

FRAUNHOFER INSTITUTE FOR ENVIRONMENTAL, SAFETY, AND ENERGY TECHNOLOGY UMSICHT
INSTITUTE BRANCH SULZBACH-ROSENBERG



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Guest Keynote Speaker: Prof. Dr. rer. nat. Andreas Hornung CEng FICHEM FRSC

PROCESSING MUNICIPAL SOLID WASTE (MSW) AND BIOMASS/ RESIDUAL STREAMS USING THERMO CATALYTIC REFORMING (TCR[®]) TECHNOLOGY



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Biography:

Professor Andreas Hornung did his studies at the TU Darmstadt in Germany where he graduated as Engineer in Chemistry in 1991, he did his PhD at the TU Kaiserslautern in Germany. He was employed at the University Karlsruhe until 2000. From 2000 to 2002 Hornung was working for companies in Austria and Italy for the development of the first prototypes. Such units have been used from 2002 on at the Karlsruhe Institute of Technology where he worked until 2007 as head of the pyrolysis and gas treatment division. In 2007 he took over the chair in chemical engineering and applied chemistry at Aston University in Birmingham, UK since 2014. 2008 he founded the European Bioenergy Research Institute EBRI which he was leading as Director until end of 2013. Beginning of 2013 he became the director of the Institute branch Sulzbach-Rosenberg of Fraunhofer UMSICHT. Andreas Hornung was a member of the board of the International Biochar Initiative IBI and holds a Contract Professorship at the University of Bologna since 2014. Furthermore Andreas has been appointed for the chair in Bioenergy at the University Birmingham since 2014 and he is also Professor in High Temperature Process Technologies at Friedrich-Alexander-University Erlangen-Nuremberg, Germany.

Abstract:

The important role of bioenergy in the future energy supply was shown in many studies. The agricultural production of energy crops is in competition to food production and discussed controversial. Therefore the academic and commercial research is focused on waste or residue biomass. A promising conversion technology for the production of liquid fuels from residue biomass is intermediate pyrolysis with integrated reforming (TCR[®]). The high quality of products from thermo-catalytic reforming is not only limited to the liquid fuels, high hydrogen containing gas and a stable char, low in hydrogen and oxygen can be realized.

At the moment the TCR technology can be offered at throughputs of 2 kg/h for lab scale, 30 kg/h for decentralized power generation, 300 kg/h for coupling to biogas units and 3000 kg/h for technical scale. First projects or orders are given for countries like India, China, Italy, Germany, UK, Canada, Mexico and Brazil.