

150 years



# News Release

## How frustrated Lewis pairs contribute to catalytic activation of hydrogen

- **Dr. Andrew Ashley of Imperial College London receives the BASF Catalysis Award 2015**
- **International experts from academia and industry are guests at the “Heidelberg Forum of Molecular Catalysis”**

Ludwigshafen, Germany – June 12, 2015 – For his outstanding research contributions to the catalytic activation of hydrogen, Dr. Andrew Ashley, Research Fellow of the Department of Chemistry of Imperial College London is receiving the BASF Catalysis Award 2015. The prize worth €10,000 is awarded biannually to young researchers. The award is being presented today by Dr. Peter Schuhmacher, head of BASF’s research unit Process Research and Chemical Engineering, at the “Heidelberg Forum of Molecular Catalysis”, a meeting of international experts organized jointly by Heidelberg University and BASF SE.

“Catalysis is an indispensable key technology for the chemical industry. For example, it is crucial in helping our production methods to become even more energy-efficient or tapping into new raw material sources,” emphasizes Schuhmacher. As a company with a worldwide leading technology platform for researching and developing catalysts, BASF attaches particular importance to sponsoring outstanding young researchers in this field.

To promote the reactivity of the hydrogen molecule, Andrew Ashley is working with non-metallic components like amines or Lewis acidic organoboranes. Because of steric hindrance, these Lewis acids and

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bases cannot neutralize each other, resulting in the formation of “frustrated Lewis pairs” (FLP). Many FLPs are capable of splitting hydrogen heterolytically. Besides his work on thermally and hydrolytically stable FLPs, Ashley is also searching for new metal-based systems for the reversible cleavage of hydrogen. These new strategies could contribute to a more sustainable design of classical industrial processes such as hydrogenations.

### **BASF intensifies cooperation with top universities**

Imperial College London, where the prizewinner pursues his research, offers a prominent example of a program of academic partnerships driven forward by BASF under the name “UNIQUE – the BASF Academic Partnership Program”. With this program, the company’s research units develop enduring, constructive and successful partnerships with the world’s top universities. The currently 14 cooperative projects are each represented and further developed by a BASF researcher. For example, various joint projects are in progress at Imperial College, especially in the areas of materials science and chemical engineering.

The “Heidelberg Forum of Molecular Catalysis,” an international scientific symposium of top class researchers at Heidelberg University, is being held this year for the eighth time. The event offers scientists from academia and industry the opportunity to exchange news and information about the latest research activities in molecular catalysis. Plenary presentations are being held this year not only by the prizewinner but also by Professors Douglas W. Stephan, University of Toronto (Canada), Paul Knochel, LMU Munich (Germany) and Paul Chirik, Princeton University (USA).

### **About BASF**

At BASF, we create chemistry – and have been doing so for 150 years. Our portfolio ranges from chemicals, plastics, performance products and crop protection products to oil and gas. As the world’s leading chemical company, we combine economic success with environmental protection and social responsibility. Through science and innovation, we enable our customers in nearly every industry to meet the current and future needs of society. Our products and solutions contribute to conserving

resources, ensuring nutrition and improving quality of life. We have summed up this contribution in our corporate purpose: We create chemistry for a sustainable future. BASF had sales of over €74 billion in 2014 and around 113,000 employees as of the end of the year. BASF shares are traded on the stock exchanges in Frankfurt (BAS), London (BFA) and Zurich (AN). Further information on BASF is available on the Internet at [www.basf.com](http://www.basf.com).