

Scientific Program

	<i>Morning</i>	<i>Afternoon</i>
<i>Saturday May 24th</i>		<i>Arrivals and Registration</i>
<i>Sunday May 25th</i>	<i>Half day tour</i>	<i>Opening and introductory remarks</i> SESSION 1: Multiscale modeling: from molecular to process engineering (I) and SESSION 2: Sustainable and intensified processing (I)
<i>Monday May 26th</i>	SESSION 1: Multiscale modeling: from molecular to process engineering (II) and SESSION 2: Sustainable and intensified processing (II)	SESSION 3: Chemical- and bio-engineering for energy Poster Paper Session A
<i>Tuesday May 27th</i>	SESSION 4: Biomaterials and bioprocesses (I)	SESSION 4: Biomaterials and bioprocesses (II) Poster Paper Session B
<i>Wednesday May 28th</i>	SESSION 5: Nanostructured and functionalised materials for products and processes	<i>Visit to the University of Calabria</i> <i>Conference Dinner in old Rende</i>
<i>Thursday May 29th</i>	SESSION 6: Water purification, reclamation and reuse <i>General discussion and final remarks</i>	<i>Departures</i>

Saturday 24th May

17:00 – 19:30 *Arrivals and Registration*

Sunday 25th May

9:30 – 13:00 *Half day tour*

13:00 – 14:00 *Lunch*

14:00 – 14:30 *Opening and introductory remarks*
Enrico DRIOLI (ITALY), Steven M. CRAMER (USA) and Robert WELLEK (USA)

SESSION 1: Multiscale modeling: from molecular to process engineering (I) Chairpersons: Peter CUMMINGS (USA) and Enrico DRIOLI (ITALY)

14:30 – 15:00 *Multiscale simulations of polymers: from atomistic models to entanglement networks to rheological properties*
Doros N. THEODOROU (GREECE)

15:00 – 15:30 *Systems engineering challenges and opportunities in biological networks*
Costas D. MARANAS (USA)

15:30 – 16:00 *From numerical problem solving to model based experimentation – incorporating computer based tools of multiscale modeling into the ChE curriculum* - Mordechai SHACHAM (ISRAEL)

16:00 – 16:30 *Multiscale modeling in theoretical and computational nanoscience*
Peter CUMMINGS (USA)

16:30 – 17:00 *Multiscale molecular modeling for nanostructured materials*
Maurizio FERMEGLIA (ITALY)

17:00 – 17:30 *Coffee break*

SESSION 2: Sustainable and intensified processing (I) Chairpersons: Yachin COHEN (ISRAEL) and Nicholas ABBOTT (USA)

17:30 – 18:00 *Spatial and temporal control over nanostructured liquids: tunable "solvents" for micro-scale chemical process intensification*
Nicholas ABBOTT (USA)

18:00 – 18:30 *Opportunities for process intensification from novel structured catalysts*
Enrico TRONCONI (ITALY)

18:30 – 19:00 *Molecular sieve nanostructures for process intensification*
Michael TSAPATSIS (USA)

19:00 – 19:30 *Alcohol derived petrochemicals & fuels for a sustainable future*
Timur DOGU (TURKEY)

19:30 – 20:00 *Limits to process intensification in biocatalysis*
Andreas BOMMARIUS (USA)

20:30 *Dinner*

Monday 26th May (morning)

07:00 – 08:30 *Breakfast*

SESSION 1: Multiscale modeling: from molecular to process engineering (II)

Chairpersons: Doros N. THEODOROU (GREECE) and Angelo CHIANESE (ITALY)

- 08:30 – 09:00 *Molecular modeling of fluids: from molecular simulation and molecular theory to engineering models* - Clare McCABE (USA)
- 09:00 – 09:30 *Multiscale modeling: from molecular to coarse-grained models*
Simcha SREBNIK (ISRAEL)
- 09:30 – 10:00 *Lessons from nature to bridge multiscale gaps in chemical engineering design* - Marc-Olivier COPPENS (USA)
- 10:00 – 10:30 *Modelling tools for simulating fundamental aspects in multi-phase systems*
Alberto DI RENZO (ITALY)
- 10:30 – 11:00 *Multi-scale models for biomolecular engineering*
Yiannis N. KAZNESSIS (USA)

11:00 – 11:30 *Coffee break*

SESSION 2: Sustainable and intensified processing (II)

Chairpersons: Guido SARACCO (ITALY) and Steven M. CRAMER (USA)

- 11:30 – 12:00 *Fuel technology and combustion towards "zero-emission" scenarios: a chemical engineering perspective* - Leonardo TOGNOTTI (ITALY)
- 12:00 – 12:30 *Separations with ionic liquids*
Joan BRENNECKE (USA)
- 12:30 – 13:00 *Sustainable energy production: the great 21st century challenge in chemical engineering* - Eric McFARLAND (USA)
- 13:00 – 13:30 *The role of microreaction engineering in portable and distributed energy production* - Dion VLACHOS (USA)

13:30 – 15:00 *Lunch*

SESSION 3: Chemical- and bio- engineering for energy

Chairpersons: Raymond J. GORTE (USA) and Renzo DI FELICE (ITALY)

- 15:00 – 15:30 *Novel MEAs for high temperature PEM fuel cells and proton conduction mechanism* - Stylianos G. NEOPHYTIDIES (GREECE)
- 15:30 – 16:00 *Efficient reduction of CO₂ in a Solid Oxide Electrolyzer*
Raymond J. GORTE (USA)
- 16:00 – 16:30 *Pure and CO-free hydrogen by means of membrane systems*
Giuseppe BARBIERI (ITALY)
- 16:30 – 17:00 *Chemical engineering challenges and proton transport mechanism in hydrated Nafion membrane fuel cells* - Costas VAYENAS (GREECE)
- 17:00 – 17:30 *Recent advancements in carbon research with special emphasis on carbon fibers and foams* - Ekrem EKINCI (TURKEY)
- 17:30 – 18:00 *Catalytic and photocatalytic production of hydrogen from biomass components and derivatives* - Xenophon E. VERYKIOS (GREECE)

18:00 – 19:30	POSTER PAPER SESSION A & Coffee Chairperson: Giuseppe BARBIERI (ITALY)
20:30	<i>Dinner</i>

Tuesday 27th May

07:00 – 08:30	<i>Breakfast</i>
SESSION 4: Biomaterials and bioprocesses (I) Chairpersons: Bill BENTLEY (USA) and Alberto BERTUCCO (ITALY)	
08:30 – 09:00	<i>Membrane cascades for downstream processing: evolution via emergence</i> Edwin N. LIGHTFOOT (USA)
09:00 – 09:30	<i>Glucose fuel cells</i> - Pinchas SCHECHNER (ISRAEL)
09:30 – 10:00	<i>Multifunctional scaffolds and novel processes for engineering biological tissue in vitro</i> - Paolo NETTI (ITALY)
10:00 – 10:30	<i>Bioinspired adhesives for tissue repair</i> Havazelet BIANCO-PELED (ISRAEL)
10:30 – 11:00	<i>Investigation of chemically selective displacers using robotic high throughput screening, SPR, NMR and MD simulations</i> - Steven M. CRAMER (USA)
11:00 – 11:30	<i>Coffee break</i>
11:30 – 12:00	<i>Nanotechnology advances in controlled drug delivery systems</i> Costas KIPARISSIDES (GREECE)
12:00 – 12:30	<i>Evolutionary approaches for engineering biofuels and biorefining organisms</i> Ryan T. GILL (USA)
12:30 – 13:00	<i>Combinatorial and high throughput membrane synthesis and testing: tailoring membrane surfaces to applications</i> - Georges BELFORT (USA)
13:00 – 15:00	<i>Lunch</i>
SESSION 4: Biomaterials and bioprocesses (II) Chairpersons: Rodica STANESCU (ROMANIA) and Giancarlo BALDI (ITALY)	
15:00 – 15:30	<i>Cell-cell signaling and communication: an avenue for new drugs, devices, and expression systems</i> - Bill BENTLEY (USA)
15:30 – 16:00	<i>Stem cell engineering for developing in vitro models of functional tissues and diseases</i> - Nicola ELVASSORE (ITALY)
16:00 – 16:30	<i>Molecular bioprocessing for health care applications</i> Jonathan DORDICK (USA)
16:30 – 17:00	<i>Effects of hybrid scaffolds and mechanical stimulation on engineered muscle tissue</i> - Rosa AZHARI (ISRAEL)
17:00 – 17:30	<i>New monolithic stationary phases for capillary electro-chromatography</i> Çiğdem GÖLGELIOĞLU (TURKEY)

17:30 – 19:00	POSTER PAPER SESSION B & Coffee Chairperson: Alessandra CRISCUOLI (ITALY)
20:30	<i>Dinner</i>

Wednesday 28th May

07:00 – 08:30	<i>Breakfast</i>
SESSION 5: Nanostructured and functionalised materials for products and processes Chairpersons: Alexander KATZ (USA) and Vladimiro NIKOLAKIS (GREECE)	
08:30 – 09:00	<i>Inner- and outer-sphere control of heterogeneous catalysis: cooperativity and confinement</i> - Alexander KATZ (USA)
09:00 – 09:30	<i>Production of templated-carbon nano materials, carbon nanofibers and super capacitors</i> - Yuda YURUM (TURKEY)
09:30 – 10:00	<i>Self organization at nanoscale: nanoparticles, proteins and hybrid superstructures</i> - Nicholas A. KOTOV (USA)
10:00 – 10:30	<i>Design and scale-up of chemical reactors for nano-particles production</i> Daniele L. MARCHISIO (ITALY)
10:30 – 11:00	<i>Bioinspired materials: Protein-templated synthesis of hybrid elastic nanomagnets</i> - Surya MALLAPRAGADA (USA)
11:00 – 11:30	<i>Coffee break</i>
11:30 – 12:00	<i>Nanomaterial-based electronic nose devices – from synthesis to applications</i> Hossam HAICK (ISRAEL)
12:00 – 12:30	<i>Supported "molecular" catalysts: metal complexes and metal clusters and their interconversions</i> - Bruce GATES (USA)
12:30 – 13:00	<i>Single-walled carbon nanotubes in liquids: basic science and applications to processing</i> - Matteo PASQUALI (USA)
13:00 – 13:30	<i>Investigation of the effect of tetrapropylammonium hydroxide on silicalite-1 crystallization using ATR/FTIR spectroscopy</i> – Vladimiro NIKOLAKIS (Greece)
13:30 – 14:30	<i>Lunch</i>
14:30 – 24:00	<i>Visit to the University of Calabria and Conference Dinner in old Rende</i>

Thursday 29th May

07:00 – 08:30 *Breakfast*

SESSION 6: Water purification, reclamation and reuse

Chairpersons: Yuda YURUM (TURKEY) and Menachem ELIMELECH (USA)

08:30 – 09:00 *Hybrid ion exchangers (HIXs) for removal and sensing of trace contaminants in water* Arup K. SENGUPTA (USA)

09:00 – 09:30 *Energy demand in desalination processes*
Rafi SEMIAT (ISRAEL)

09:30 – 10:00 *Forward osmosis desalination: progress and challenge*
Menachem ELIMELECH (USA)

10:00 – 10:30 *Integration of advanced wastewater treatment stages to achieve efficient industrial effluent recycling* - Carmen TEODOSIU (ROMANIA)

10:30 – 11:00 *Coffee break*

11:00 – 11:30 *Control of emerging waterborne pathogens: inactivation kinetics and mechanisms* - Benito J. MARINAS (USA)

11:30 – 12:00 *Materials- based improvements in membrane processes for water treatment and reuse* - Mark R. WIESNER (USA)

12:00 – 13:00 *General discussion and final remarks*

13:00 – 14:30 *Lunch and Departures*

Poster Paper Session A

Multiscale modeling: from molecular to process engineering

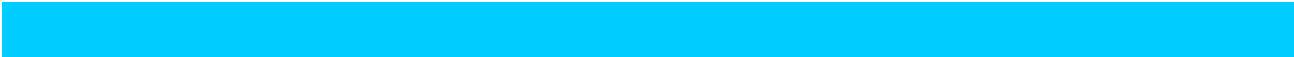
- A1 *Virtual sensors can reduce lab analysis requirements in the industrial production of specialty chemicals* - Pierantonio FACCO (Italy)
- A2 *Application of mercury porosimetry to three dimensional (3D) stochastic network model on acidic ion exchange resins* - Nuray OKTAR (Turkey)

Sustainable and intensified processing

- A3 *Simulated moving bed technology applied to coal gasification*
Maria SUDIRO (Italy)
- A4 *Preparation of gas separation silica membranes with controlled pore structures*
Berna TOPUZ (Turkey)
- A5 *Novel V-Ce-/SBA-15 catalysts for selective oxidation* – Gulsen DOGU (Turkey)
- A6 *ETBE synthesis over supported silicotungstic-acid catalysts*
Gulsen DOGU (Turkey)
- A7 *Comparative thermodynamic study of some doped micro- and nano- structured lanthanum manganites* - Cornelia Alina MARINESCU (Romania)
- A8 *The influence of the nonstoichiometry on the thermodynamic properties of lanthanum manganites* - Florina TEODORESCU (Romania)
- A9 *Sulfated chitosan (SCS)/polysulfone (PS) composite nanofiltration membrane surface cross-linked by Epichlorohydrin* - Jing MIAO (Israel)
- A10 *Effect of bath temperature on the synthesis of Pd-Ag composite membranes*
Saliha KILICARSLAN (Turkey)
- A11 *Modeling of hemodialysis operation* - Sacide ALSOY ALTINKAYA (Turkey)
- A12 *Tangential flow ultrafiltration for concentration of medicinal herbal extracts with cytostatic activity* - Gabriela PAUN (Romania)
- A13 *A modeling study for catalytic ozonation of aqueous dye solutions in a co-currently operated gas-liquid-solid reactor* - Tulay OZBELGE (Turkey)
- A14 *Production of ethanol based tertiary ether using ion exchange resin*
Nuray OKTAR (Turkey)
- A15 *Bubble size distribution in agitated vessels and bubble columns*
Miriam PETITTI (Italy)
- A16 *New polyimide-siloxane membranes: synthesis, characterization and gas separation properties* - Mehmet Ali GURKAYNAK (Turkey)
- A17 *Production of sodium borohydride from anhydrous borax*
Ilknur KAYACAN (Turkey)
- A18 *Antibacterial activity of Ag-exchanged clinoptilolite rich mineral: microwave and waterbath exchange* - Yelda AKDENIZ (Turkey)

- A19 *Partial oxidation of light hydrocarbons in liquid phase: preliminary study to use a membrane reactor* - Stella Maria CARNEVALE (Italy)
- A20 *Energy requirements in membrane distillation*
Maria Concetta CARNEVALE (Italy)
- A21 *Energy and exergy efficiencies of a sulfonation unit in a powder detergent plant*
Gulsun BEKTAŞ (TURKEY)
- A22 *Preparation and characterization of sulfonated polysulfone/TiO₂ composite membranes for proton exchange membrane fuel cell* - Yilser DEVRIM (Turkey)

Chemical- and bio- engineering for energy

- A23 *Synthesis, characterization and investigation of electrocatalytic properties of platinum ternary alloys in order to be used at the cathode of PEM fuel cell*
Silver GÜNES (Turkey)
- A24 *Rhodium and nickel incorporated MCM-41 type catalysts for steam reforming of ethanol* - Timur DOGU (Turkey)
- A25 *Investigation of mineral matter effect on product yield and composition in pyrolysis of oil shales* - Murat SERT (Turkey)
- A26 *Hydrogen and/or methane production from crude glycerol using supercritical water gasification process* - Dilek SELVI (Turkey)
- A27 *Catalyst preparation and testing for sodium borohydride hydrolysis*
Stefano GALLI (Italy)
- A28 *Membrane reactor and PEMFC integrated plant for power generation*
Adele BRUNETTI (Italy)
- 

Poster Paper Session B

Biomaterials and bioprocesses

- B1 *Affinity HPLC of proteins by new dye attached stationary phases based on uniform macroporous hydrogel particles* - Berna SARACOGLU (Turkey)
- B2 *Double responsive uniform-fluorescent microgel by dispersion polymerization* Berna SARACOGLU (Turkey)
- B3 *Oligonucleotide and RNA adsorption characteristics of monodisperse microgel functionalized with boronic acid moiety* - Berna SARACOGLU (Turkey)
- B4 *Simulation of transport and deposition of aerosol in the alveolar zone of the human airways* - Daniele L. MARCHISIO (Italy)

Nanostructured and functionalised materials for products and processes

- B5 *Nano-size zinc borate production from borax decahydrate and zinc nitrate* Sevdiye ATAKUL SAVRÝK (Turkey)
- B6 *Electrochemical oxidation and detection of 4-chlorophenol from wastewaters by using boron-doped diamond electrode* - Georgeta BURTICA (Romania)
- B7 *Investigation of flame retardancy and physical–mechanical properties of zinc borate/boric acid polyester composites* - Nursel DILSIZ (Turkey)
- B8 *Surface forces between Si_3N_4 AFM tip and glass surface* Gulnihal OZEK (Turkey)
- B9 *Effect of vapor pressure and composition on the shape of ZnO nanorods in microemulsion method* - Berrin IKIZLER (Turkey)
- B10 *Carbon nanotube production using MCM-41 type catalytic materials synthesized by microwave radiation and utilization of these in the manufacture of super-capacitors* - Asli NALBANT (Turkey)
- B11 *Production of boron nitride nanotubes by chemical vapor deposition (CVD) method* - Naime Asli SEZGI (Turkey)
- B12 *Investigation of the effect of tetrapropylammonium hydroxide on silicalite-1 crystallization using ATR/FTIR spectroscopy* – Vladimiro NIKOLAKIS (Greece)
- B13 *Self-assembled catalytic membranes: new active interfaces for greener and advanced chemical transformations in heterogeneous phase* - Marianna Carmela ACETO (Italy)
- B14 *Control of self-assembled nanoparticle array structures in heteroepitaxy* Dionisios VLACHOS (USA)
- B15 *Electrospinning of polystyrene/butyl rubber blends: a parametric study* Ahmet GÖKTAS (Turkey)
- B16 *DNA adsorption onto a new microgel functionalized with polycationic molecular brushes generated by RAFT* - Berna SARACOGLU (Turkey)
- B17 *An HPLC-IMER by click-chemistry* - Berna SARACOGLU (Turkey)
- B18 *Click-chemistry for surface modification of monodisperse-macroporous particles* Berna SARACOGLU (Turkey)

- B19 *Synthesis and characterization of MCM-41 catalysts activated with different transition metals (V, Mo, Nb) - Arzu SOLMAZ (Turkey)*
- B20 *Synthesis of TiO₂ nanorods by two wet chemical processes*
H. Banu YENER (Turkey)

Water purification, reclamation and reuse

- B21 *Ultrafiltration performances in the removal of priority organic pollutants*
Corina-Petronela MUSTERET (Romania)
- B22 *Studies on the application of zeolites in treating portable water on a pilot scale*
Cristian DANIELESCU (Romania)
- B23 *Chemical conditioning of digested sewage sludge with floerger FR 7850 synthetic polyelectrolyte - Florica MANEA (Romania)*
- B24 *Oxidation of dyes in synthetic wastewaters to mineralization by catalytic ozonation - Tulay OZBELGE (Turkey)*
- B25 *A study of the anodic oxidation of 4-chlorophenol from wastewaters*
Adriana BEBESELEA (Romania)
- B26 *Removal of Cr(VI) from wastewaters using Mg/Zn-Al-CO₃ layered double hydroxides - Rodica PODE (Romania)*
- B27 *Crystals recovery from NF retentate streams through membrane crystallizer devices - Francesca MACEDONIO (Italy)*
- B28 *Approaching the zero-liquid-discharge (ZLD) goal by integrated membrane system for seawater desalination: exergy analysis and economical considerations - Sulaiman AL OBAIDANI (Sultanate of Oman)*
- B29 *Photocatalytic membrane reactors (PMRs) for the removal of drugs from waters using polycrystalline TiO₂ - Angela CARUSO (Italy)*
- B30 *Using gracilaria verrucosa as an alternative carbon source in biological denitrification of drinking water - Orkun Ovez NALCACI (Turkey)*
- B31 *Polycaprolactone and bacterial strain interaction in biological denitrification; a study on batch and continuous systems - Orkun Ovez NALCACI (Turkey)*
- B32 *Removal and recovery of hexavalent chromium anions from aqueous solutions via polymer enhanced ultrafiltration using a specially synthesized polyelectrolyte - Hilmi Onder OZBELGE (Turkey)*
- B33 *Heavy metal adsorption characteristics of macroporous polymer particles carrying molecular brushes generated by ATRP - Berna SARACOGLU (Turkey)*