MODULAR APPLICATION OF ULTRASOUND IN FOREST BIOREFINERY

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Many novel forestry biorefinery approaches aim for the full utilization of the lignocellulosic biomass (consisting of polysaccharides and lignin) into value added products like biofuels, biochemicals and renewable materials [1,2]. These approaches require multiple steps, where US can positively impact almost all of them (**Fig.1**), thus leading to novel prospects and higher efficiency.

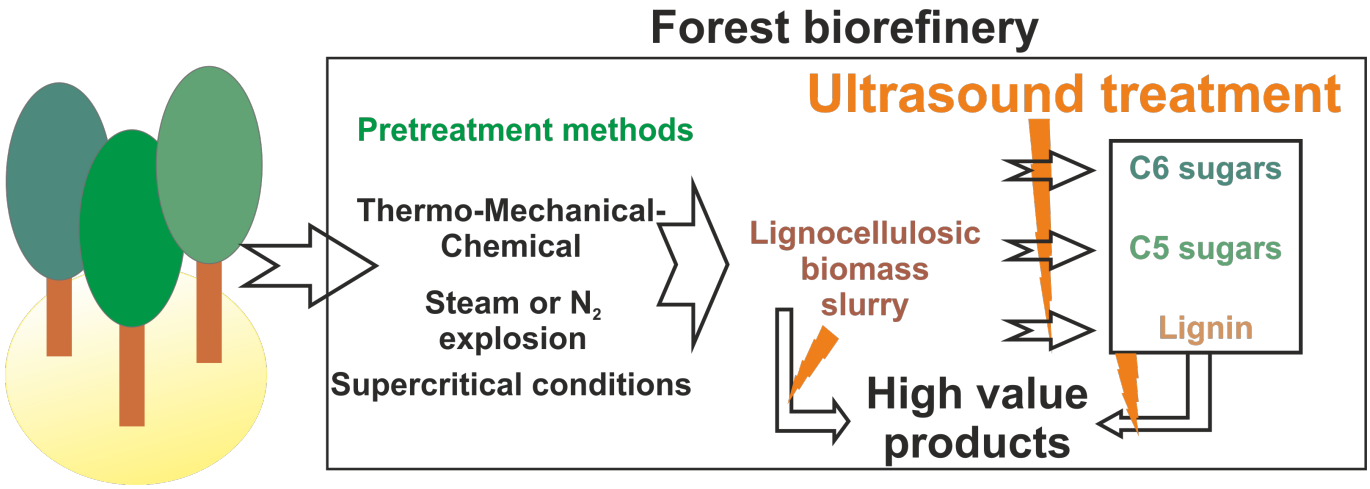

Fig.1 .Scheme of biorefinery processing with US application points indicated with orange.

Our work has shown the applicability and uses for multiple targets with interesting results. The first of which is to dramatically increase lignin solubility [3]. In addition, our current results show the application of US to increase the rate of enzymatic depolymerization of cellulose as well as creation of novel nanocellulose materials from lignin-cellulose mixtures.

References

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