CiQUS
Centro Singular de Investigación en Química Biolóxica e Materiais Moleculares

USC
UNIVERSIDADE DE SANTIAGO DE COMPOSTELA

INVITED LECTURE

12.15 h · Wednesday October 15th, 2025

Organic electronics and field-effect transistors: from fundamental aspects to applications

by Prof. Marta Mas-Torrent

Research Scientist
Molecular Electronics and Devices
Institut de Ciència de Materials de Barcelona · ICMAB-CSIC

Location: CiQUS | Seminar Room (Ground Floor)

Rede CIGUS
Centros de investigación do Sistema Universitario de Galicia

Cofinanciado por la Unión Europea

Fondos Europeos

INVITED LECTURE

12.15 h · Wednesday October 15th, 2025

CiQUS
Centro Singular de Investigación en Química Biolóxica e Materiais Moleculares

USC
UNIVERSIDADE DE SANTIAGO DE COMPOSTELA

Organic electronics and field-effect transistors: from fundamental aspects to applications

by Prof. Marta Mas-Torrent

The development of organic electronics has attracted significant research attention in recent years, leading to electronic devices with performance comparable to, or even exceeding, that of amorphous silicon. A key advantage of organic materials lies in their solution processability, enabling low-temperature, cost-effective, and flexible manufacturing suitable for large-area applications. High-throughput printing of organic small-molecule semiconductors (OSCs) for the fabrication of high-performance organic field-effect transistors (OFETs) is therefore of major technological interest. Nonetheless, challenges remain in achieving reproducibility and long-term stability. Here, I will provide an overview of fundamental concepts in organic electronics and OFETs, highlighting our efforts in controlling OSC thin-film structure to optimize device properties, and present examples of OFET-based sensor applications.

Marta Mas-Torrent carried out her PhD at the Institute of Materials Science of Barcelona (ICMAB-CSIC) and at the Davy-Faraday Lab. at The Royal Institution (Ri) of Great Britain. Building upon her chemistry background, she performed a postdoc at Physics Department of Delft University of Technology (TUDelft, The Netherlands). In December 2004 she gained a tenured Ramón y Cajal position and joined ICMAB-CSIC. In 2007 she achieved a permanent research position and in 2022 was promoted to Full Professor. She is currently leading the group of "Molecular Electronics and Devices" at ICMAB. Her work is focused on the design and preparation of new functional molecular materials for their application in organic/molecular electronic devices. She has participated in several national and European projects, including an ERC StG project. She is co-author of more than 200 publications and inventor of 7 patents.

More info: https://icmab.es/mnom/emolmat

email: mmas@icmab.es

Rede CIGUS
Centros de investigación do Sistema Universitario de Galicia

Cofinanciado por la Unión Europea

Fondos Europeos