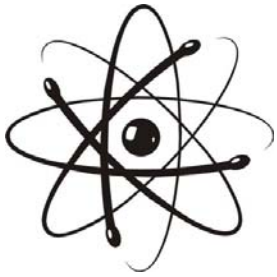
Università degli Studi di Trieste

Società Chimica Italiana
Sezione Friuli Venezia Giulia

Università degli Studi di Udine

CONVEGNO SCIENTIFICO

I giovani e la Chimica in Friuli Venezia Giulia



Trieste, 29 settembre 2016

Aula Magna – Edificio C11
Campus di Piazzale Europa

Il Consiglio Direttivo della Sezione Friuli Venezia Giulia della Società Chimica Italiana, rinnovando un evento culturale già sperimentato con successo negli scorsi anni, ripropone l'incontro scientifico tra le realtà universitarie regionali organizzando il convegno "I Giovani e la Chimica in Friuli Venezia Giulia". Tale occasione di incontro tra i giovani non-strutturati offre loro l'opportunità di presentare i risultati del proprio lavoro di ricerca più recente. Lo scopo principale è di promuovere la conoscenza e l'integrazione dei gruppi di ricerca universitari regionali proiettando un'immagine giovane e vitale della Chimica all'esterno del mondo accademico. Nel programma sono inserite due conferenze plenarie focalizzate su tematiche moderne e presentate da esperti dei rispettivi settori. I riassunti sono riportati alla fine di questo programma.

Programma

Ore 9.15 – 9.30 *Saluti ed apertura lavori*

Chairperson: ***Piero Decleva***

Ore 9.30 **Elena Baracchini**
Dipartimento di Scienze Chimiche e Farmaceutiche, TS
Assessment of exposure to submicron and ultrafine particles during aluminium welding: an integrated approach for sampling and characterization

Ore 9.50 **Salvatore Baldino**
Dipartimento di Scienze AgroAlimentari, Ambientali e Animali, UD
Revisiting ammonium formate: chemoselective transfer hydrogenation of commercial-grade aldehydes catalyzed by ruthenium pincer complexes

Ore 10.10 **Anggy Gutierrez**
Dipartimento di Scienze Chimiche e Farmaceutiche, TS
Chlorogenic acids profile of walnut leaves

Ore 10.30 – 10.50 *coffee break*

Chairperson: ***Alessandro Del Zotto***

Ore 10.50 **Lanfranco Conte**
Dipartimento di Scienze AgroAlimentari, Ambientali ed Animali, UD
Assessment of purity and quality of foods and improvement of instrumental analytical chemistry

Chairperson: ***Roberto Rizzo***

Ore 11.40 **Matteo Monai**
Dipartimento di Scienze Chimiche e Farmaceutiche, TS
Design of Nanostructured Materials for Catalytic Applications

Ore 12.00 **Mattia Gatto**
Dipartimento di Scienze AgroAlimentari, Ambientali e Animali, UD
Development of sustainable methodologies for homogeneous gold catalysis

Ore 12.20 **Marco Di Stefano**
Dipartimento di Scienze della Vita, TS
Hydrophobic segments in the exopolysaccharide extracted from *Burkholderia multivorans* biofilms

Pausa pranzo

Chairperson: ***Daniele Zuccaccia***

Ore 14.30 **Nicola Quadri**
Dipartimento di Scienze Chimiche e Farmaceutiche, TS
Dyson orbitals for the calculation of many electron processes in molecular photoionization

Ore 14.50 **Rossella Svigelj**
Dipartimento di Scienze AgroAlimentari, Ambientali e Animali, UD
Development of an electrochemical aptasensor for gliadin detection in food

Ore 15.10 **Giorgia Regini**
Dipartimento di Scienze Chimiche e Farmaceutiche, TS
Dihydropyrimidines as promising BACE 1 inhibitors

Chairperson: ***Lucia Pasquato***

Ore 15.30 **Leonard Prins**
Department of Chemical Sciences, University of Padova
Self-assembly of molecules into functional nanostructures

Ore 16.20 – 16.40 *coffee break*

Chairperson: ***Fulvia Felluga***

Ore 16.40 **Ana Oreški**
Dipartimento di Scienze Chimiche e Farmaceutiche, TS
Detecting coffee terpenes by imprinted polymers

Ore 17.00 **Alessandra Toso**
Dipartimento Politecnico di Ingegneria e Architettura, UD
Study of the stability and light-off performances of Pd-based catalysts for the abatement of methane in Natural Gas Vehicles (NGVs)

Ore 17.20 **Massimo Tosolini**
Dipartimento di Scienze Chimiche e Farmaceutiche, TS
Transition Metal Complexes with bis-Phosphine Ligands as Anion Transporters across Biological Membranes

Ore 17.40 **Laura Destefanis**
Dipartimento di Scienze Chimiche e Farmaceutiche, TS
Structural studies of *Pleurotus ostreatus* Lectin (POL), a fungal protein of medical interest

Assessment of purity and quality of foods and improvement of instrumental analytical chemistry

Lanfranco Conte
Dipartimento di Scienze Agro Alimentari, Ambientali ed Animali – DI4A
Università degli Studi di Udine

At the early stages of its history, the assessment of food characteristics had been established mainly for fiscal controls: the quality needs to be checked in order to evaluate if the tolls were corresponding.
Later, the controls was devoted to highlight the presence of chemicals potentially dangerous to human health and later on to verify selected characteristics dealing with the "hedonistic" sphere of consumers behaviours.
Until separative techniques were not adequately developed, however, the use of the so called "Chemistry of indexes" left room to personal interpretation of results of analysis and it had been mandatory to wait for the development of instrumental techniques to make the analytical report more objective.
The earlier techniques applied to food control were the spectroscopic ones (UV/VIS, IR) that make possible to move from chromatic tests to colorimetric ones, e.g. applied to the evaluation of "polyphenolic" fraction of wines and later, by means of IR, to discover the use of forbidden technologies to extra virgin olive oils (*trans* isomers).
The development of chromatographic techniques improved the possibility to verify purity and quality of foods: in the field of food lipids, the analysis of fatty acids composition and then of sterols carried out thanks to gas chromatography greatly improved the performances of fight against faked foods, while later to highlight the presence of extraneous sugars in grape musts or the presence of chemicals depending on age of foods as well as by the use of hard thermic treatment became possible thanks to the development of HPLC. Main benefits were for the control of dairy products and honeys.
An important improvement of gas chromatographic performances was obtained thanks to the use of capillary columns, but more recently, the development of multidimensional chromatography (GCxGC) further increases them, by increasing the "peak capacity".
Besides these separative techniques, the development of techniques of NMR and stable isotopes analysis had been applied to certify the geographical origin of several foods.
In this case, chemometric approach had been mandatory to manage an huge amount of data.

Self-assembly of molecules into functional nanostructures

Leonard Prins
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Self-assembly is used to describe the spontaneous aggregation of small molecules into well-defined large structures. The driving force for self-assembly is the occurrence of multiple noncovalent interactions that keep the small molecules in the aggregated state. Over the past decades self-assembly has emerged as *the* tool to make molecular structures of nanosized dimensions, which are typically difficult to prepare using traditional organic synthesis. Here, we present the self-assembly of nanosystems with a size and complexity of proteins and we discuss the application of these systems in the fields of molecular recognition, sensing and catalysis. Finally, we also give an example of dissipative self-assembly, which describe a situation in which formation of the self-assembled structure requires the consumption of chemical energy. It will be shown that dissipative self-assembly permits the formation of nanostructures that are functional only for a certain amount of time.

La Presidenza e il Consiglio Direttivo della Sezione FVG della SCI

ringraziano quanti hanno contribuito alla realizzazione del Convegno