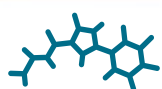




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No. 10



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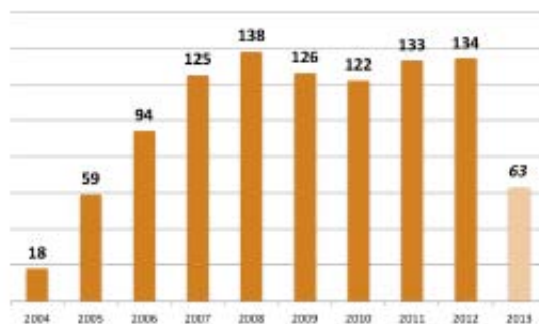
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1.000 papers (so far)

In less than 10 years ICIQ has published more than 1000 high quality papers. [‘Control of Remote Stereochemistry in the Synthesis of Spirocyclic Oxindoles: Vinylogous Organocascade Catalysis’](#) published by Paolo Melchiorre’s research group has become paper number 1000 published at the Institute of Chemical Research of Catalonia.

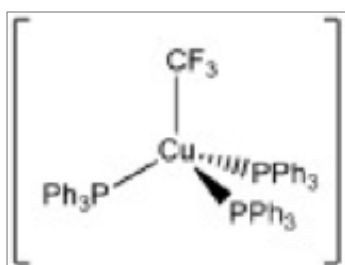
ICIQ was created in 2004 with initially 9 research groups. Since then, our research institute has experienced a continuous growth and today ICIQ counts

with 19 group leaders who manage excellent teams of PhD students, Post-docs and technicians. Together with Esteve and Henkel joint units, Crysforma and CSOL, ICIQ develops high quality research and innovation, as proven by its Hirsch index of 75.



Shoulder to shoulder with industry

The company STREM Chemicals Inc. is now selling tris(triphenylphosphine)(trifluoromethyl)copper(I) ([Catalog Number 29-2955](#)), a reagent useful in the fields of medicinal chemistry (drug discovery) and preparation of new agrochemical compounds. The product is obtained through a process developed at ICIQ by Vladimir Grushin, which has been protected by a US patent application by ICIQ. After some studies conducted at [CSOL](#) to ensure scalability, the product can now be purchased through [STREM Chemicals Inc.](#)



New ICIQ's Scientific Advisory Board members

Prof. Pedro J. Pérez, Universidad de Huelva, and Prof. Jesús Jiménez-Barbero, CSIC, have been appointed members of ICIQ's Scientific Advisory Board. They will replace Profs. Luis Oro and Ernesto Carmona next year.



Prof. Pérez's research is focused on the development of transition metals compounds to be used as catalysts to convert low reactive substrates, mainly hydrocarbons, into other substrates with high added value.



Prof. Jiménez-Barbero's group works on the development of general methodological aspects of the NMR techniques and, particularly, in their applications to the study of the conformation and dynamics of the molecular recognition processes.

[ICIQ's Scientific Advisory Board](#)

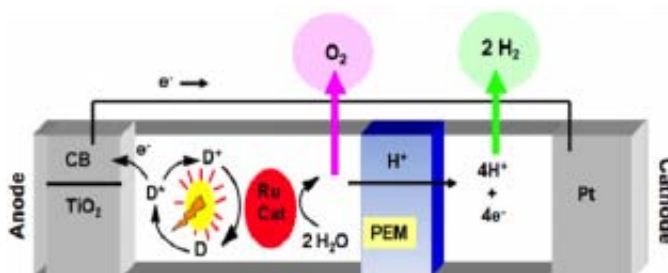
A photoelectrochemical cell for the generation of solar fuels

Antoni Llobet leads this project funded by Obra Social "La Caixa", focused on the design of a photoelectrochemical cell able to transform solar energy into electricity throughout the decomposition of water into oxygen and hydrogen.

This cell is a bio-inspired model of the photosynthetic process that take place in green plants, and it is comprised by a device that contains light harvesting molecules deposited on the surface of a semiconductor material, a catalyst or substance able to accelerate the water decomposition reaction into oxygen and hydrogen and a cathode or electrode where hydrogen is produced. The hydrogen produced in this cell could be immediately used to generate heat or electricity in a clean and sustainable process.

The team has already optimise each of the individual processes required for the decomposition of water. Now, the challenge is to make them work harmoniously within the cell to obtain electricity from solar energy throughout this sustainable and economically viable process.

i [Llobet's research group](#)



Ruben Martín gets consolidation



After five years as a Tenure Track group leader, Martín has consolidated his position as Principal Investigator at ICIQ. Several members of ICIQ's Scientific Committee evaluated his work and unanimously approved his consolidation. *"I would like to share my happiness with my family and previous mentors and in particular, with my research group,*

both past and present. They have conducted an incredible job and I am very proud of them." - says Ruben Martín. His research deals with the activation of relatively inert molecules and chemical bonds and he's got an ERC Grant.

i [Dr. Martín's research group](#)

Journal Covers



Harnessing the open-circuit voltage via a new series of Ru(II) sensitizers bearing (iso-)quinolinyl pyrazolate ancillaries.

i [Access to the abstract](#)

Energy Environ. Sci. **2013**, 6, 859-870
K.-L. Wu, W.-P. Ku, J. N. Clifford, E. Palomares, S.-T. Ho, Y. Chi, S.-H. Liu, P.-T. Chou, M. K. Nazeeruddin, M. Grätzel



Catalytic cross-coupling of diazo compounds with coinage metal-based catalysts: an experimental and theoretical study.

i [Access to the abstract](#)

Dalton Trans., **2013**, 42, 4132-4138
Ivan Rivilla, W. M. C. Sameera, Eleuterio Alvarez, M. Mar Díaz-Requejo, Feliu Maseras and Pedro J. Pérez

The summer connection

Two events take place at ICIQ every summer: a summer school and an internship programme addressed to undergraduate students.



This year's ICIQ Summer School (June 30th-July 4th), organized in collaboration with UniCat, the German Cluster of Excellence in Catalysis has counted with 16 top level speakers and with the attendance of more than one hundred predoctoral and postdoctoral students.

ICIQ Summer Fellowships Programme, funded by Obra Social "La Caixa", offers undergraduate chemistry students a three-month paid internship in one of ICIQ's research groups.

Tachmajal Corrales is a MIT undergraduate doing one of these internships at Urakawa's group. "I'm currently working with heterogeneous metal catalysts for electrolytic water-splitting. The currently most used catalysts are based on precious metals such as platinum, ruthenium or iridium that have shown great performances, but their low abundance on Earth's crust and high price make them unsustainable for future use. We are investigating alternatives to replace them" she explains.

Kid's lab: World Water Day celebration

March 22nd was the World Water Day, and to commemorate it, more than a hundred children came to ICIQ to perform some experiments organized by the multinational BASF with the collaboration of ICIQ.

The aim of this event was to raise awareness among children about the importance of water and its correct use and to explain the role chemistry plays in the purification and storage of drinking water.



Tach, a summer fellow, at Urakawa's lab

"I am very impressed by the great quality of the facilities and research support. Also by the outreach initiatives like summer school, internships, student exchange among others, as I think there's a lot of value in sharing knowledge and science. But the highlight for me has been the friendly environment and how people are always willing to help and get involved. I have very much enjoyed this past month at ICIQ and I think it's a great place for research" she adds.

About her plans after finishing her three-month stay at ICIQ, Tach says "I will go back to Boston to continue my undergraduate studies in Chemistry and Mechanical Engineering".

[Web ICIQ-UniCat Summer School](#)

[ICIQ Summer Fellowships](#)

Science Café

Andrew Chapman, talked about "Chemistry and Coffee" in a sweet evening at Pachito Lounge, in Tarragona. We all enjoyed his presentation and of course, we were thrilled with the coffee ice-cream made with liquid nitrogen.



Face to Face Interviews



Lee Cronin

Gardiner Professor of Chemistry at the University of Glasgow (UK).

He works on nanoscience and chemical complexity and he is an interdisciplinary enthusiast. His main aim is to create life in the lab and he investigates how chemistry

can revolutionise modern technology. One of his most impressive projects is to create a 3D printer for molecules.

■ **When did you decide to become a scientist and why?**

I never really decided, I always thought myself as a scientist since I was 7. I was always doing experiments. Chemistry for me was natural, it was never a question, it just was.

■ **How did you go from coordination chemistry, self-assembly, supramolecular chemistry to printing your own reactors?**

Actually, I don't know. I like to go to lots of different conferences and talk to people about science in new ways. I was invited to an architectural conference and I got talking to some architects. A guy who was doing 3D printing of plastic objects was there, so I thought I could start printing my own chemistry kits. Then is where it started: I had the idea, I organized a workshop in my lab and we built our own printer.

■ **From your point of view, how important is for an academic to have an entrepreneurial spirit?**

The big aim of my research is to try and discover a new type of biology. In that process we have to develop our own technology. I figured that if I use taxpayer money to develop new technologies to help answer a big science question, then there is an enormous potential to use those technologies. The entrepreneurial spirit for me is not about making money but it's about three things: I want to be able to do better science with my technologies because those technologies help me to do new science and if I can get other people involved to use those technologies to do their own science, that is very helpful. I also want to make sure what I'm doing is relevant, I want to discover the origin of life or build new biology in the lab.

The entrepreneurial spirit brings me back to reality and allows me to close a circle: there is one half of me that goes crazy and come up with crazy things and the other half wants to make sure that what we do is repeatable and other people can copy it.

Top scientists who inspired me are all entrepreneurs. It is not about making money, it is more about having new ideas. Having ideas allows us to find something else about the universe.



Fernando P. Cossío

President of the Executive Committee of Ikerbasque, the Basque foundation for science, professor of Organic Chemistry at the University of the Basque Country and a co-founder of the company Ikerchem.

In his research, he combines theoretical and experimental organic chemistry to investigate the origins of selectivity in chemical reactions.

He came to ICIQ to talk about 'Five-membered Rings in Organometallic Catalysis and Offspring Organocatalysis' and we took our chance to talk to him in our Face to Face.

■ **When did you decide to become a scientist and why?**

I've always been very interested in science and in arts. Chemistry is a science that creates its own 'objects'. It combines creativity with the Universe description as we know it.

Later on, being already a chemistry grad, I watched a TV series by Carl Sagan, Cosmos, and I decided I wanted to be a researcher.

■ **What do you like the most about your job?**

I love finding out new and unexpected things. In that sense, I am not disappointed with the creative side of scientific research. In my view, scientific research is as creative as arts.

■ **Which ones are the major highlights in your scientific career so far?**

I think we have gathered important and new knowledge on cycloaddition reactions and aromaticity. We have also been able to transfer all that knowledge into the synthesis of new molecules with applications in medicinal chemistry.

 [You can find the full interviews at ICIQ-Interactions](#)

A park with Chemistry

On Saturday June 15th, we participated in the Festa de la Ciència i Tecnologia f(c+t) at Parc de la Ciutadella in Barcelona. Lorena Tomás and Paula Álvarez set up a workshop for kids with different experiments showing different chemical reactions. In fact, our workshop was entitled 'React!'. The children had the chance to make their own bouncy ball, to experience the eruption of the ICIQ volcano and to become 'chemical painters' painting on milk.



Paula Álvarez and Lorena Tomás performing some experiments

[More info](#)

2013 ICIQ's Ping Pong Championship Finals

Congratulations to everyone!

ICIQ Champions 2013:

Max García and Vanessa Rodrigo.

Runners-up: Jon Vilasau and Lorena Tomás.



News in brief

Phd theses defences: Drs. Núria Huguet, Daniele Anselmo, Areli Flores, James Ryan, Margherita Bolognesi, Giovanni Salassa, José Luis Núñez and Iván Castelló, pre-doctoral students at ICIQ have defended their PhD thesis. They were all awarded the highest honors for their work.

New horizons: Margot Segura, ICIQ's administrative manager left ICIQ on late April. Lluís Solà took command of the Management Area.



Group picture after the farewell party to Margot

Alex Shafir: The Real Sociedad Española de Química (RSEQ) has nominated Alexandr Shafir, ICIQ group leader, to represent Spain in the next Young Investigator Workshop (YIW) that will be held in Marseille on July 4-6. Alexandr Shafir will present his recent work on the arylation reactions that occur via the dehydrogenative C-C coupling.

[More info: Shafir's Research Group](#)

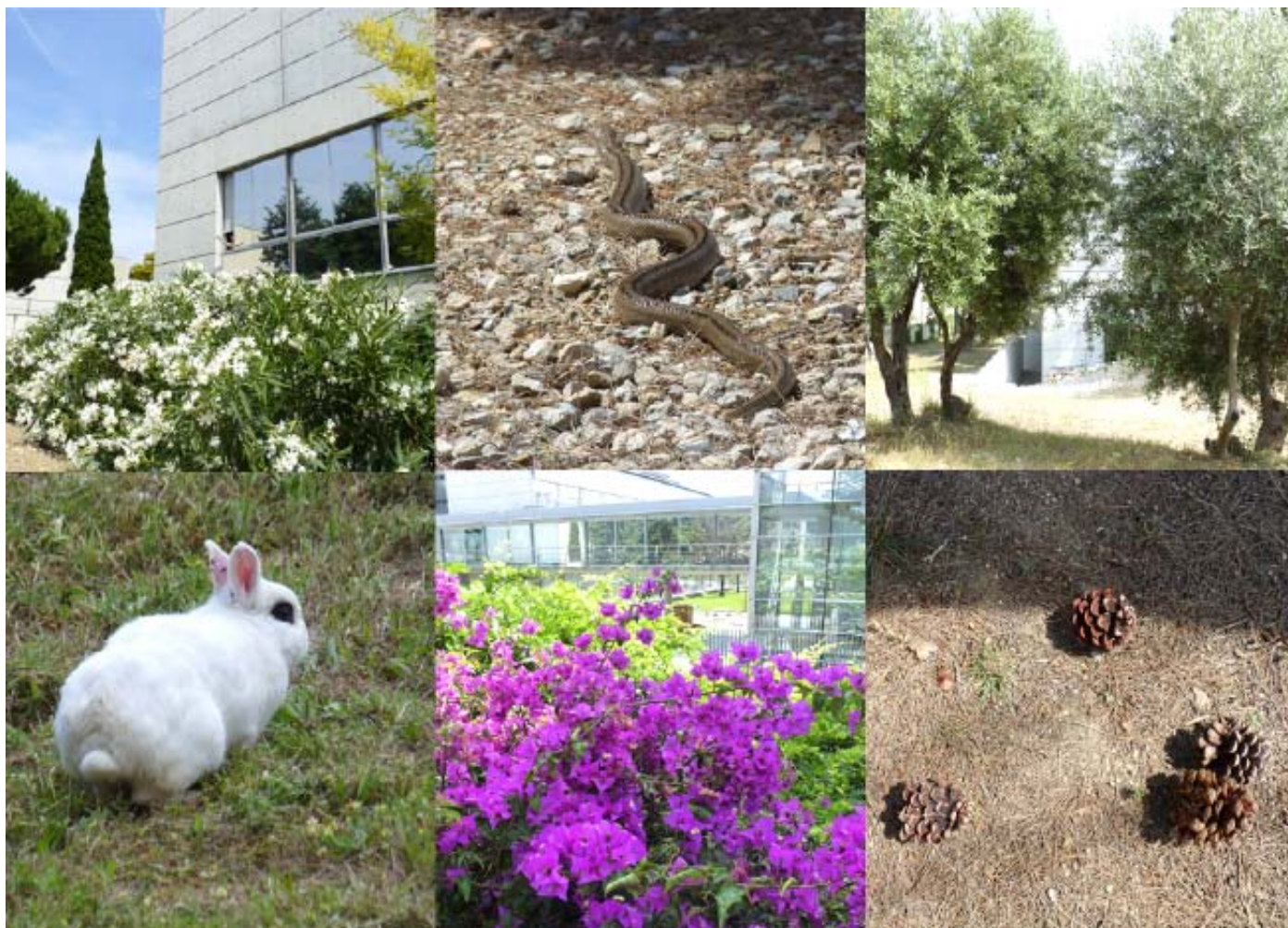
[More info: Young Investigator Workshop](#)

An ICIQ's tale: La Laura i el Joan is a series of children's books which tackle different science fields. One of these books is about organic chemistry and takes ICIQ as a background.



[More info: Download the book](#)

ICIQ's Backyard



Agenda

Institute of Chemical Research of Catalonia (ICIQ)
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ICIQ Seminar Program (July to December)

All seminars at 12p.m. in the ICIQ Auditorium

July 30th	Prof. Satoshi Minakata Graduate School of Engineering, Osaka	Oct. 25th	Prof. Meike Niggemann RWTH Aachen University
Sept. 20th	Prof. Yujiro Hayashi Tokyo University of Science	Nov. 8th	Prof. Mariola Tortosa Universidad Autónoma de Madrid
Sept. 27th	Prof. Henning Hopf Institut für Organische Chemie Technische Universität Braunschweig	Nov. 15th	Prof. Virginie Vidal L'École Nationale Supérieure de Chimie de Paris
Oct. 3rd	Prof. Keiji Maruoka Graduate School of Science, Kyoto University	Nov. 22nd	Prof. Larry Falvello Universidad de Zaragoza
Oct. 4th	Prof. Stephan Bachmann F. Hoffman - La Roche AG, Switzerland	Nov. 29th	Prof. Davide Bonifazi Université de Namur, Belgium
Oct. 18th	Prof. Thibault Cantat CEA - Saclay, France	Dec. 4th	Prof. Takashi Ooi Nagoya University, Japan
		Dec. 13th	Prof. Bruno Chaudret Institut National Des Sciences Appliquées De Toulouse