

# MAKING BUSINESS WITH GREEN CHEMISTRY & SUSTAINABLE ENERGY

## Summer School

July 22-26, 2019 - Sarteano (SI), Italy

## PROGRAM

### Sunday – July 21

17:00-19:00

Registration

### Monday – July 22

08:45-09:15

#### Green Chemistry

Introduction to the Summer School: objectives & program (*Gaetano Iaquaniello, KT & NextChem*)

#### Opportunities for Innovation & Business

09:15-10:00

The vision of future Sustainable Energy, Catalyst & Chemistry (*Gabriele Centi, INSTM & ERIC aisbl*)

10:00-10:20

Coffee Break

10:20-11:20

Green Economy and Economic development (*Steven Strauss – Princeton University*)

11:20-12:20

How green chemistry is going to change the chemical engineering (*Gaetano Iaquaniello, KT & NextChem*)

12:20-12:30

Group Photo

12:30-14:00

Lunch

14:00-14:45

Making a new chemistry with CO<sub>2</sub> (*Klaas Jan Schouten – Avantium*)

#### Selected Examples and Case History

14:45-15:30

Waste feedstocks for sustainable chemicals and fuels (*Annarita Salladini – NextChem*)

15:30-15:50

Coffee Break

15:50-16:35

Ultra-compact Bio-fuels catalytic reforming processes for distributed renewable hydrogen production (*Vincenzo Palma – UniSalerno*)

16:35-17:20

Innovative photo catalytic materials for sustainable chemistry & environmental remediation (*Vincenzo Vaiano – UniSalerno*)

#### Concepts of Business Planning & Management

17:20-18:00

Leveraging Intellectual Property for commercialization of research (*Stefano Vannuzzi – ERIC aisbl*)

#### Short Oral Presentations by Attendees

18:00-19:00

Short Orals 1-10 (5+1 min each)

### Tuesday – July 23

#### Green Engineering & Processing

##### Methods and Technologies

08:45-09:30

Novel green-processes and technology using membranes (*Angelo Basile, ITM - CNR*)

09:30-10:20

Process simulation for the design and optimization (*Marcello De Falco, Campus Biomedico*)

10:20-10:40

Coffee Break

10:40-11:40

Calculate the production costs of your own process scheme (*Emma Palo - KT*)

##### Opportunities

11:40-12:30

Oleo-chemistry: opportunities & challenges (*Antonio Zarli – NextChem*)

12:30-14:00

Lunch

14:00-14:45

Building the future of green chemistry (*Alessandro Susa, Edoardo Facchi – Tecnimont*)

##### Patents and IPR

14:45-15:30

How to protect your I.P. (*Jan Willem. Goedemakers – Stamicarbon*)

15:30-15:50

Coffee-Break

15:50-16:35

Write your own patent application (*Jan Willem. Goedemakers – Stamicarbon*)

##### Case History

16:35-17:20

New Business & Innovation at IKEA (*Raffaele Giovinazzi – IKEA*)

##### Short Orals & Posters by Attendees

17:20-17:50

Short Orals 11-15 (5+1 min each)

17:50-19:10

Poster session 1

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### Wednesday – July 24

#### Bio-Polymers & Advanced Materials

09:00-09:45

New strategies enhancing the feasibility of microalgal cultivation (*Francesca Pagnanelli – UniRoma La Sapienza*)

09:45-10:30

Bio- Polymers Engineering – (*Massimiliano Barletta – Uniroma III*)

10:30-10:50

Coffee Break

10:50-11:35

Nanotechnologies for green materials and processes (*Paolo Ciambelli, UniSalerno*)

#### Business examples

11:35-12:30

How to make a Business Plan (*Barbara Masciocchi, NextChem*)

12:30-14:00

Lunch

14:00-14:45

Building your own business: the GR3N case (*Matteo Bertele – GR3N*)

14:45-15:30

PET depolymerization: a novel process for plastic waste chemical recycle (The Demeto Project - Part I) (*Maurizio Crippa – GR3N*)

15:30-15:50

Coffee Break

15:50-16:30

The Demeto Project - Part II (*Maurizio Crippa – GR3N*)

#### Short Oral Presentations by Attendees

16:30-18:00

Short Orals 16-30 (5+1 min each)

18:00-19:00

Poster session 2

### Thursday – July 25

#### Catalyst and Reaction Engineering

##### Opportunities

09:00-09:45

Leveraging novel green solvents to drive conceptual and practical biorefinery innovation (*Marco Bravi – Uniroma I*)

09:45-10:30

Fermentation & Biochemical Engineering: principles and applications (*Vincenzo Piemonte - Campus Bio-Medico*)

10:30-10:50

Coffee Break

10:50-11:35

Bio Refinery and Green Diesel: process and product innovation (*Giacomo Rispoli - Eni*)

11:35-12:30

Design of catalyst and electrode for photo-catalytic water splitting (*Yongdan Li – Aalto University*)

12:30-14:00

Lunch

##### Start-up

14:00-14:45

The Role of start-up companies in creating job opportunities (*Gianni Bardazzi – Maire Tecnimont*)

14:45-15:30

Small and Medium firms funding at EC level (*Marcello De Falco - Campus Bio-Medico*)

15:30-16:15

Creating a winning start-up in green chemistry (*Paolo De Stefanis – Day One*)

16:15-16:35

Coffee-Break

##### Training Session

16:35-18:30

Make your own start-up – Participants will be divided in 2/3 groups with a tutor to individuate specific case proposed by participants to be discussed

19:30-22:30

Social Dinner & Presentation of Certificates

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### Friday July 26

#### Renewable Energy, Fuel Cells, Energy Storage & Photo Chemistry

##### Opportunities

08.30-09.15

Artificial leaves using sunlight to produce fuels (*Siglinda Perathoner, UniMessina*)

09.15-10.00

Grid scale energy scale with flow battery (*Yongdan Li – Aalto University*)

10.00-10.45

Nanotechnology in energy storage application (*Maria Sarno – UniSalerno*)

10.45-11.00

Coffee Break

11.00-11.45

Solar-thermal power and chemical engineering: new opportunities (*Martin Roeb, DLR*)

11.45-12.30

Fuel cells: opportunities and challenges (*Giulio Guandalini - PoliMilano*)

12.30-14.00

Lunch

##### Writing research proposals and funds rising

14.00-14.45

Writing competitive research proposal (*Paolo De Stefanis – Day-One*)

14.45-15.30

Fund raising: how to approach it (*Paolo De Stefanis – Day One*)

15.30-15.50

Coffee Break

##### LCA and related methodologies

15.50-16.35

Assess green processes by LCA and related methodologies (*Roberta Salomone – UniMessina*)

##### Final Debate

- Debate on green chemistry

Participants will be divided in 2/3 group with a tutor to stimulate and moderate the discussion assigned to the specific group.

16.35-18.00

- Why we need to move to a sustainable society? *Coordinator G. Centi*
- How we are going to replace fossils in energy? *Coordinator A. Basile*
- How we are going to replace hydrocarbons in commodity production? *Coordinator Marcello De Falco*

18:00-18.15

Evaluation and Closing Remarks (*Gaetano Iaquaniello – Gabriele Centi*)