

# Macromolecular Symposia 223

## Cellulose and Cellulose Derivatives

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*T. Heinze, K. Fischer*

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## Preface

Recently the world has turned its attention to renewable and sustainable resources resulting in a renaissance of investigations into the structure, properties and modification reactions of polysaccharides and their semisynthetic derivatives. Many different and groundbreaking research activities are carried out worldwide. Thus, cellulose chemistry and analysis is a vital research and development area.

The annual meeting of the “Verein der Zellstoff- und Papierchemiker und -ingenieure” (Zellcheming) was and is a good place to exchange knowledge in this area. In June 2004, the meeting took place in Wiesbaden, Germany. Experts in the areas of wood, paper, and cellulose from industry and academia discussed news in their fields. The “Cellulose Chemists Round Table Discussion” is organized within the framework of the Zellcheming meeting. The general theme was focused on “Analysis of Cellulose and Cellulose Derivatives” and various papers presented the state of the art. The book highlights the progress in:

- Raman spectroscopy of cellulose and cellulose derivatives
- NMR spectroscopy for the determination of the functionalization pattern
- Characterization of functional groups related to the repeated anhydroglucose unit and along the macromolecule
- Yellowing of cellulose due to production conditions and its processing
- Rheological characterization of directly dissolved cellulose and cellulose derivatives
- Activation of cellulose
- Characterization of cellulose and hemicellulose degradation products
- Bacterial cellulose

In addition, a review about the state of the art of synthesis and analysis of carboxymethyl cellulose and starch as well as information about the research potential and equipment of the Thuringian Institute for Textile and Plastics Research located in Rudolstadt, Germany is included.

Since 1954, the scientific contributions of the “Cellulose Chemists Round Table Discussion” were published in the journal “Das Papier” in German. These are times of change, we hope that many chemists around the world will be attracted by the information about the research and development on cellulose carried out in Germany. Therefore, the editors are indebted to Wiley-VCH agreeing to present the contributions in *Macromolecular Symposia* in English.

Many thanks to the authors and reviewers for their efforts and the publishers for their help and patience

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*K. Fischer*