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UNDERSTANDING FAST PYROLYSIS OF LIGNIN TO PRODUCE CHEMICALS AND FUELS

Allen Arturo Puente Urbina
The van Bokhoven Group
Supervisor: Prof. Dr. Jeroen A. van Bokhoven
Co-examiners: Prof. Dr. Renato Zenobi (LOC),
Prof. Dr. Jeremy Luterbacher (EPFL)

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https://ethz.zoom.us/j/3225832258

Project Summary: Lignin is an abundant natural polymer obtained from lignocellulosic biomasses. It is rich in aromatic substructures and therefore has great potential to produce value-added chemicals and fuels. Fast pyrolysis is a promising depolymerization method. Nevertheless, the lack of control of undesired reactions and in-depth mechanistic insights hinder significant advances in its implementation. Herein, we provide a fundamental understanding of the depolymerization of lignin via fast pyrolysis by using lignin model compounds, well-preserved lignins, and purposely-modified lignins. Detailed mechanistic insights are provided, and the influences of lignins' structural characteristics are determined.

CV: Allen obtained his M. Sc. in Chemistry with the highest honors in 2016 from the University of Costa Rica (Costa Rica) under the supervision of Prof. Dr. Grettel Valle-Bourrouet. During his M. Sc., he did a research stay in the group of Prof. Dr. Jörg Matysik at Leipzig University (Germany) and additional training in the Korea Forest Research Institute (Republic of Korea). After being awarded a scholarship by the government of Costa Rica (having the best application in the call), he started his doctoral studies at ETH Zurich under the supervision of Prof. Dr. Jeroen Anton van Bokhoven in January 2018.