

# International Conference and Exhibition on **Biopolymers & Bioplastics**

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### **Chemo-enzymatic synthesis and polymerizations of bio-based bisphenols derived from lignin: An access to novel renewable alternating aromatic/aliphatic polymers**

A family of renewable bisphenols containing bio-based phenolics and polyols from lignocellulose was prepared through chemo-enzymatic processes under mild conditions. The enzyme-catalyzed condensation steps lead to high purity grade bisphenols in high to excellent yields. These bio-based bisphenols were then used as monomers for the preparation of various types of alternating aliphatic/aromatic polymers such as copolyesters, polyurethanes, poly (ester-alkenamers) and linear phenolic homo-oligomers. The newly obtained homo- and copolymers were then characterized by NMR, GPC, DSC and TGA. These analyses revealed not only good thermal stabilities but also a broad range of accessible T<sub>g</sub>.

#### **Biography**

Florent Allais is currently a Full Professor in Chemistry at AgroParisTech (Paris, France) and the Director of the Chair ABI (Industrial Agro-Biotechnologies) in Reims (France). He has completed his PhD from the University of Florida in 2004 and Postdoctoral studies in the group of Prof. Janine Cossy (ESPCI, Paris, France) and Dr. Jean Boivin (ICSN-CNRS, Gif-sur-Yvette, France). He has presented his research in numerous international conferences, published more than 20 papers in peer-reviewed journals, granted/filed 8 patents, served as reviewer of various journals and as Associate Editor of *Frontiers in Chemistry* (Chemical Engineering). His research is dedicated to the development and optimization of sustainable industrial processes and high valued-added products from agro-resources (e.g., biorefineries by-products, agro-waste). More precisely, with expertise in white biotechnologies, green chemistry and downstream processing, his Chair aims at the development of platform molecules like organic acids or aromatics/phenolics - obtained from fatty esters, polysaccharides and lignocellulosic biomass - that will be used to create new functional bio-based additives, polymers or materials. The chair also aims at the production of valuable sustainable chemical intermediates that can be used in chemistry, in the food/feed industry or in cosmetology as antimicrobials, antioxidants, flavorings or surfactants to name a few.

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