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**Development of thermosetting polymers from lignin model compounds and depolymerized lignins****Richard Vendamme**

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Lignin is the most abundant source of renewable readymade aromatic chemicals for making sustainable polymers. However, the structural heterogeneity, high polydispersity, limited chemical functionality and solubility of most technical lignins make them challenging to use in developing new bio-based polymers. Recently, greater focus has been given to developing polymers from low molecular weight lignin-based building blocks such as lignin monomers or lignin-derived bio-oils that can be obtained by chemical depolymerization of lignins. Lignin monomers or bio-oils have additional hydroxyl functionality, are more homogeneous and can lead to higher levels of lignin substitution for non-renewables in polymer formulations. These potential polymer feedstocks however present their own challenges in terms of production (i.e. yields and separation), pre-polymerization reactions and processability. This talk provides an overview of recent developments on polymeric materials produced from lignin-based model compounds and depolymerized lignin bio-oils with a focus on thermosetting materials. Particular emphasis is given to epoxy resins, polyurethanes and phenol-formaldehyde resins as this is where the research shows the greatest overlap between these two types of feedstocks. The common goal of the research is the development of new and economically-viable strategies for using lignin as a replacement for petroleum-derived chemicals in aromatic-based polymers.

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