



清华工业生物催化论坛

TSINGHUA FORUM ON INDUSTRIAL
BIOCATALYSIS

Ultra-low cost ionic liquids for lignocellulose

报告人: Professor Jason Hallett

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报告地点: 英士楼319会议室



报告摘要:

Ionic liquids (ILs) have proven to be highly tunable 'designer solvents' capable of a wide range of exciting chemistries. However, industrial application at large scale is hampered by high solvent cost.

We have overcome this by redesigning the IL based deconstruction process to use low-cost, acidic ILs for lignin dissolution.

We use a range of 'protic' ILs, because their simple acid-base chemistry results in a simple and cheap synthesis, with a cost ($< \text{€}1/\text{kg}$). This presentation will discuss how ionic liquids can be 'tuned' to control cost structure of the final solvent, and what implications this will have for the chemical processes involved. The impact of the solvent on large-scale applications will be discussed. These properties highlight that the ILs have the flexibility to be useful for a variety of applications.

报告人简介:

Professor Jason Hallett is Professor of Sustainable Chemical Technology within the Department of Chemical Engineering at Imperial College London. He did his BS degree in Chemical Engineering at the University of Maine (USA) and PhD in Chemical Engineering at the Georgia Institute of Technology (USA) under the direction of Prof Charles Eckert and Prof Charles Liotta. He joined the Department of Chemistry at Imperial College in 2006 as a Marshall-Sherfield Postdoctoral Research Fellow, and later became a Research Lecturer in 2008. He joined the Department in 2014 and currently leads a group of 8 postdocs and 16 PhD students with a focus on solvent design for reduced environmental impact in chemical processes.

He has published over 90 papers with an h-index of 37 (ca. 14,500 citations) and 6 patents. He is also the director of the Imperial Network of Excellence in Industrial Biotechnology. In 2017 he embarked on the commercialization of his biorefinery research by founding Chrysalix Technologies, LTD.

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