7<sup>th</sup> International Congress on

## **BIOFUELS AND BIOENERGY**

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## Herman Pel

DSM, Netherlands

## Optimizing enzyme cocktails and process conditions for production of cellulosic ethanol

R oyal DSM is a global science-based company active in health, nutrition and materials. By connecting its unique competences in life sciences and materials sciences DSM is driving economic prosperity, environmental progress and social advances to create sustainable value. DSM delivers innovative solutions that nourish, protect and improve performance in global markets such as food and dietary supplements, personal care, feed, medical devices, automotive, paints, electrical and electronics, life protection, alternative energy and bio-based materials. DSM and its associated companies deliver annual net sales of about €10 billion with approximately 25,000 employees. DSM's biotechnology cluster roots back to 1869 when Jacques C. van Marken, an innovative businessman believing in science, founded NG&SF (Dutch Yeast & Spirits Factory) to produce baker's yeast and potable alcohol. Since 2014 DSM is, via its joint venture POET-DSM Advanced Biofuels, again involved in ethanol production. The joint venture operates a commercial-scale cellulosic ethanol plant in Emmetsburg, Iowa. Project LIBERTY has a 20-25 million gallon capacity and is currently ramping up production. The role of DSM's advanced cellulosic enzyme cocktails and yeasts is to enable the bio-ethanol industry to diversify from starch crops to lignocellulosic agricultural residues. DSM has developed robust enzyme cocktails and yeasts to reach the ambitious ethanol cost reduction targets. This presentation will highlight how combined efforts in enzyme discovery, yeast fermentation and application process development were used to make lignocellulosic bioethanol a commercial reality.

## Biography

Herman Pel studied Biology at the University of Utrecht, The Netherlands. In 1992 he completed his PhD on biogenesis of mitochondria of the baker's yeast Saccharomyces cerevisiae at the University of Amsterdam. He received a long-term EMBO fellowship to continue his work on mitochondrial genetics at the Institut Genetique Moleculaire at the University of Paris-South, Orsay, France. In 1995 he became Research Fellow at the department of Biochemistry of the University of Otago, Dunedin, New Zealand, where he worked on bacterial and mitochondrial protein synthesis. In 1998 he joined DSM where he currently holds a position as Principal Scientist microbial strain development at the DSM Biotechnology Center (DBC) in Delft. Within DSM he has been involved in the development of numerous enzyme and metabolite production processes. At present he is scientific leader of DSM's enzymes for biofuels R&D program..

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