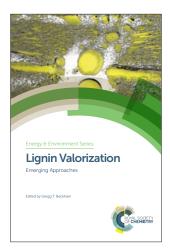
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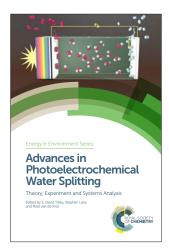
Lignin Valorization

Emerging Approaches

Gregg T Beckham National Renewable Energy Laboratory, USA

Lignocellulosic biomass represents a vast resource for the sustainable production of renewable fuels, chemicals, and materials. This book reviews the latest breakthroughs and challenges in upgrading lignin to fuels and chemicals. Bringing together biology, catalysis, engineering, and analytical chemistry, it presents a comprehensive picture of how lignocellulosic biorefineries could potentially employ lignin valorization technologies. It is ideal for graduate students and researchers working in lignin as well as industrialists working in biorefinery technologies.

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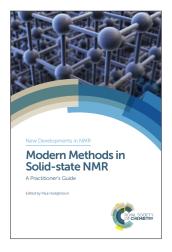
Advances in Photoelectrochemical Water Splitting

Theory, Experiment and Systems Analysis

S David Tilley University of Zurich, Switzerland Stephan Lany National Renewable Energy Laboratory, USA Roel van de Krol Helmholtz Zentrum Berlin, Germany

With a strong focus on theory, this book is an up-to-date review of photoelectrochemical water splitting. The book discusses prediction of band alignments, the discovery of novel materials with attractive band gaps and stability; recent developments such as protective overlayers for photoanodes and in operando X-ray measurements of PEC cells; and concludes with a systems analysis of photoelectrochemical water splitting technologies. It is an important reference for researchers working in solar fuels as well as those working in theoretical chemistry.

Hardback | 290 pages | ISBN 9781782629252 | £159.00 | \$220.00 | 12/04/2018



Modern Methods in Solid-state NMR

A Practitioner's Guide

Paul Hodgkinson Durham University, UK

Solid-state NMR covers an enormous range of material types and experimental techniques. In this unique volume, a range of experts in different areas of modern solid-state NMR explain about their area of expertise, emphasising the 'practical aspects' of implementing different techniques, and illustrating what questions can and cannot be addressed. Later chapters address complex materials, showing how different NMR techniques discussed in earlier chapters can be brought together to characterise important materials types. This book is an ideal complement to existing introductory texts and is equivalent to spending time in the laboratory of an internationally leading expert, learning the hints and tips that make the difference between knowing about a technique and being ready to put it into action.

Hardback | 435 pages | ISBN 9781782628545 | £169.00 | \$237.00 | 09/04/2018

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