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Understanding interactions between lignin and ionic liquids with experimental and theoretical studies during catalytic depolymerisation

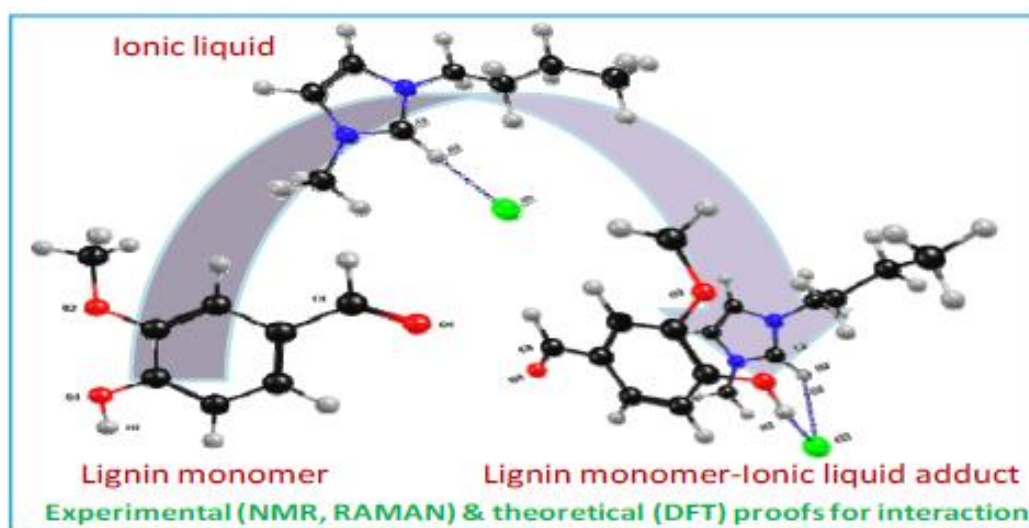
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Graphical abstract



Extensive weak and strong hydrogen bonding between acidic ionic liquid and lignin/vanillin (experimental and computational studies), helps achieve higher depolymerization activity.

HIGHLIGHTS

- Brønsted acidic ionic liquids performed better than H_2SO_4 in lignin depolymerization
- NMR (1D, 2D-HMBC) & RAMAN proves transfer of electron density from substrate to IL

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