Ca' Foscari University of Venice
Department of Molecular Sciences and Nanosystems

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Scientific Campus – Via Torino 155, 30170 Mestre (VE) - Italy
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Our Research

The Department of Molecular Science and Nanosystems (DSMN) is concerned with the fields of chemistry, physics, and physical chemistry. In recent years the Department has extended its academic reach to include biology, mathematics and engineering. This variety of areas of knowledge reflects the Department's strategic choice to develop interdisciplinary research connecting chemistry, materials science, engineering and biology. Activities at the Department involve basic and applied research and aim to explore the properties of molecules and nanomaterials from various perspectives, including physical ones (chemical, physical, physicochemical) and the ones that are related to their interaction with biological systems. Particular attention is paid to sustainability and respect for the environment.

Civic Engagement

The Department has developed and continues to develop fruitful collaborations with local and national companies and non-university research institutes. Such collaborations aim to shorten the gap between the academic world and the world of work by consolidating partnerships and creating new ones. This commitment has allowed the Department to register various national and international patents, as well as to activate 5 university spin-offs.

Teaching

We offer three Bachelor's Degree Programmes:

- **Sustainable Chemistry and Technologies**, which offers two curricula: Chemical Science and Technologies, and Science and Technologies of Bio and Nanomaterials. Our university has included the study of chemistry for almost fifty years. With this course, students learn the basics of the architecture of matter and can therefore understand and foresee its composition, structure, transformation and behaviour at a molecular level. It focuses on sustainable development in various fields, such as industrial technologies, nanotechnologies, bio and nanomaterials
- **Science and Technologies for Cultural Heritage**, which allows students to develop multidisciplinary knowledge regarding the properties and characteristics of materials used in cultural heritage. The course focuses on the diagnostics of art material and on the study of what causes their degradation. At the same time, it teaches theoretical and applied methods to safeguard, preserve and enhance the value of cultural heritage
- **Engineering Physics**, which aims to create a class of modern, cosmopolitan engineers who can tackle issues relating to advanced technologies and

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energy, materials, IT, biomedicine or "quantum computing".

The Department also offers three Master's Degree Programmes:

- **Sustainable Chemistry and Technologies**, which offers in-depth knowledge of theoretical and experimental chemistry and is the continuation of the Bachelor's Degree Programme by the same name. The course aims to train graduate students for employment in the main fields of chemistry, with an approach oriented towards the Green Transition. The course offers three curricula, one of which is in English (Chemistry, Industrial Chemistry, Biomolecular Chemistry)
- **Science and Technology of Bio and Nanomaterials**, which is entirely in English, enables students to acquire knowledge of chemistry, physics and biology with theoretical and practical lessons regarding the preparation, characterisation and application of nano and biomaterials. Graduates can find employment in positions of high responsibility regarding the management of complex processes, such as the planning and production of materials (including biological ones)
- **Engineering Physics**, which is a recent course, allows students to develop knowledge of modern physics, IT engineering and electronic engineering, applied to quantum technologies and complex systems in physical, biological and social fields. The course is articulated in three innovative curricula: Quantum Science and Technology, Physics of the Brain e Physics of Finance and Economics.

Finally, our Department offers two PhD Programmes, one in Chemistry, and one in Science and Technology of Bio and Nanomaterials — in partnership with the Kyoto Institute of Technology, Japan.

Professor Maurizio Selva
Director of the Department of Molecular Sciences and Nanosystems