

**Room 1. DESIGN AND ENGINEERING OF FORMULATIONS. RELATIONSHIP BETWEEN STRUCTURE AND PERFORMANCE (2)**

- 17:00 - 17:20     **Smart Alginate Microfibers**  
Chaurasia, Ankur, King's College London (United Kingdom)
- 17:20 - 17:40     **How to Relate Lipstick Sensory Properties to its Ingredients? The Importance of Understanding these Relationships to Formulate more Efficiently**  
Abidh, Sarah, Chanel Parfums Beauté (France)
- 17:40 - 18:00     **Emollients for Cosmetic Formulations: Towards Relationships between Chemicals, Physico-Chemical Properties, and Sensory Perceptions**  
Chao, Christina, Sorbonne Universities / Université de Technologie de Compiègne (France)

---

**Room 2. FUNDAMENTAL SCIENCE, PHYSICO-CHEMICAL PRINCIPLES AND MECHANISMS IN FORMULATION (2)**

- 17:00 - 17:20     **Synthesis and Characterization of Polyacrylamide / Poly(Acrylic Acid) Interpenetrating Polymer Network Nanoparticles**  
Rabelero Martín, University of Guadalajara (Mexico)
- 17:20 - 17:40     **Microgel Particles in Non-Aqueous Colloid-Polymer Mixtures**  
Van Duijneveldt, Jeroen University of Bristol (United Kingdom)
- 17:40 - 18:00     **Wetting and Bio-Fouling of Porous Coatings Impregnated with Oil**  
Horozov Tommy, University of Hull (United Kingdom)
- 18:00 - 19:30     **WELCOME CEREMONY AND RECEPTION**

## Tuesday 5th July 2016

---

### Room 1

- 09:00 - 10:00     **PLENARY LECTURE 1**  
**Virtual Reality of Chemical Processes: Dream or reality?**  
 Li, Jinghai Chinese Academy of Sciences (China)

---

### Room 1. DESIGN AND ENGINEERING OF FORMULATIONS. RELATIONSHIP BETWEEN STRUCTURE AND PERFORMANCE (3)

- 10:00 - 10:30     **INVITED LECTURE**  
**Formulation of a W/O emulsion encapsulating polysaccharides to improve the efficiency of vegetable spraying**  
 Clausse, Danièle, Université de Technologie de Compiègne (France)
- 10:30 - 10:50     **Formulation of Stimuli-Responsive Emulsions Using Citrus Pectin as a Natural Hydrocolloid Emulsifier**  
 Schmidt, Ulrike, S. Karlsruhe Institute of Technology (Germany)
- 10:50 - 11:10     **Cosmetic Formulation Promoting Skin Permeation based on Novel Bicontinuous Alpha-Gel Structure with Amphiphilic Tranexamic Acid Derivative**  
 Miyamoto, Masayoshi, KK Chanel Research and Technology Development Laboratory (Japan)

---

### Room 2. NANOFORMULATION: INTEGRATING NANOMATERIALS IN FORMULATION AND FORMULATING AT THE NANOSCALE (1)

- 10:00 - 10:30     **INVITED LECTURE**  
**Progress in Structuring Novel Liquid Nano Vehicles for Enhanced Bioavailability and Functionality of Bioactives**  
 Garti, Nissim, Hebrew University of Jerusalem (Israel)
- 10:30 - 10:50     **Formulation of Niosomes and Bicelles by Nonionic Double-Tailed Surfactants**  
 Aramaki, Kenji, Yokohama National University (Japan)
- 10:50 - 11:10     **Synthesis of Polyurea Nanocapsules by Interfacial Step Polymerization using Cosurfactant-Free Microemulsions as Templates**  
 Achour, Walid, University Claude Bernard Lyon (France)
- 11:10 - 11:40     **COFFEE BREAK**

---

### Room 1. DESIGN AND ENGINEERING OF FORMULATIONS. RELATIONSHIP BETWEEN STRUCTURE AND PERFORMANCE (4)

- 11:40 - 12:00     **Formulation of Artificial Finger Print**  
 Hasome, Ayano, Fujitsu Laboratories Ltd (Japan)
- 12:00 - 12:20     **Oligomeric Alkylglycoside Surfactants - New Power-Tools in the Formulation Toolbox**  
 Ulvenlund, Stefan, Enza Biotech Ab (Sweden)

## CONFERENCE PROGRAM

- 12:20 - 12:40     **Stabilization of High Molecular Weight Silicone Emulsions**  
Marchal, Frederic, Bluestar Silicones (France)
- 12:40 - 13:00     **Comparative Emulsifying Properties of Osa-Modified Starch: Granular Form vs. Dissolved State**  
Matos, Maria, University of Oviedo (Spain)

---

### **Room 2. NANOFORMULATION: INTEGRATING NANOMATERIALS IN FORMULATION AND FORMULATING AT THE NANOSCALE (2)**

- 11:40 - 12:00     **Photonic Materials Prepared Through the Entrapment of Quantum Dots into Silica**  
Shchipunov, Yury, Institute of Chemistry, Russian Academy of Sciences (Russia)
- 12:00 - 12:20     **Magnetic Solid Foams from Highly Concentrated Emulsions**  
Rodriguez-Abreu, Carlos, INL (Portugal)
- 12:20 - 12:40     **Micro-Mesostructured Silica from Ionic/Nonionic Surfactants Mixture**  
Blin, Jean, Luc University of Lorraine (France)
- 12:40 - 13:00     **Formulating Polymeric Superhydrophobic Coatings based on Functionalized SiO<sub>2</sub> Nanocomposites**  
Sánchez, Margarita, Centro De Investigacion En Materiales Avanzados, Unidad Monterrey (Mexico)
- 13:00 - 14:00     **LUNCH**

---

### **Room 1. DESIGN AND ENGINEERING OF FORMULATIONS. RELATIONSHIP BETWEEN STRUCTURE AND PERFORMANCE (5)**

- 14:00 - 14:20     **Formulation of Emulsions stabilized with Biodegradable PLGA Nanoparticles for Pharmaceutical and Cosmetic Applications**  
Albert, Claire Institut Galien Paris-Sud, University Paris-Saclay (France)
- 14:20 - 14:40     **Development of a Novel Generation of Softeners with Frangances Encapsulated in Quatsomes/Particle**  
Bernal, Cristobal, Carinsa (Spain)
- 14:40 - 15:00     **Formation of Functional Pharmaceutical Nanoparticles using Membrane Dispersion Cell Combined with Solvent Displacement Method**  
Othman, Rahimah, Loughborough University (United Kingdom)
- 15:00 - 15:20     **Encapsulation of Ferrous Sulphate in Niosomes for Yogurt Fortification**  
Gutierrez, Gemma University of Oviedo (Spain)
- 15:20 - 15:40     **New Sophorolipids - Naturally Derived High Performing Biosurfactants**  
Fender, Michael, Evonik (Germany)
- 15:40 - 16:00     **Formulation of Industrial Enzyme - Current and Future Grand Challenges**  
Andersen, Kim, Bruno Novozymes A/S (Denmark)

---

### **Room 2. FUNDAMENTAL SCIENCE, PHYSICO-CHEMICAL PRINCIPLES AND MECHANISMS IN FORMULATION (3)**

- 14:00 - 14:20     **Steady-State Droplet Size in Pickering Emulsions**  
Van Duijneveldt, Jeroen, University of Bristol (United Kingdom)

- 14:20 - 14:40     **Hierarchical Self-Assembly in Tranexamic Acid Cetyl Ester Hydrochloride System**  
Yamashita, Yuji, Chiba Institute of Science (Japan)
- 14:40 - 15:00     **Dynamic and Rheological Behaviour of a Polymer Melt Loaded with Polydisperse Nanoparticles**  
Burgos, José Javier, University of Manchester (United Kingdom)
- 15:00 - 15:20     **QSAR Study on Diverse Compounds for Effects on Thermal Stability of a Monoclonal Antibody**  
Oyetayo, Olubukayo-Opeyemi, Institute of Applied Biotechnology, Biberach University of Applied Sciences (Germany)
- 15:20 - 15:40     **PIT-Slope Method: a Simple Tool to Quantify the Amphiphilicity of Surfactants and determine the Structure-Interfacial Properties Relationship.**  
Ontiveros, Jesus F., Ecole National Supérieure de Chimie, Lille (France)
- 15:40 - 16:00     **Detailed Investigation of Concentrated Micro- and Nanodispersions by X-Ray Concentration Profiling**  
Lerche, Dietmar, Lum (Germany)
- 16:00 - 17:00     **POSTER SESSION + COFFEE BREAK**  
Free Afternoon

## Wednesday 6th July 2016

---

### Room 1

09:00 - 10:00      **PLENARY LECTURE 2**  
**Probing the interfacial properties of Janus particles at liquid interfaces**  
Hidalgo-Álvarez, Roque, University of Granada (Spain)

---

### Room 1. APPLICATIONS AND CUSTOMER NEEDS (1)

10:00 - 10:30      **INVITED LECTURE**  
**Microbial product development – A formulation point of view**  
Wessman, Per, SP Sveriges Tekniska Forskningsinstitut, Borås (Sweden)

10:30 - 10:50      **Organic-inorganic patchy particles as a versatile platform for foam and emulsion stabilization**  
Velikov, Krassimir, Unilever R&D Vlaardingen (The Netherlands)

10:50 - 11:10      **NANOCYTES® - Core-shell particles for the particle-based formulation of active pharmaceutical ingredients**  
Gruber-Traub, Carmen, Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB (Germany)

---

### Room 2. NANOFORMULATION: INTEGRATING NANOMATERIALS IN FORMULATION AND FORMULATING AT THE NANOSCALE (3)

10:00 - 10:30      **INVITED LECTURE**  
**Responsible Management of Nanotechnology**  
Schmid, Dagoberto, BASF Española S.L. (Spain)

10:30 - 10:50      **Formulation Strategies for the Production of Pharmaceutical Powders out of Precipitated API Nanoparticles**  
Melzig, Sebastian, Technische Universität Braunschweig (Germany)

10:50 - 11:10      **Formulation of Polymer Composites as Functional Coatings based on Functionalized NP's for Use on Solar Panels**  
Licea Jiménez, Liliana, Centro de Investigación en Materiales Avanzados (Mexico)

11:10 - 11:40      **COFFEE BREAK**

---

### Room 1. APPLICATIONS AND CUSTOMER NEEDS (2)

11:40 - 12:00      **Study of Emulsifiable Concentrates using Green Solvents**  
Oliveira, Adriano, Oxiteno S/A Industria e Comercio (Brazil)

12:00 - 12:20      **Protein Evaluation in Food Formulations by Passive Microrheology**  
Ramsch, Roland, Formulacion (France)

12:20 - 12:40      **Preparation of Stable Emulsions to Chlorpheniramine Recovery from Aqueous Solutions**  
Razo, Teresa Alejandra, University of Guanajuato (Mexico)

12:40 - 13:00      **A Multiple Emulsion Approach to Deliver 1-MCP for pre-Harvest Applications**  
Ghosh, Tirthankar, Agrofresh Inc. (United States)



13:00 - 13:20 **Predicting the Interfacial Tension of Multicomponent Liquid-Liquid Systems with COSMO-RS**  
Reinisch, Jens, COSMOlogic Germany)

---

**Room 2. NANOFORMULATION: INTEGRATING NANOMATERIALS IN FORMULATION AND FORMULATING AT THE NANOSCALE (4)**

11:40 - 12:00 **Deep-Sea Inspired Process for Bottom-Up Production of Nanoemulsions**  
Deguchi, Shigeru, Japan Agency for Marine-Earth Science and Technology (Japan)

12:00 - 12:20 **Polymeric Nano-Emulsions and Nanoparticles: Influence of Polymer Concentration on Size, Stability, Drug Encapsulation and Release**  
Homs, Maria, IQAC-CSIC (Spain)

12:20 - 12:40 **Formulation Strategies for the Preparation of Nanoemulsions containing Sensitive Carotenoids**  
Mira, Isabel, SP Technical Research Institute (Sweden)

12:40 - 13:00 **Sub-Micron Patterning of Polymer Brushes arising from the Inkjet Printing of Polyelectrolyte Macroinitiators**  
Yeates, Stephen, University of Manchester (United Kingdom)

13:00 - 13:20 **Engineering New Hybrid Nanoparticles for Formulation of New Materials**  
Celine, Hubert, Centre de Recherche Paul Pascal (France)

13:00 - 14:00 **LUNCH**

---

**Room 1**

14:00 - 15:00 **SUCCESS STORY**  
**Soft Matter and Colloids for the conservation of Cultural Heritage**  
Baglioni, Piero, University of Florence (Italy)

---

**Room 1. APPLICATIONS AND CUSTOMER NEEDS (3)**

15:00 - 15:20 **Aqueous Solubilisation of Fragrances in Volatile Solvo-Surfactant-Based Micro-emulsions**  
Nardello-Rataj, Véronique, University of Lille (France)

15:20 - 15:40 **Fragrances with Double Functionality. Novel Perfume Composition for the Prevention and Control of Diseases and Biofilms**  
Bernal, Cristóbal, Carinsa (Spain)

15:40 - 16:00 **Understanding the Role of Chelants in a Formulation**  
Giles, Matthew, R Innospec Ltd (United Kingdom)

---

**Room 2. CHARACTERISATION, PROPERTIES AND PERFORMANCES (1)**

15:00 - 15:20 **Dispersibility of aqueous nanosized metal oxide as function of dispersion intensity and characterization of degree of flocculation**  
Lerche, Dietmar, LUM (Germany)

15:20 - 15:40 **Design of Agro-based Coatings: from innovative raw materials to optimal performances, the critical input of property characterization**  
Collinet, Marion, IFMAS (France)

## CONFERENCE PROGRAM

15:40 - 16:00      **Determination of particle surface properties for liquids election regarding pigment formulation**  
Süß, Sebastian, Friedrich-Alexander-Universität Erlangen, Nürnberg (Germany)

16:00 - 17:00      **POSTER SESSION + COFFEE BREAK**

---

### **Room 1. DESIGN AND ENGINEERING OF FORMULATIONS. RELATIONSHIP BETWEEN STRUCTURE AND PERFORMANCE (6)**

17:00 - 17:20      **Concentrated Oil-In-Water Emulsions Stabilized by Amphiphilic Polymers**  
Durand, Alain, University of Lorraine (France)

17:20 - 17:40      **Pickering Emulsions based on Clays: Fundamental Investigations and Potential Applications**  
Pitarch, Jesus, Clariant (Germany)

17:40 - 18:00      **Stimuli-Responsive Capsules based on Pickering Emulsion**  
Baillot, Marion, University of Bordeaux / Crpp (France)

18:00 - 18:20      **High Internal Phase Emulsion Stabilized by Whey Protein Isolate-Low-Methoxy Pectin Complexes**  
Wijaya, Wahyu, Ghent University (Belgium)

18:20 - 18:40      **Formulation of Organic Crystals in Stirred Media Mills**  
Konnerth, Christoph, Institute of ParticleTechnology (Germany)

18:40 - 19:00      **High-Throughput Development of Micro-Capsule Containing Formulations**  
Paul, Johan, Flamac (Belgium)

---

### **Room 2. CHARACTERISATION, PROPERTIES AND PERFORMANCES (2)**

17:00 - 17:20      **Fast Temperature Screening for Viscosity Determination of Thermoresponsive Polymers with Innovative Microfluidic Device**  
Fleury, Mathias, Formulaction (France)

17:20 - 17:40      **Anisotropy in Liquid Crystalline Phases as Detected by Natural Levels of D2O: An NMR Method to Characterise Gel Phases**  
Mendoza, Cesar, Unilever (United Kingdom)

17:40 - 18:00      **Nanoformulation: Water-In-Diesel Fuel Preparation (using High-Energy Emulsification Method), Stability and Physical Properties**  
Mane Harishchadra, Swapnil, Institute of Chemical Technology (India)

18:00 - 18:20      **Novel Photocatalyst - Composite Membrane Filter for Treatment of Pharmaceutical Residues and other Organic Pollutants in Waste Water**  
Persson, Karin, SP Technical Institute (Sweden)

18:20 - 18:40      **Determination of Density of Emulsion Droplets and inner Dispersed Phase Fraction of W/O/W Double Emulsions**  
Lerche, Dietmar, Dr. Lerche KG (Germany)

18:40 - 19:00      **Green Synthesis of Silver Nanoparticles in Microemulsion Media**  
Rivera Rangel, Rubén Dario, University of Guanajuato (Mexico)

20:30                      **CONFERENCE DINNER**

## Thursday 7th July 2016

---

### Room 1

- 09:00 - 10:00     **PLENARY LECTURE 3**  
**Formulation of tailor-made liquid solutions with a special focus on green and sustainable chemistry**  
 Kunz, Werner, University of Regensburg (Germany)

---

### Room 1. DESIGN AND ENGINEERING OF FORMULATIONS. RELATIONSHIP BETWEEN STRUCTURE AND PERFORMANCE (7)

- 10:00 - 10:30     **About microemulsion-based gels, reversible adhesives and structured emulsions, 30 years re-search and industrial applications of block copolymers**  
 Quellet, Christian, Leugos (Switzerland)
- 10:30 - 10:50     **Optimum Formulation for Maximum Encapsulation in Multiple Emulsions**  
 Jahanzad, Fatemeh London South Bank University (United Kingdom)
- 10:50 - 11:10     **Formulation of industrial relevant enzymes**  
 Baier, Grit, Basf (Germany)

---

### Room 2. FORMULATIONS FOR BIOMEDICAL NEEDS (1)

- 10:00 - 10:30     **INVITED LECTURE**  
**Interactions of nanomedicines with blood proteins and cells: modulation by nanoparticle surface design**  
 Vauthier, Christine, University of Paris Sud, CNRS (France)
- 10:30 - 10:50     **Immuno-modulatory PPH dendrimer: from systemic to topical delivery?**  
 Turrin, Cédric-Olivier, Laboratoire de Chimie de Coordination du CNRS (France)
- 10:50 - 11:10     **Embracing the Circular Economy with Enzyme Technology**  
 Bartolini, Tony, Novozymes (Denmark)
- 11:10 - 11:40     **COFFEE BREAK**

---

### Room 1. DESIGN AND ENGINEERING OF FORMULATIONS. RELATIONSHIP BETWEEN STRUCTURE AND PERFORMANCE (8)

- 11:40 - 12:00     **Formulation of Ceramic Foams: a New Class of Amphiphiles**  
 Celani, Andrea, University of Birmingham (United Kingdom)
- 12:00 - 12:20     **Enhancement of a Green Emulsion Stability by Tuning Its Formulation and Processing**  
 Santos García, Jenifer, University of Sevilla (Spain)
- 12:20 - 12:40     **Encapsulation by Supercritical Fluid and Pressurised Gas Processing**  
 Rose, Paul, Callaghan Innovation (New Zealand)
- 12:40 - 13:00     **Glucamide as a Bio-Based Sugar Surfactants for Home Care**  
 Schinle, Florian, Clariant (Germany)

## CONFERENCE PROGRAM

13:00 - 13:20      **Benefits of Particular Silicones for Protecting Hair Fibers against Heat Damage**  
Sabrina, Marchioretto, Dow Corning (Belgium)

---

### **Room 2. FORMULATIONS FOR BIOMEDICAL NEEDS (2)**

11:40 - 12:00      **Amorphization of Crystalline Pharmaceutical Active Ingredients via Formulation Technologies**  
Yee , Lim, Tau Institute of Chemical and Engineering Sciences (Singapore)

12:00 - 12:20      **Antimicrobial Soft Contact Lenses using Formulated Peptides**  
Salvagni, Emiliano, IQAC-CSIC (Spain)

12:20 - 12:40      **Hyaluronic Acid Gels containing Liposomes for the Sustained Delivery of a Corticoid to the inner Ear: Formulation, Characterization and Evaluation**  
Agnely , Florence, Institut Galien Paris-Sud (France)

12:40 - 13:00      **Stability of Immobilised  $\beta$ -Galactosidase on Meso-Macroporous Silica Support**  
Fontainhas Prazeres, Sofia, University of Alcalá (Spain)

13:00 - 13:20      **Encapsulation of L. Rhamnosus GG (LGG) in Alginate-Silicate**  
Haffner, Fernanda, Nano Group, SRSMC-CNRS University of Lorraine (France)

---

### **Room 1**

13:20 -13:40      **CONFERENCE ENDING**

13:40              **LUNCH**