

Press Release

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DSM presents Science & Technology Awards (North) 2011

Emiel de Smit has been awarded first prize in the DSM Science & Technology Awards (North) 2011 for his PhD research in the field of Fischer-Tropsch catalysis. Emiel de Smit, who received his doctorate from Utrecht University in the Netherlands, was selected by an international judging committee, chaired by DSM Chief Technology Officer Dr Jos Put. Dr De Smit has discovered new and important aspects of Fischer-Tropsch synthesis, a reaction that has been known since the 1920s, yet is still very poorly understood mechanistically. Dr De Smit has been able to monitor the surface of the catalyst during pretreatment and, for the first time, at relevant high-pressure and temperature conditions in real-time during the reaction itself. Fischer-Tropsch synthesis can be used to convert renewable resources such as biomass into long-chain hydrocarbons. As oil prices rise and the need to reduce emissions increases, improvements in Fischer-Tropsch synthesis could form an important part of the solution for meeting the world's energy needs and chemical demands.

As the winner of the first prize, Emiel de Smit will receive a cash prize of € 10,000. De Smit: *"After seeing the high quality of the other finalists' research, I really did not expect to win 1st prize - and it has still not quite sunk in. As a researcher, it's fantastic to get the recognition, but it also makes me feel very humble. No-one can do a PhD alone and I am no exception. I was very lucky to be able to work with a great team."*

Second prize (€ 5,000) was awarded to Simon Mathijssen of Eindhoven University of Technology for his PhD research into flexible self-assembled monolayer electronics. Third prize (€ 2,500) was awarded to Matthijs Jore of Wageningen University for his PhD research into the CRISPR-mediated anti-viral defense mechanism of prokaryotes. The other six finalists (see list below) will each receive a cash prize of € 1,250.

The winners were announced at a dedicated event held at Bilderberg Kasteel Vaalsbroek in Vaals (Netherlands) on May 31, with the awards being presented by Nico Gerardu of the DSM Managing Board: *"It is a great privilege for DSM to honor outstanding PhD researchers who are pushing the frontiers of science. At DSM, we are committed to conducting bright science, science that can create brighter lives for all of us. And we are also very much aware that, to do this, you need both fundamental academic research and application-oriented industrial research. That's why our awards program is so important to us - this kind of interaction is central to our Open Innovation approach."*

The judging committee's report

In its report, the judging committee commended the high quality of the work of all the finalists. About its selection of Dr Emiel de Smit as first-prize winner, the committee said that the most striking aspects of his research were its "highly multi-disciplinary approach, its creativity, and the complexity of the investigation combined with the relevance of the subject."

The winners of the 1st, 2nd, and 3rd prizes

First prize: Emiel de Smit, who conducted his research at the Debye Institute of Nanomaterial Science of the University of Utrecht under the supervision of Prof. Bert Weckhuysen. Thesis title: "Iron-based Fischer-Tropsch Synthesis: New Insights from *in-situ* (Micro)Spectroscopy, Diffraction and Theory."

Second prize: Simon Mathijssen, who conducted his research at the Department of Applied Physics at Eindhoven University of Technology under the supervision of Prof. R. Janssen and Prof. D. de Leeuw. Thesis title: "Probing dynamic interfaces in organic electronics"

Third prize: Matthijs Jore conducted his research at the Laboratory of Microbiology at Wageningen University under the supervision of Prof. J. van der Oost and Prof. W.M. de Vos. Thesis title: "CRISPR-mediated antiviral defence in prokaryotes"

Other winners

The other six prize-winners are:

David Alsteens	Institute of Condensed Matter and Nanosciences, Catholic University of Louvain PhD thesis title: Nanomechanics of the yeast cell wall
Rob Ameloot	Centre for Surface Chemistry and Catalysis, Catholic University of Leuven PhD thesis title: Functional metal-organic framework based materials and assemblies
Mikhail Meilikhov	Department of Chemistry and Biochemistry, Ruhr-University Bochum PhD thesis title: Functional Materials based on Porous Coordination Polymers: From Host-Guest Chemistry to new Properties
Suman de Sarkar	Organic Chemistry Institute, University of Münster PhD thesis title: Derivatization of Aldehydes by NHC Catalyzed Redox Activation
Jan Spielmann	Department of Inorganic Chemistry, University of Duisburg-Essen PhD thesis title: Application of molecular calcium compounds in catalysis and hydrogen storage
Dieter Vanderschaeghe	Department for Molecular Biomedical Research, Ghent University PhD thesis title: GlycoHepatoTest: validation and analytical technology development for implementation on microfluidics analyzers

Two parallel awards schemes

The DSM Science & Technology Awards (North) are part of the DSM Innovation Awards Program. They are awarded for outstanding PhD research conducted by doctoral students from two European regions: the Netherlands, Belgium and Northern Germany (North) and Switzerland, Austria, Northeastern France and Southern Germany (South). Over the years, they have gained a high reputation in academic circles and the contest is a major event on the international calendar.

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