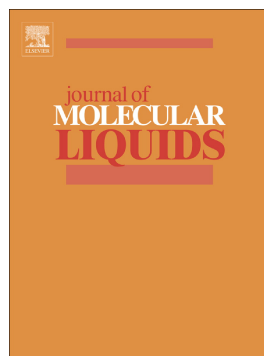


Accepted Manuscript

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PII: S0167-7322(18)31830-0
DOI: doi:[10.1016/j.molliq.2018.06.021](https://doi.org/10.1016/j.molliq.2018.06.021)
Reference: MOLLIQ 9219
To appear in: *Journal of Molecular Liquids*
Received date: 6 April 2018
Revised date: 1 June 2018
Accepted date: 6 June 2018

Please cite this article as: Elodie Melro, Luis Alves, Filipe Antunes, Bruno Medronho , A brief overview on lignin dissolution. Molliq (2017), doi:[10.1016/j.molliq.2018.06.021](https://doi.org/10.1016/j.molliq.2018.06.021)

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A brief overview on lignin dissolution

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Abstract

During the last decades, the demand for sustainable and renewable resources has greatly increased. It is clear that biomass exploitation in general, and lignin in particular, will play a key role towards a sustainable and environmental prosperous society. Lignin is a three-dimensional amorphous polymer, mainly found in the cell wall of woody tree species, quite abundant and renewable natural bioresource capable to become in the future soon a usual chemical feedstock for many materials of added value. However, its physicochemical understanding is still poor in comparison to other polymers, most likely due to its complexity. Its dissolution, as an often required first step for several production processes and applications, is typically complicated. Nevertheless, a wide variety of solvents for lignin have already been developed and, among them, organic solvents, ionic liquids and deep eutectic solvents are particularly relevant. In this brief treatise, the general features of lignin dissolution are reviewed as the drawbacks and virtues of lignin solvents and appropriate dissolution conditions.

Keywords: kraft lignin; dissolution; organic solvents; ionic liquids; deep eutectic solvents

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