CiQUS

Centro Singular de Investigación en Química Biolóxica e Materiais Moleculares

Conferencia:

"Dynamic Molecular Systems, *from switches to motors*"

Prof. Ben Feringa

Jacobus van't Hoff Distinguished Professor of Molecular Sciences

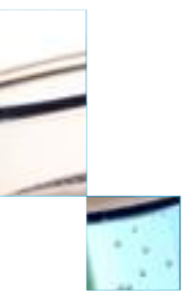
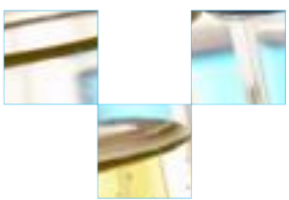
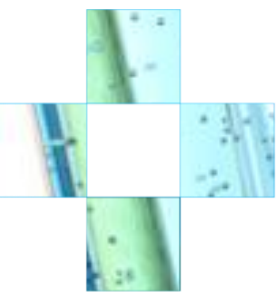
University of Groningen

12/09/16

Aula de Seminarios do CIQUS

12:15 h

Más información:
www.usc.es/ciqus


XUNTA DE GALICIA
CONSELLERÍA DE CULTURA, EDUCACIÓN E ORDENACIÓN UNIVERSITARIA

USC UNIVERSIDADE DE SANTIAGO DE COMPOSTELA

CAMPUS VIDA
CAMPUS DE EXCELENCIA INTERNACIONAL

Dynamic Molecular Systems

from switches to motors

Ben L. Feringa

Stratingh Institute for Chemistry, University of Groningen

Nijenborgh 4, 9747 AG Groningen, The Netherlands

b.l.feringa@rug.nl

Summary. Among the major challenges ahead in the design of complex artificial molecular systems is the control over dynamic functions and responsive far-from-equilibrium behaviour. Chemical systems ultimately require control over structure, organization and function of multi-component dynamic molecular assemblies at different hierarchical levels. A major goal is the control over translational and rotary motion.

In this presentation focus is on the dynamics of functional molecular systems as well as triggering and assembly processes. We design switches and motors in which molecular motion is coupled to specific functions. Responsive behaviour will be illustrated in self-assembly and photo-pharmacology. The design, synthesis and functioning of rotary molecular motors will be presented with a prospect toward future dynamic molecular systems. . In particular the use of rotary motors as multistage switches, acceleration of rotary motors, transmission and control of catalytic function is described. Finally autonomous motion and assembly of motors on surfaces is illustrated.

1) Information on http://www.benferinga.com

BEN L. FERINGA
Jacobus van't Hoff Distinguished Professor of Molecular Sciences

Curriculum vitae Ben L. Feringa

Summary

Ben L. Feringa obtained his PhD degree at the University of Groningen in the Netherlands under the guidance of Professor Hans Wynberg. After working as a research scientist at Shell in the Netherlands and the UK, he was appointed lecturer and in 1988 full professor at the University of Groningen and named the Jacobus H. van't Hoff Distinguished Professor of Molecular Sciences in 2004. He was elected Foreign Honory member of the American Academy of Arts and Sciences and member and vice-president of the Royal Netherlands Academy of Sciences. In 2008 he was appointed Academy Professor and was knighted by Her Majesty the Queen of the Netherlands.

Feringa's research has been recognized with a number of awards including the Koerber European Science Award (2003), the Spinoza Award (2004), the Prelog gold medal (2005), the Norrish Award of the ACS (2007), the Paracelsus medal (2008), the Chirality medal (2009),the RSC Organic Stereochemistry Award (2011), Humboldt award (2012), the Nagoya gold medal (2013), Netherlands Chemistry and Catalysis Award (2015), NL, Arthur C. Cope Late Career Scholars Award, American Chemical Society, USA (2015),Chemistry for the Future Solvay Prize (2015), Belgium,August-Wilhelm-von-Hoffman Medal (2016), GDCh, Germany. Feringa is currently director of the Center for Systems Chemistry at the University of Groningen. The research interest includes stereochemistry, organic synthesis, asymmetric catalysis, molecular switches and motors, self-assembly, molecular nanosystems and photopharmacology.