

**Department of Chemistry
University of Turin**





The Department



Establishment

The new Department was established in **2012** as a result of the recent innovation of the Italian University system.



Staff

The Department's STAFF includes about **250** professors, researchers, technicians and administrative employees. The doctorate students and post-doc researchers are about one half of the staff.

Students

Teaching activities at the Department of Chemistry involve about **2.000** students

Department of Chemistry & NIS

Department of Chemistry

Funded in 1894

- **120** permanent staff Professors, researchers technicians and administratives
- **250** members including PhD, Postdoc and fellows

Teaching (Bachelor):

- Chemistry & Chemical Technologies
- Material Science & Technology

Teaching (Master):

- Advanced Chemical Methods
- Environmental Chemistry
- Clinical, Forensic Chemistry and Doping control
- Industrial Chemistry
- Material Science

Phd School: Chemical and Material Science

NIS: Nanostructured Interfaces and Surfaces Center of excellence

Funded in 2003

70 researchers Chemistry, Physics, Pharmacy, Biology & Earth Science, initially funded by MIUR





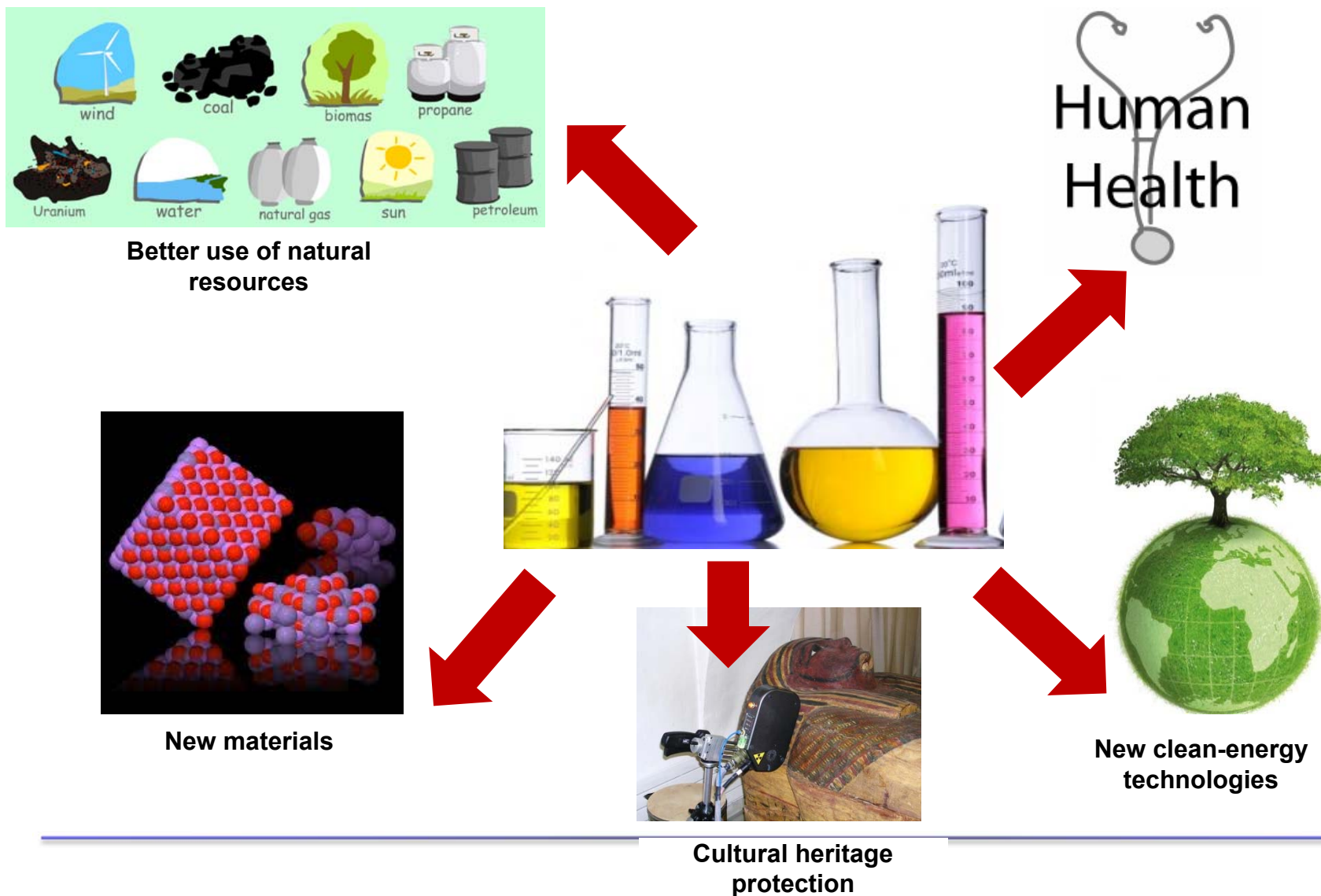
Our vision



- CHEMISTRY as a **CONNECTING DISCIPLINE**
- CHEMISTRY as a **GLOBAL SCIENCE** that transcends traditional boundaries between disciplines and industrial sectors
- CHEMISTRY as **PROMOTER OF THE TRANSITION** from linear to circular economy, making our city a more competitive and sustainable place to live
- CHEMISTRY as a discipline with high-valued **ECONOMIC BENEFITS** also beyond the chemical industry (e.g. increasing manufacturing productivity and products quality and safety, reducing industrial waste etc.)
- CHEMISTRY as a **KEY FACTOR** that transform our everyday **LIVES FOR THE BETTER** (e.g. human health, new clean-energy technologies etc.)

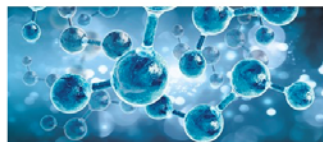


Our vision



Research at Department of Chemistry

<https://www.chimica-ricerca.unito.it/index.php/en>



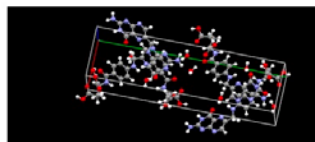
CHEMISTRY AND HEALTH

People's health and quality of life are the basis of an active and dynamic society. Knowledge of human metabolism, as well as development of new medicines, innovative...



ADVANCED MATERIALS

Our everyday life is strongly influenced by materials: transportation, recreation, clothing, health, food production, security. To discover, produce and characterise new materials...



COMPUTATIONAL CHEMISTRY

Using computational clusters and powerful programs, computational chemists can predict the motions, reactivity, aggregation and formation of complex molecules up to predict their...



CHEMISTRY AND ENVIRONMENT

Chemistry plays a central role not only in describing and understanding environmental processes, but also in allowing the achievement of a correct balance between human activities...



GREEN CHEMISTRY

Chemistry can and must provide knowledge and technologies for the sustainable management of resources and lifestyles. With a reversal of perspective, as a voracious consumer of raw...



CULTURAL HERITAGE

The study of the archaeological, historical and artistic heritage, as all the cross-disciplinary researches, generate a huge added value, both cultural and socio-economics. This is...



CHEMISTRY AND FOOD

Today food paradigmatically represents the complexity and interconnectedness of knowledges where themes such as health, education, culture and enhancing the excellence of local...



ENERGY

Clean, renewable, low cost and sustainable energy distribution to people all over the world is nowadays one of the most demanding challenges to mankind.

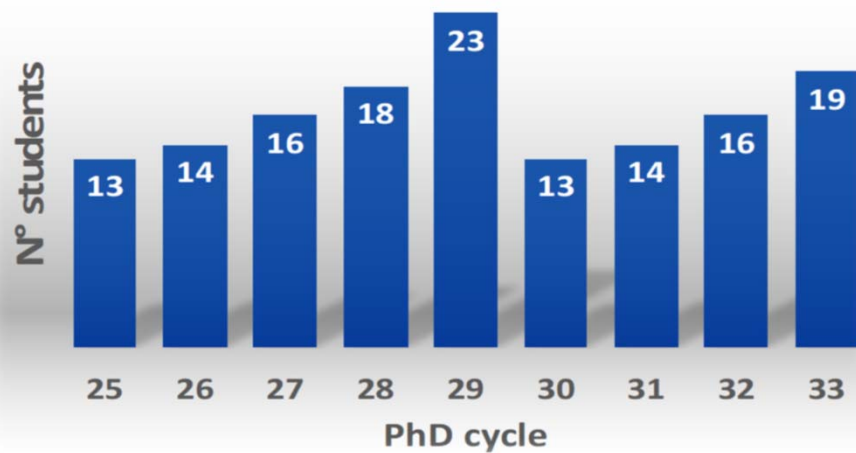
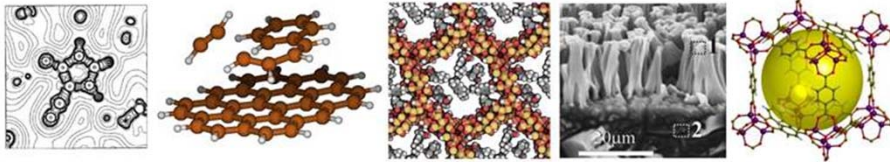


CHEMISTRY AND EDUCATION

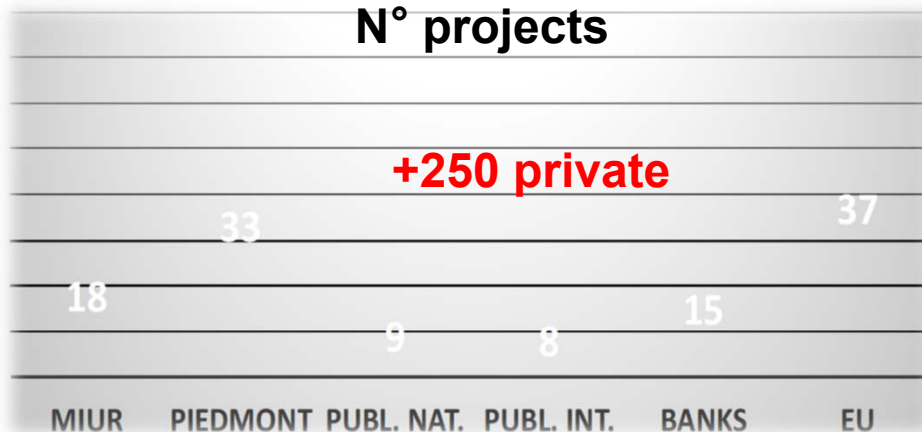
Scientific skills are fundamental for the culture itself, the self-care, sight on issues of great social, environmental and ethical relevance for all scientists, stakeholders and...

Department of Chemistry performance

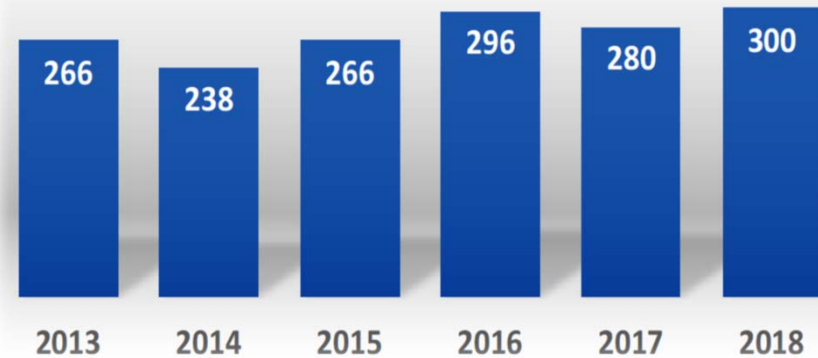
PhD School of Chemical and Material Science



N° projects



Total # publications (Article & review)



Impact factor



Rised funds

Private Inter.	600 k€
EU	12 M€



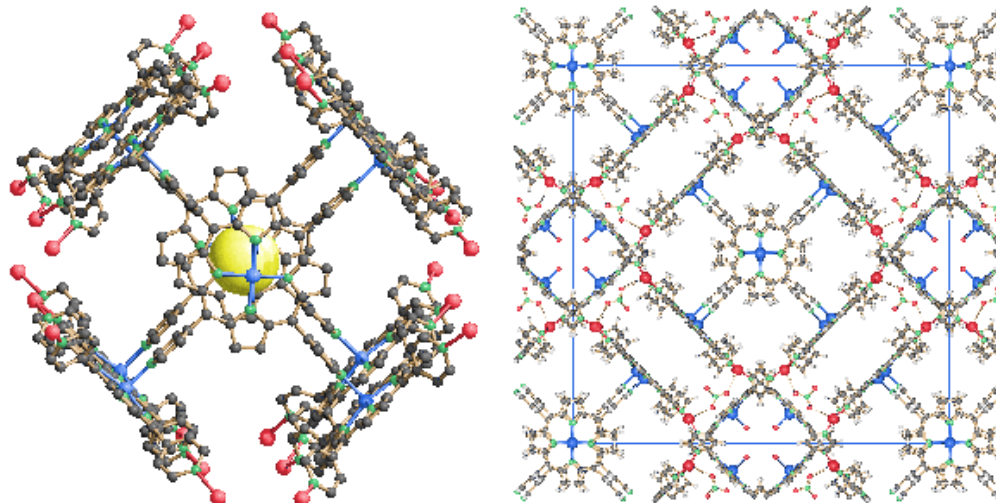
Research activities



Research funding: a total budget of around **8M€ per year** is managed by the Department (2017). Main funding sources are the private sector and EU.



Research activities



Main Research outputs:

- **NEW KNOWLEDGE** → high-ranking scientific publications
- **COMMERCIALIZING AND LICENSING TECHNOLOGIES** → strong and raising connection with international and local **INDUSTRIAL PARTNERS** as well as the participation in **HIGH-TECH OPEN LABS**



Industrial collaborations



The collaboration with industries in **2017** has reached an overall budget of about **2 M€**.



3 Spin-offs

More than 50 ongoing contracts

26 patent applications between 2010-2015 (4 patents per year on average)



Main partners

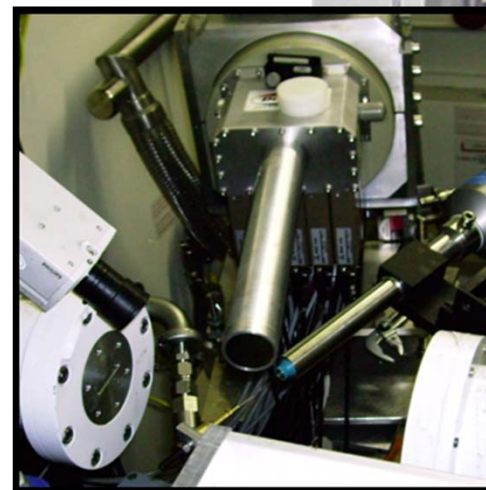
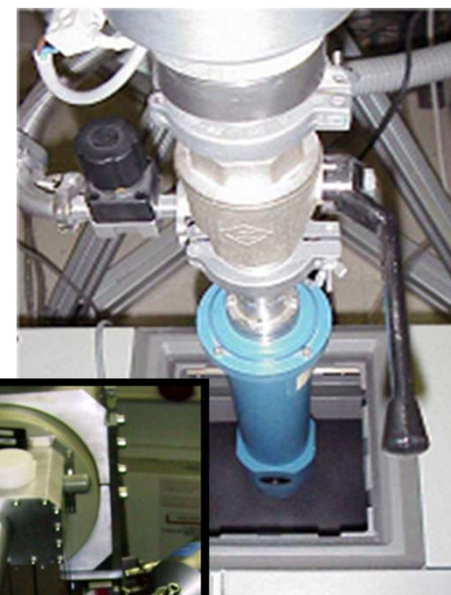




The Department of Chemistry and individual research groups collectively maintain a **MULTI-MILLION EUROS INVENTORY OF STATE-OF-THE-ART INSTRUMENTATION**

- Synthesis Facilities
- Vibrational and Electronic Spectroscopies
- Magnetic Resonance Spectroscopies
- X-ray diffraction
- Chromatography
- Mass spectroscopy
- Computational Facilities
- Teaching Laboratory Facilities

Recent joint acquisition (2016) of two
600 MHz NMR spectrometers

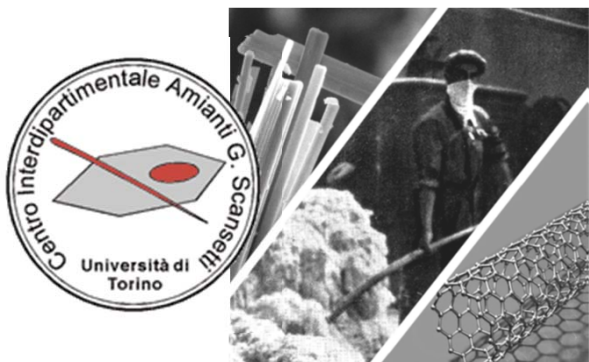




Interdip. centres



- **NIS - Nanostructured Interfaces and Surfaces Center of Excellence**



- **The Scansetti Center - Interdepartmental Center for the Study of Asbestos and Other Toxic Particulates**

- **CRISDI - Interdepartmental Center of Diffractometric Crystallography**





Interdip. centres



- **C3S - CENTRO DI COMPETENZA SUL CALCOLO SCIENTIFICO**



ICxT - Centro Interdipartimentale di
innovazione dell'Università di Torino



Technological offer



For Cultural Heritage

For Life Sciences

For Agrochemical and Food



For Environment

For Energy

**For Advanced Materials and
Nanomaterials**



Teaching activities



Designed:

- to provide **basic education** in the plurality of chemical disciplines
- according to the **highest international standards**
- taking into account **regional societal and industrial needs** identified by local stakeholders
- to allow the **graduates employment in a variety of industries and services**



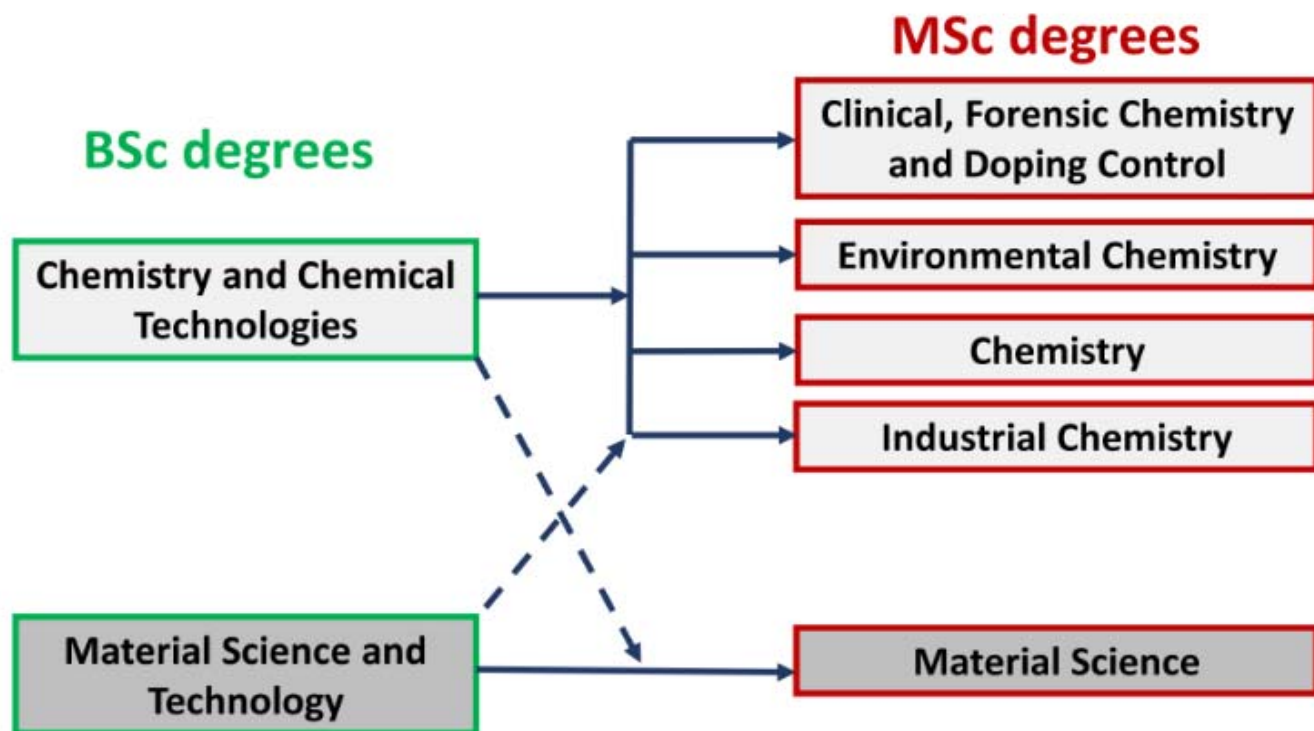
Teaching activities



- **Bachelor degrees:** 2 B.A. which provide students with the basic knowledge in inorganic, organic, physical, analytical, industrial, materials and biological chemistry from a theoretical to a practical point of view. The CHEMICAL IMPLICATIONS on the environment, the sustainable development, the “green chemistry” and the legislations related to chemical substances are also studied.
- **Master degrees:** 4 specialized M.A. in both chemical and materials sciences with the aim of providing students with an advanced background on designing innovative scientific and technological solutions in a variety of chemical products and processes + 1 educational Erasmus-Mundus program for the use of large scale facilities in Materials Science
- **PhD courses** to train creative and competent scientists in the field of chemical sciences and technologies, through the ANALYSIS AND STUDY OF SCIENTIFICALLY RELEVANT PROBLEMS both in fundamental and applied science.



Education degrees @ Department of Chemistry (2018)



European Credit Transfer and Accumulation System

	Lectures	Class Workshops	Laboratory	Internship/ Thesis
1 ECTS	8 h	12 h	16 h	25 h



Contacts



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LUGI CASALE
CHE GIORIOSAMENTE AFFERMO
COL SUO PROCESSO INDUSTRIALE DI SINTESE DELL'AMMONTAGLIA
IL NOME D'ITALIA
PRESSO TUTTE LE NAZIONI DEL MONDO
E L'ALLIEVO DI QUESTO ISTITUTO
N. 15321 — 1912-1927

