

## Nobel Prize in Chemistry Colloquium

During their stay in Valencia, on the occasion of their participation as a jury of the Rey Jaime I Awards, the researchers Prof. Jean Marie Lehn (Nobel Prize in Chemistry 1987) and Prof. Ben Feringa (Nobel Prize in Chemistry 2016) have offered a colloquium focused on the topic "Molecules in Action: Molecular Dynamics and Molecular Machines".

The event opened with the address by Eugenio Coronado, Director of the Molecular Science Institute, who introduced both researchers and summarized the main achievements that made them worthy winners of the Nobel Prize. A special mention was made to the recently deceased Dr. Harry Kroto.

Afterwards, Jean Marie Lehn showed some of his work related to the central topic of the symposium: *Molecules in Action*, with special focus on *Molecular dynamics*. Firstly, he emphasized the importance of the nuclear correlation time in the study of fluid dynamics. In addition, he exposed the role of the imines as molecular motors, along with the concepts of motional dynamics and constitutional dynamics. Finally, he presented systems capable of helically fold and unfold (or even both) upon binding of a metal ion, thus reproducing an extension-contraction similar to our muscles movement.

Then was the turn of Ben Feringa, who exposed the research done in the control of molecular motion, based on the concepts previously developed by Lehn. He showed how molecular motors are capable of transforming energy into movement, providing examples of how these can help us to improve current cancer treatments and overcome the problem of bacterial resistance. He also amazed the audience with the recent advances in the study of rotational motion using the defocused wide-field image technique and especially with the possibility of obtaining nanocars by converting rotational movement into translational

The colloquium ended with a fruitful debate in which the public was able to address their questions not only to the two speakers, but also to the other members of the court of the Jaime I Awards present there. Namely, Prof. Miguel Yus (U. Alicante), Prof. Luisa de Cola (U. Strasbourg), Prof. Markus Antonietti (Max Planck Institute of Colloids and Interfaces), Prof. Rodolfo Miranda (IMDEA Nanociencia), Dra. Silvia Osuna (U. Girona), Prof. Otilia Mó (UAM). Prof. Roberta Sessoli (U. Firenze) y Prof. Mauricio Prato (Biomagune). Issues such as the future of supramolecular chemistry or the role of computational chemistry in research were addressed. An interesting discussion about how to make chemistry more attractive, emphasizing its important role in the several research areas took place. Ben Feringa stressed the power of chemistry to create things without the limitations present in nature.

[Rey Jaime I Awards](#) are bestowed by the Rey Jaime I Awards Foundation with the aim of promoting Science and Research in Spain. Its six awards (Basic Research, Economics, Clinical Medicine, Environmental Protection, New Technologies and Entrepreneur) are one of the best remunerated in the country.