

“Frontiers in Science” Seminar

Dr. Maria Caporali

National Research Council (CNR), Italy

Title : 2D Black Phosphorus: Synthesis,
Functionalization and Application in
Heterogenous Catalysis

Date & Time : March 12, 2025, 16:00~17:00

Venue : G101 Science Hall



Abstract: Ten years after its discovery, dated back in 2014, exfoliated black phosphorus (2D BP) praises successful applications in various fields thanks to its peculiar chemico-physical properties. Having an sp^3 hybridization and a formal presence of a lone pair on each P-atom, 2D BP turned out be an excellent material to anchor and stabilize metal nanoparticles and single atoms. Decorating the 2D BP surface with transition metals, new heterostructures were obtained, characterized by high-resolution techniques and tested as catalyst in hydrogenation reactions.



School of Science /
Graduate School of Science

Contact : Toshiyuki Moriuchi

Department of Chemistry

E-mail:moriuchi[at]omu.ac.jp

Lecture Series "*Frontiers in Science*"

Dr. Maria Caporali

National Research Council (CNR), Italy

Title : Low-Dimensionality Materials as Catalysts for Solar-Driven Hydrogen Production



Date & Time : March 18, 2025, 13:00 ~ 14:30

Venue : G310 Meeting Room

Lecture Contents: Nowadays great effort is devoted to the development of renewable energies, in particular to the solar-driven production of hydrogen, the energy vector of the future. This course covers the fundamental principles of heterogeneous photocatalysis and related applications in the hydrogen evolution reaction, including our recent studies.



School of Science /
Graduate School of Science

Contact : Toshiyuki Moriuchi

Department of Chemistry

E-mail:moriuchi[at]omu.ac.jp