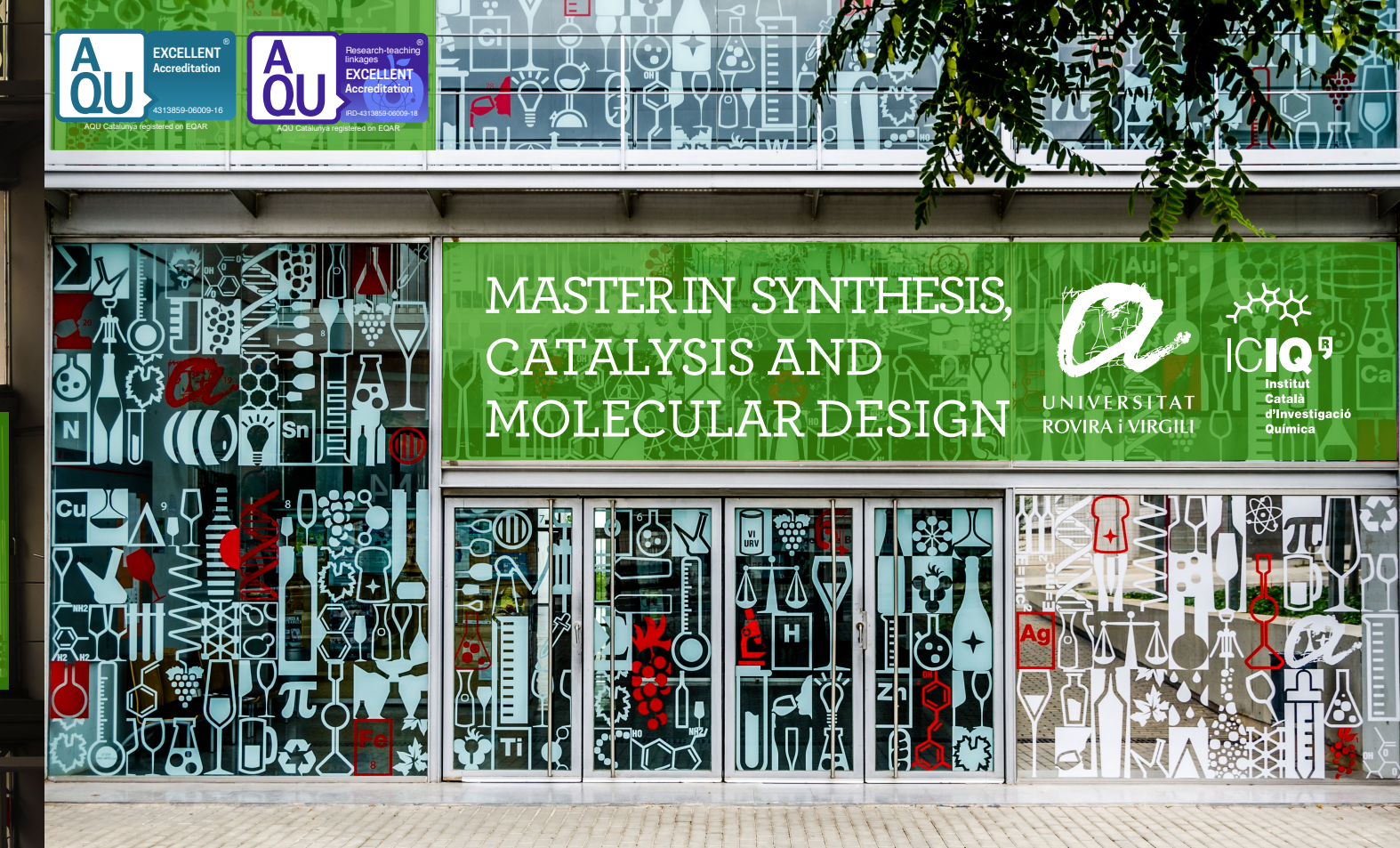


*“Master organized by URV and ICIQ, two prestigious research institutions”*





## Why this master?

The Master “Synthesis, Catalysis and Molecular Design” is organized by the Faculty of Chemistry of Universitat Rovira i Virgili (URV), and the Institut de Chemical Research of Catalonia (ICIQ), both institutions are in the same Campus.

### General objectives:

-To provide a high level training in the fields of synthesis, catalysis and molecular design that enable the graduated to carry out a PhD and/or pursue a scientific or academic career.

-To provide the graduates a capacity of innovation and the appropriate aptitudes for developing synthesis of compounds and sustainable chemical processes.

### The Master provides:

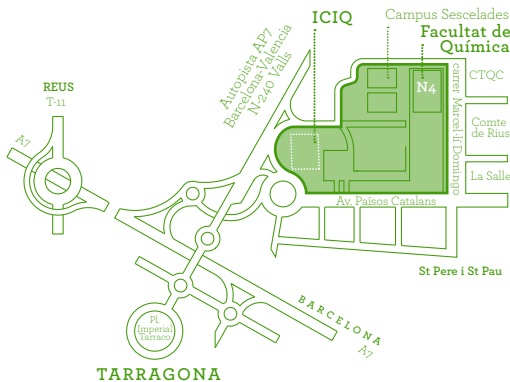
-Training in the use of synthetic methodologies and in the design of synthetic routes for obtaining new products, with the help of computational tools.

-Expertise the use of modern techniques of structural characterization of molecular compounds, surfaces and solids.

-Tools for understanding the principles and applications of advanced catalysis.

-Enable the design of chemical processes at laboratory or industrial scale according to the standard of sustainability and environmental compatibility.

## Where we are?



## Tarragona

Tarragona is the oldest Spanish city with very well preserved roman ruins, declared by UNESCO as a World Heritage site

## The environment of Tarragona

The most important Petrochemical Pole in South Europe Research cluster in Chemistry (CTQC, ICIQ, URV, IREC)

## Communications

Campus is at:

- 10 minutes from Tarragona center (bus 41 and 54)
- 10 km from the neighbouring town of Reus (connected by bus Express)
- Excellent connexions by fast train and motorway with Barcelona, Valencia, Zaragoza, and Madrid.

## The Master in “Synthesis, Catalysis and Molecular Design”

Places offered per year: 30

<http://www.quimica.urv.es/mscmd/index.php>

Language: English

### Oriented to :

- Graduated studies in: chemistry, pharmacy, chemical engineering, biochemistry.
- Undergraduated students in the last year of their studies can already do the prescription

## Curriculum

### Compulsory subject (42 credits)

- Structural Determination Techniques
- Introduction to computational chemistry
- Multidisciplinary Seminars
- Master project

ECTS

6

6

3

27

### Optional (18 credits, 4,5 crd each)

- Methods of synthesis and synthetic analysis
- Asymmetric Synthesis
- Organometallic chemistry and homogeneous catalysis
- Catalytic materials and heterogeneous catalysis
- Characterization of solids and surfaces
- Theoretical methods for electronic structure determination
- Computational modelization in catalysis and materials science
- Sustainable Catalysis, a catalytic approach
- Nanocatalysis
- Supramolecular chemistry
- Nanostructured polymeric materials

Possible specializations

Org. Synth. | Catalysis | Theoretical Chem

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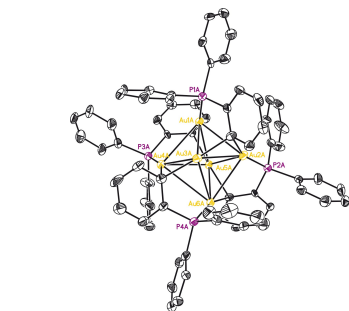
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## Master Project

There is the possibility to join a research group in the Faculty of Chemistry or ICIQ, or to develop the project in the I+D department of a company.



## Schedule

From October to July (For more information see web page: <http://www.quimica.urv.es/mscmd/schedule.php>)

## Scholarships

URV and ICIQ offers several scholarship for the master students. For additional information consult the web: <http://www.quimica.urv.es/mscmd/scholarship.php>



## Expertise and training for:

- I+D activities in chemical companies
- Production plants
- Environmental solutions

### Other services offered by the University

· Sports

· Professional advice

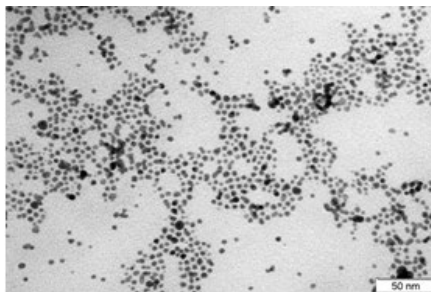
· Accommodation office

· Employment office

Chemistry study the structure of matter and

its processes. A science to understand and

improve the environment



## Career and opportunities

The master is primarily focused on the research, which supports a training for a career in the productive sector. The career opportunities are thus:

· Incorporating a doctorate and completion of a dissertation.

· Access to leading productive sectors that have interdisciplinary research groups. The spectrum is

broad, since most industrial processes require a catalyst. However, the sectors with the most involved

are fine chemicals such as synthesis of intermediates, chemical pharmaceutical, agrochemical,

phytosanitary and also intelligent materials and polymer synthesis. The training acquired enables

graduates to design and develop new products and processes in the field of general chemical company.

## Doctorate

Possibility to follow the PhD in a group of URV or ICIQ:

[http://www.urv.cat/estudis/doctorat/tecn\\_quimica/en\\_ciencia\\_tecnologia\\_quimica.html](http://www.urv.cat/estudis/doctorat/tecn_quimica/en_ciencia_tecnologia_quimica.html)

