

Press release

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EFCE presents Product Design Excellence Award for the development of molecule-selective breath sensors for medical diagnostics

Dr. Andreas Güntner has been named as the winner of the 2019 EFCE Excellence Award in Product Design and Engineering of the European Federation of Chemical Engineering (EFCE) for his outstanding PhD thesis on "*Selective gas sensors from flames for breath analysis*", completed at ETH Zürich, Switzerland, under the supervision of Professor Sotiris E. Pratsinis.



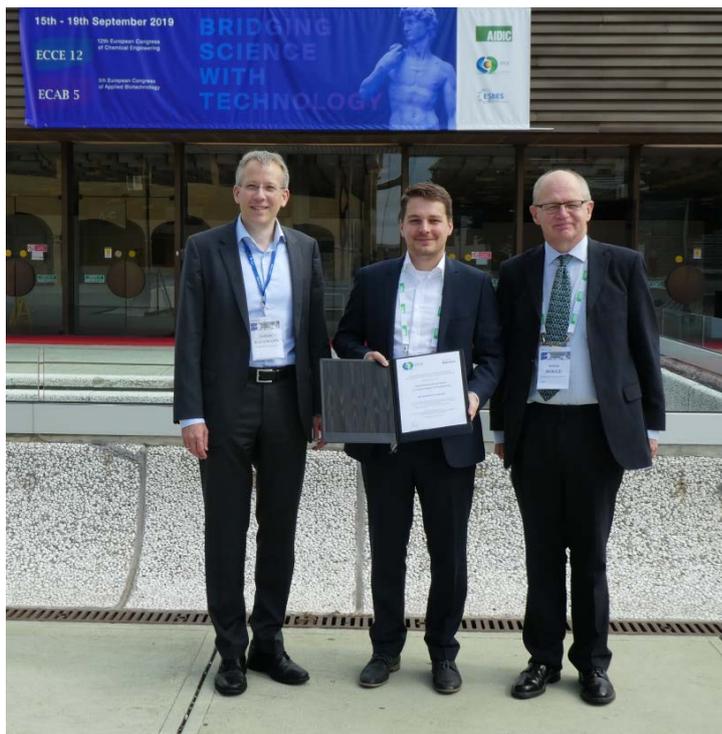
In his thesis, Andreas Güntner's research focused on advancing chemical and process engineering towards the creation of molecule-selective breath sensors for the next generation of non-invasive and inexpensive medical diagnostics monitoring and treatment in personalized medicine. He designed novel sensor concepts and systems, including new sensing materials, to systematically address the required selectivity and sensitivity in breath analysis. His work targets key breath markers for which no reliable chemical sensors exist to date, such as ammonia, isoprene, formaldehyde and acetone. Ammonia, isoprene and acetone are markers for early kidney dysfunction, cholesterol and fat metabolism, respectively. Also, he pioneered the development of a so-called electronic nose to detect formaldehyde, a marker for lung cancer and indoor air pollution emitted from furniture varnishes. The resulting gas sensor systems were tested on humans in clinical environments.

The Award jury stated: "The thesis is an excellent example of design from problem to product. Dr. Güntner's work is industrially relevant, shows depth and breadth – with a remarkable publication output – and the ability to disseminate and innovate."

Dr. Güntner obtained his Master's degree in Mechanical Engineering and his PhD in Mechanical and Process Engineering from ETH Zürich, Switzerland. Since 2017 he is a Postdoctoral Fellow, Research Group Leader and (since 2018) Lecturer at the Department of Mechanical and Process Engineering, ETH Zürich, Switzerland. He is also a Research Associate at the Department of Endocrinology, Diabetes and Clinical Nutrition, University Hospital Zürich, and co-founder of Sentiras GmbH, Zürich, Switzerland.

He said: "I feel deeply honored and humbled to receive this prestigious award."

Nominating him for the Award, Professor Pratsinis wrote: "Andreas is distinguished for his exceptional talent, motivation and leadership that truly shine now as a Research Team Leader and Lecturer in my department."



The award, which comprised of a €1,500 cash prize and a travel grant, was presented to Andreas Güntner during the Closing Session of the 12th European Congress of Chemical Engineering and 6th European Congress of Applied Biotechnology – ECCE12 & ECAB5, held in Florence, Italy, from 15 to 19 September 2019.

The 2019 EFCE Excellence Award in Product Design and Engineering is generously sponsored by Beiersdorf AG.

Beiersdorf

Ends

Related links

EFCE media centre (<http://www.efce.info/News>)

EFCE Excellence Award in Product Design and Engineering (<https://efce.info/ExcellenceAwardProductDesign>)

EFCE Section on Product Design and Engineering (https://efce.info/Section_PDE)

12th European Congress of Chemical Engineering and 6th European Congress of Applied Biotechnology – ECCE12 & ECAB5 (<http://www.ecce12-ecab5.org>)

Personal website of Dr. Andreas Güntner (<https://ptl.ethz.ch/people/person-detail.html?persid=157888>)

Photograph caption (L-R): Dr. Stefan Kaufmann (Beiersdorf AG, Chair of EFCE Section on Product Design and Engineering); Dr. Andreas Güntner (Award winner); Prof. David Bogle (EFCE Scientific Vice-President)

Notes to media

For further information, please contact:

Claudia Flavell-While
tel: +44 (0)1788 534422
email: Claudia@icheme.org

About Beiersdorf AG

Beiersdorf AG is a leading provider of innovative, high-quality skin care products and has over 135 years of experience in this market segment. The Hamburg-based company has about 20,000 employees worldwide and is listed on the DAX, the German benchmark equities index. Beiersdorf generated sales of €7.2 billion in financial year 2018. Its product portfolio comprises strong, international leading skin and body care brands including NIVEA – the world’s largest skin care brand* – Eucerin, Hansaplast/Elastoplast, and La Prairie. Millions of people around the world choose the Beiersdorf brands every day for its innovative, high-quality products. Further renowned brands such Labello, Aquaphor, Florena, 8x4, Hidrofugal, arix, SLEK, and Maestro round off the extensive portfolio. Beiersdorf’s wholly owned affiliate Tesa SE, another globally leading manufacturer in its field, supplies self-adhesive products and system solutions to industry, craft businesses, and consumers.

* Source: Euromonitor International Limited; NIVEA by umbrella brand name in the categories Body Care, Face Care, and Hand Care; in retail value terms, 2017.

About chemical engineers

Chemical, biochemical and process engineering is the application of science, maths and economics to the process of turning raw materials into everyday products. Professional chemical engineers design, construct and manage process operations all over the world. Oil and gas, pharmaceuticals, food and drink, synthetic fibres and clean drinking water are just some of the products where chemical engineering plays a central role.

About EFCE

Founded in 1953, The European Federation of Chemical Engineering (EFCE) is a non-profit-making association, whose object is to promote co-operation in Europe between non-profit-making professional scientific and technical societies in 30 countries for the general advancement of chemical engineering and as a means of furthering the development of chemical engineering. See www.efce.org