

**ICIQ** <sup>R</sup>

Institut  
Català  
d'Investigació  
Química



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## Henkel-ICIQ Joint Unit: In motion

On 14th June, Mr. Josep Huguet, responsible for the Department of Innovation, Universities and Enterprise, visited the Institute of Chemical Research of Catalonia (ICIQ) for the launching of the Henkel-ICIQ Joint Unit.

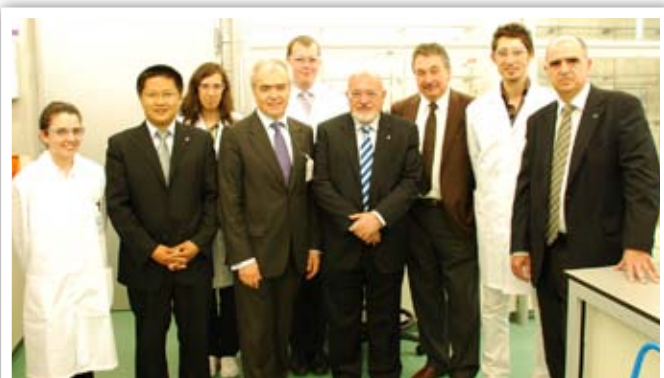
The Henkel-ICIQ Joint Unit is a collaborative research project between the global market leader in adhesives, sealants and surface treatment, Henkel, and the ICIQ. This collaboration aims to develop high performance adhesives through novel trigger or cure reactions, with an experimental and computational approach, and it involves up to ten post-doctoral researchers. Moreover, the Unit counts on the scientific advising of two ICIQ group leaders, Profs. Vladimir Grushin and Kilian Muñiz.

During the event, Dr. Ramon Bacardit, Corporate Vice-president of Henkel Adhesives R&D, highlighted that Henkel is strongly committed with innovation and that this collaboration with ICIQ is a key point to accomplish the challenges that our market demands. On his behalf, *conseller* Huguet stressed that the Henkel-ICIQ Joint Unit is an example of the excellent research carried out

in institutes such as ICIQ that clearly contributes to the competitiveness of the chemical industry in Catalonia.

One of the main aspects of ICIQ is knowledge and technology transfer to chemical and pharmaceutical industry. This Unit together with Esteve-ICIQ Joint Unit, created in 2009, and the technological platform Crysforma are the result of ICIQ's strategy to strengthen the competitiveness of the chemical and pharmaceutical industry through innovation and technological improvement. In fact, it is expected that a new catalyst technological development unit will be launched in October 2010.

**i** [More info: Henkel-ICIQ Joint Unit](#)



*The Henkel-ICIQ team with Conseller Huguet, Dr. Pericàs, ICIQ Director, and Dr. Grau, URV vice-chancellor.*

## Dr. Núria López, ERC Grant holder

Dr. Núria López, ICIQ group leader, has been awarded a European Research Council Starting Grant for her project "*Biomass to Chemicals: Catalysis design from first principles for a sustainable chemical industry*". This project has got €1.5 M of funding for a period of 5 years.

This is the third ERC Grant given to an ICIQ group leader, since Prof. Piet van Leeuwen and Prof. Emilio Palomares hold, respectively, an ERC Advanced Grant (2009) and an ERC Starting Grant (2010), as published on ICIQ Newsletter number 3 (March 2010).

The fact that ICIQ hosts two ERC Starting Grant holders reflects the high potential and quality of the work carried out by young up-and-coming research leaders at ICIQ.

**i** [More info: Dr. López Research Group](#)



*Dr. Núria López, ICIQ group leader*

## Prof. Echavarren and Martín, awarded by the RSEQ

The RSEQ (Spanish Royal Society of Chemistry), decided on its meeting on May 14th to give the RSEQ 2010 Medal to Prof. Antonio M. Echavarren and the RSEQ-Sigma-Aldrich Young Researchers Award to Dr. Rubén Martín.

The research carried out by Prof. Echavarren centers on the development of new reactions based on the use of transition metal complexes as catalysts, and in the application of these reactions for the synthesis of complex, biologically active natural products.

The major goal of Dr. Martín is to provide solutions to relevant and challenging synthetic problems, mainly

focused on the metal-catalyzed, selective activation of relatively inert entities of great significance, such as CO<sub>2</sub>, C-H bonds, C-C bonds and C-O bonds.

**i** [More info: www.rseq.org](http://www.rseq.org)



Prof. Antonio M. Echavarren and Dr. Rubén Martín, ICIQ group leaders

## Prof. Emilio Palomares receives the INNOVA award

On the second edition of the Suschem España awards for young researchers, Prof. Emilio Palomares received the INNOVA prize to the best research curriculum developed in one or several of the following areas: industrial biotechnology, new materials, nanotechnology or reactions and processes design.

Prof. Palomares focuses his research on the development of light driven molecular devices where the limited functionalities of individual molecules are enhanced by their organisation into larger heterosupramolecular systems, which can be used to convert light into different types of energy sources.



Prof. Emilio Palomares

On the other hand, he is also devoted to the development and study of environmental molecular sensors (chemosensors) for the low-cost detection of harmful species such as mercury(II) or other heavy metals.

**i** [More info: www.pte-quimicasostenible.org/v2/index.asp](http://www.pte-quimicasostenible.org/v2/index.asp)

## Briefs

**PhD Thesis Defence:** Drs. Patricia Pérez, Elisa Huerta, Sílvia Subirats, Paula de Mendoza, Mónica García and Pere Miró, former pre-doctoral students at ICIQ, have defended their PhD thesis recently. All six were awarded the highest honors for their work.

**ICIQ Summer School 2010:** This year's ICIQ Summer School on organometallic catalysis will kick off July the 19th through the 23rd. In this 5th edition, nine prestigious chemists have been invited to share their work with doctoral and post-doctoral students from around the world. The invited speakers are Profs. Veronique Gouverneur (University of Oxford); Amir Hoveyda (Boston College); David A. Leigh (University of Edinburgh); Benjamin List (Max-Planck-Institut für Kohlenforschung); Cristina Nevado (University of Zürich); Tobias Ritter (Harvard University); Eric J. Sorensen (Princeton University); Dirk Trauner (University of Munich); Helma Wennemers (University of Basel).

**i** [More info: www.iciqsummerschool.com](http://www.iciqsummerschool.com)



## Inside ICIQ: The NMR Unit

When ICIQ started its activities 6 years ago, the first research support unit to take off was the NMR Unit. “We got the first 400 MHz by April/May 2004 and we had to put it in a provisional spot until this lab was finished. Right after came the 500 MHz and two years later another 400 MHz”, reminds Dr. Gabriel González, ICIQ’s NMR Unit manager. Now, apart from the two 400 MHz spectrometers equipped with autosampler and a 500 MHz spectrometer, there is an empty space left in the laboratory for the coming 500 MHz spectrometer with cryoprobe.

Throughout these last six years, the number of users hasn’t stop growing. As Dr. González explains, “We have around 150 users, each one with a personal code and password to submit their samples and receive the results in an automatic way. As for the samples submitted, 200 samples are tested automatically every day and we take care of the samples that require a manual analysis, for example, those that have to be measured under variable temperature”.

Besides Dr. González, the Unit also counts on the support of Kerman Gómez, who joined the NMR lab in Sept. 2004. Compared to other NMR facilities, ICIQ users take the advantage of having a non-stop NMR service available 24 hours a day and 7 days a week under self-service regime. Moreover, both Dr. González and Kerman Gómez are highly specialized personnel that not only give technical support to the users in making the most of the unit equipment taking into account their needs but they also give scientific support.



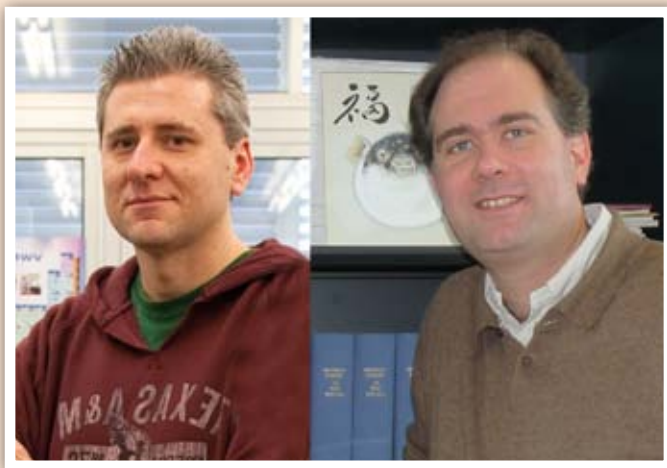
*Dr. Gabriel González, NMR Unit Manager*

And what about the users? What is the best way to give a good service to an increasing (and demanding) number of users? Dr. González makes it simple: “We first make sure that any new user knows how the equipment works and we do training courses from time to time to wider the scope they have of the experiments that can be run. We just ask the users to stick to the basic rule of ‘short experiments during the day and long experiments during the night’ and basic principles as ‘no broken tubes and clean tubes’. And above all ‘common sense!’”. Sorry, no black list of users will be displayed.

## ICIQ’s new ICREA professors

Profs. Kilian Muñiz and José Ramón Galán-Mascarós have been given an ICREA senior research position. The Catalan Institution for Research and Advanced Studies (ICREA), is a foundation supported by the Catalan Government which aims to recruit top scientists for the Catalan R&D system. The senior ICREA call is addressed to scientists with an outstanding research record and for the 2010 call 20 positions were offered.

 **More info:** [www.icrea.cat/web/home.aspx](http://www.icrea.cat/web/home.aspx)



*Prof. José Ramón Galán-Mascarós, Prof. Kilian Muñiz*

## Where are they now?



**Alfons Nonell** I started at ICIQ the first day it opened its doors, on March 1st, 2004. The computational lab had nothing to do with the current one. By that time we had four desks, four chairs and a “big cluster” composed by three computers in a corner of

the office. Everything was charming, we were few people and we all knew each other. I stayed at ICIQ until August 2009 when, two months before defending my PhD thesis, I started as a post-doctoral fellow at the Barcelona Biomedical Research Park (PRBB), in a chemogenomics group, doing research on computational drug design. My thesis dealt with the theoretical study of a family of proteins and their performance, and I established several collaborations with experimental groups at ICIQ and other institutions.

As a funny anecdote during my stay at ICIQ, I remember there was a security guard who used to check our bags and boots to prevent from stealing. One day he saw I was carrying a CD with something handwritten on it, and he didn't want to let me take it home because, according to him, it could contain confidential information (there was only a presentation for a talk...).



**Cristina Nieto** I moved to ICIQ early 2004, with Antonio Echavarren to continue with my graduate studies, and I was one of the first members to join the institute. It was a great opportunity to join a new institute and be able to see it grow,

and become such a great place to do chemistry. In the chemistry part, I was involved in the development of new Au(I) complexes and the application of these to new cascade reactions. I was the first member of my group whose thesis was done in part at ICIQ. Moving to ICIQ was a great opportunity, state-of-the-art laboratories and its availability of personnel and resources made it an unbeatable place to do chemistry. Since I

left ICIQ, I spent 2 years at Harvard University as post-doctoral fellow, and now I am doing a 2nd postdoctoral stay at MIT, with Prof. Movassaghi. In both post-docs I have been involved in the synthesis of natural products, at Harvard with Prof. Shair on Cortistatin A, and now at MIT in the synthesis of structurally complex hexahydropyrroloindole alkaloids.



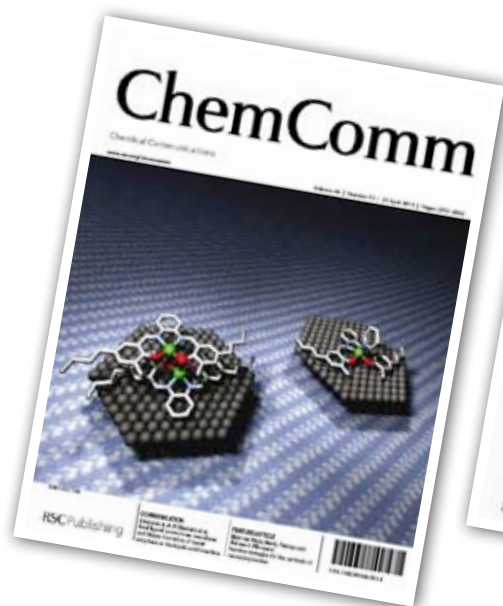
**Xavier Cattoen** During my stay at ICIQ (2004-2007), I was a post-doc in the groups of Anton Vidal and Miquel Pericàs. I was involved in the development of new asymmetric catalysts based on biaryl or oxazolines motifs. After this period, I got a CNRS junior researcher position in Montpellier (France) where I'm currently exploring the use of hybrid materials for applications in the fields of supported catalysis and photonics. Among the very nice moments we shared in ICIQ, I really enjoyed the shooting of 'Els Pastorets', starring Pau Ballester, Anton Vidal and Miquel Pericàs who acted as the devils.



**Anna Lagunas** I was in the ICIQ at its beginning. It was 2004 when I moved there to finish my PhD thesis with Prof. Pericàs' research group. I had been working during my first two years of thesis with him in the group's recently

started field of nanomaterials applied to enantioselective catalysis at the Scientific Park of Barcelona. Tarragona and the ICIQ were all new for me. I specially remember a very funny representation of “els Pastorets” at ICIQ, and one snowy day that covered in white everything outside the institute. I remember going out to the small balcony of the lab and taking a picture of the sightseeing and the lab members with our coats and snow hats. Nowadays I am working as a postdoctoral researcher in the Nano-bioengineering lab at the Institute for Bioengineering of Catalonia (IBEC) under the direction of Prof. Josep Samitier. Our group is currently working in the design of smart surfaces for the study of cell-surface interaction and also to create biosensing devices.

## Journal Covers



Axial ligand control over monolayer and bilayer formation of metal-salophens at the liquid-solid interface  
(*Chem. Comm.* **2010**, 46, 2548-2550)



Light Switches the Ligand!  
Photochromic Azobenzene-Phosphanes  
(*Eur. J. Inorg. Chem.* **2010**, 14, 2075-2078)

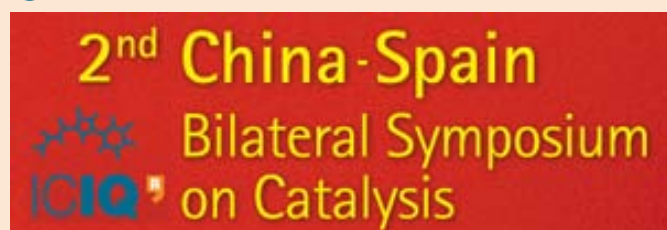


Metal-Arene Interactions in Dialkylbiarylphosphane Complexes of Copper, Silver and Gold  
(*Chem. Eur. J.* **2010**, 16 (18), 5324-5332)

## Briefs

**2nd China-Spain Bilateral Symposium on Catalysis:** From November 22nd to the 24th, ICIQ will hold the 2nd China-Spain Bilateral Symposium in Catalysis. This symposium aims to become a relevant meeting point for sharing and exchanging ideas on research in Catalysis. To this end ICIQ has brought together some of the most prestigious chemists from both countries and plenary lectures will be delivered by Profs. Greg Fu (MIT), Erick Carreira (RTH) and Matthew Gaunt (Cambridge University). It is also programmed a poster session for pre-doctoral and post-doctoral students to present their work.

**i** More info: [www.2ndchispabsc.com](http://www.2ndchispabsc.com)



**The Nobel Laureate Meetings at Lindau:** Dr. Amilan Jose, a postdoc from Prof. Vidal's group, has been selected to participate in the 60th Meeting of Nobel Laureates that will take place in Lindau (Germany) from June 27th to July 3rd.

**i** More info: [www.lindau-nobel.org](http://www.lindau-nobel.org)



**ICIQ's h-index:** According to the Web of Knowledge database, the current h-index for the ICIQ is 50.

## The Rhythm of ICIQ



# Agenda

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### ICIQ Summer School

19 - 23 July, ICIQ Auditorium

[www.iciqsummerschool.com](http://www.iciqsummerschool.com)

### PhD Thesis Defence

#### September 16th ICIQ Auditorium

María Dolores Segarra: "Switchable and tunable ligands for homogeneous catalysis"

#### September 29th 10:30 am ICIQ Auditorium

Marta Santiago: "Hexaaluminate-type catalysts for N<sub>2</sub>O abatement"

#### October ICIQ Auditorium

Mihai Raducan: "New Au and Ru Alkynophilic Catalysts"

#### October ICIQ Auditorium

Miquel Planells: "Design and Synthesis of Organic Sensitizers for Dye Solar Cells: Molecular Structure vs Device Performance"

### ICIQ Seminar Program (September/October)

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

- Sept. 3rd:** Prof. Jaume Vilarrasa (Universitat de Barcelona)
- Sept. 8th:** Prof. Alan R. Katritzky (University of Florida)
- Sept. 13th:** Prof. Dave MacMillan (Princeton University)
- Sept. 10th:** Prof. Thomas Carell (LMU Munich)
- Sept. 17th:** Prof. Joost Reek (Van t Hoff Institute for Molecular Sciences, Amsterdam)
- Oct. 1st:** Prof. Steve Davies (University of Oxford)
- Oct. 8th:** Prof. J. Alberto Marco (Universitat de València)
- Oct. 15th:** Prof. Olivier Baudoin (University of Lyon)
- Oct. 22nd:** Prof. Karl A. Jørgensen (The Danish National Research Foundation)
- Oct. 29th:** Prof. Achim Müller (University of Bielefeld)