Consiglio Nazionale delle Ricerche

Istituto di Chimica dei Composti Organometallici

Il giorno 8 Giugno 2023
alle ore 11.00

presso l'Aula 2 "Enrico Fermi" dell'Edificio F
Area della Ricerca CNR di Firenze
Via Madonna del Piano 10, Sesto Fiorentino (FI)

il **Dr. Matteo Bonomo**
Dipartimento di Chimica
Università di Torino

terrà il seguente seminario:

"Innovative and Sustainable Materials for Emerging Photovoltaic Devices"

Tutti gli interessati sono cordialmente invitati a partecipare.

Dr. Lorenzo Zani
Dr. Alessio Dessì
Ricercatori ICCOM

Dr. Claudio Sangregorio
Direttore ICCOM

Short Abstract:

Nowadays the quest for energy is of uttermost importance in both Italian and European framework: the 7th Sustainable Development Goal by the European Commission has the objective of producing clean and affordable energy by 2030. Aiming at this, photovoltaic technology is the most promising one, but a great effort is required to obtain devices having zero-emissions not only in the energy production phase, but also throughout the fabrication process. Therefore, materials of the future could be characterized not only by a high innovation degree, but they should also show sustainability features and be able to answer to specific market request (*e.g.* agrivoltaics, indoor and low-light irradiation, building integration). In the context of photovoltaics, Si-based devices have been recently flanked by so-called emerging photovoltaics, among which Dye-Sensitized Solar Cells (since 1991) and Perovskite Solar Cells (since 2009) play a major role. Throughout this seminar, the most interesting examples of sustainable materials for photovoltaic applications developed in our research group, will be discussed with a specific focus on their sustainability.

Biographic sketch:

Dr. Matteo Bonomo received his master degree in Chemistry (2015) and his Ph.D. in Chemical Science (2018) from "La Sapienza" University of Rome. Then, he moved to University of Turin where he was appointed as RTD-A in December 2020 and RTD-B in October 2022. Dr. Matteo Bonomo (MB)'s research activity is mainly devoted to the synthesis and characterization of the chemical and physical properties of inorganic and hybrid nanostructured materials to be applied in energy production and storage applications, with specific attention to the electronic, structural and superficial properties. More recently (since 2018), MB's research interests deal also with the synthesis and structural characterization of innovative molecular solvents (*e.g.* deep eutectic solvents) as green solvents and electrolytes for batteries and photovoltaic devices.

His research activity has led to the publication of > 70 scientific paper (> 1500 citations, H-index = 21) and to several awards, among which the *Junior Researcher Award "ENERCHEM 2020"* and *GIF Young Investigator Award 2022*. In 2021, he was named in the *World Ranking of Top 2% Scientists* by Stanford University.

Since 2022, Matteo is member of the board of the *Young Group* and the *Electrochemistry Division* of the Italian Society of Chemistry. In 2023, he was appointed as a member of *Struttura Operativa Permanente (SOP) Scientifica* (SCI).