

TREATMENT OF LIGNOCELLULOSIC BIOMASSES FOR THEIR CHEMICAL VALORIZATION

Giorgia BORRATA^{1,*}, Gustavo CAPANNELLI¹, Antonio COMITE¹

Dipartimento di Chimica e Chimica Industriale – Università degli Studi di Genova, Via Dodecaneso 31, 16146 Genoa, Italy

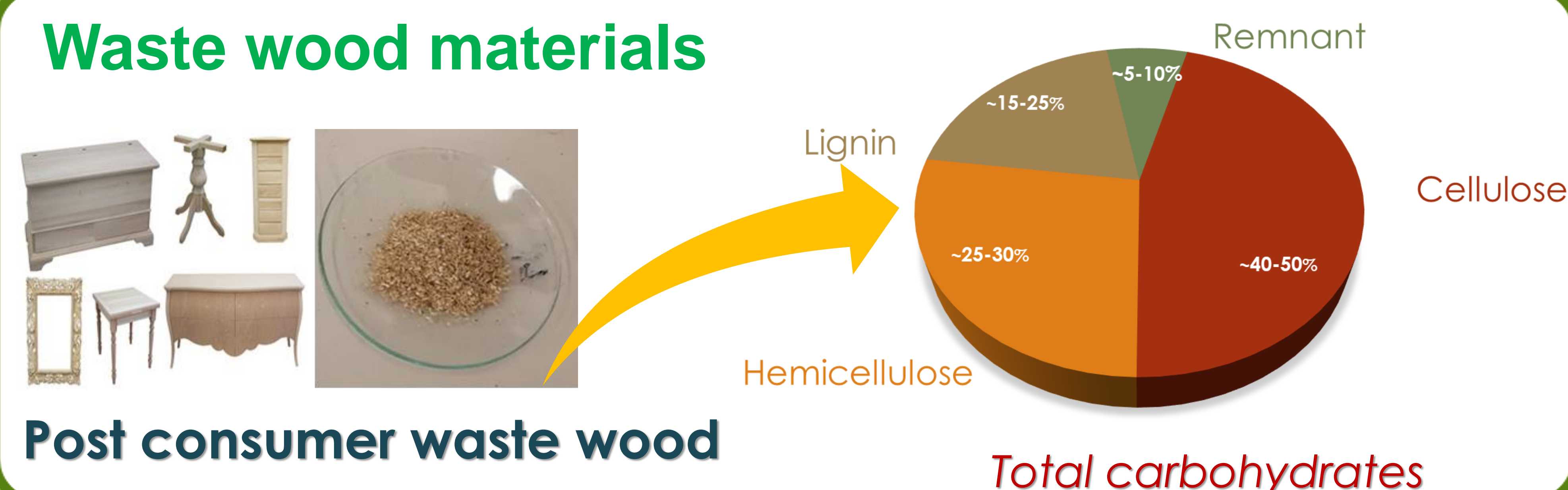
Corresponding author: giorgia.borrata@unige.it



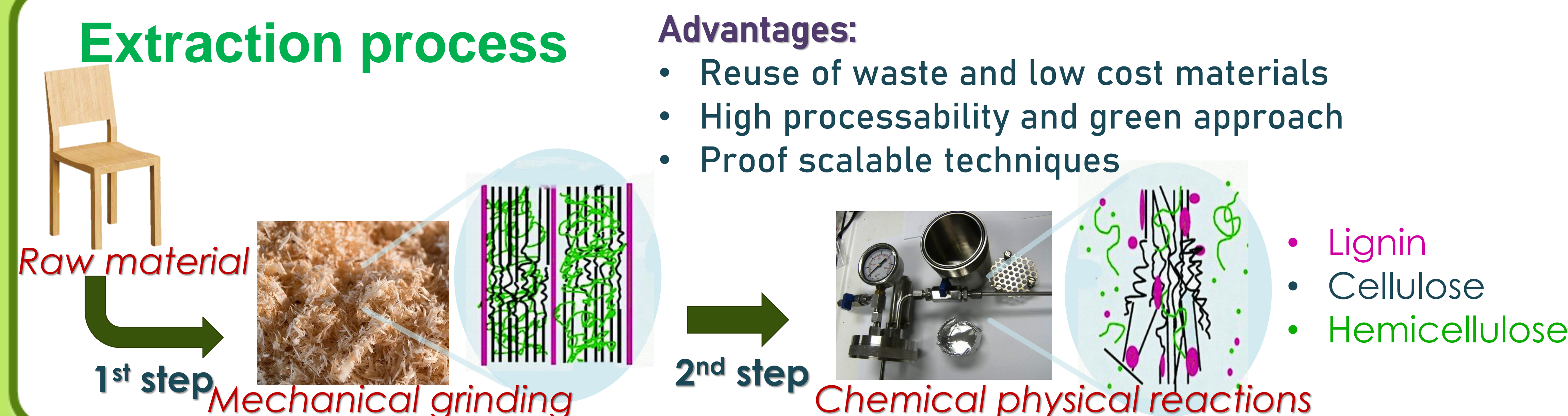
Introduction

The present work exploits the experimental condition to set up a viable process capable to convert the waste lignocellulosic biomass into high-value chemical precursors (fermentable sugars). The aim is focus finding a management alternative for the vegetable wastes arising from human activities. Through Liquid Hot Water (LHW) process, we obtained carbohydrates from post-consumer wood waste, available for the production of novel bio fuel and bio based compounds.

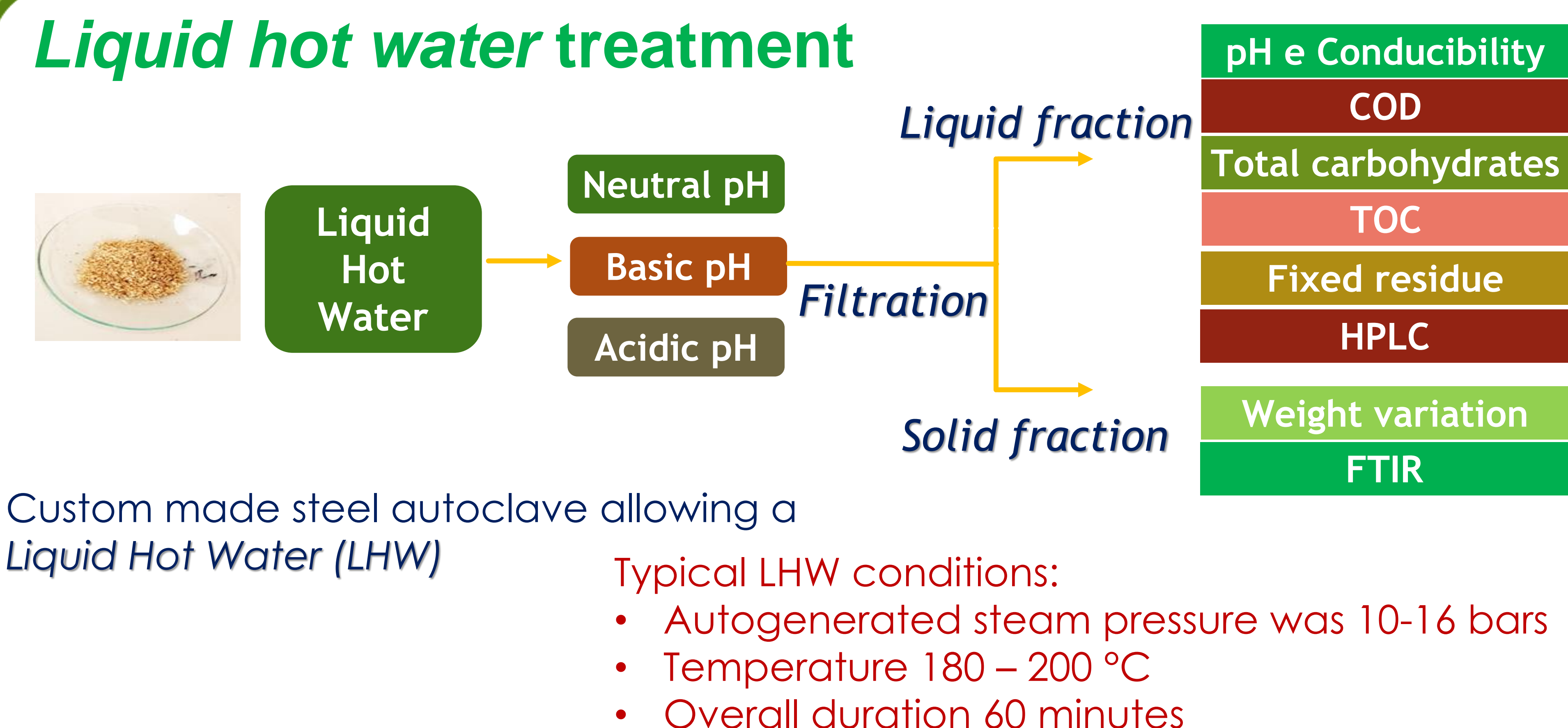
Waste wood materials



Extraction process

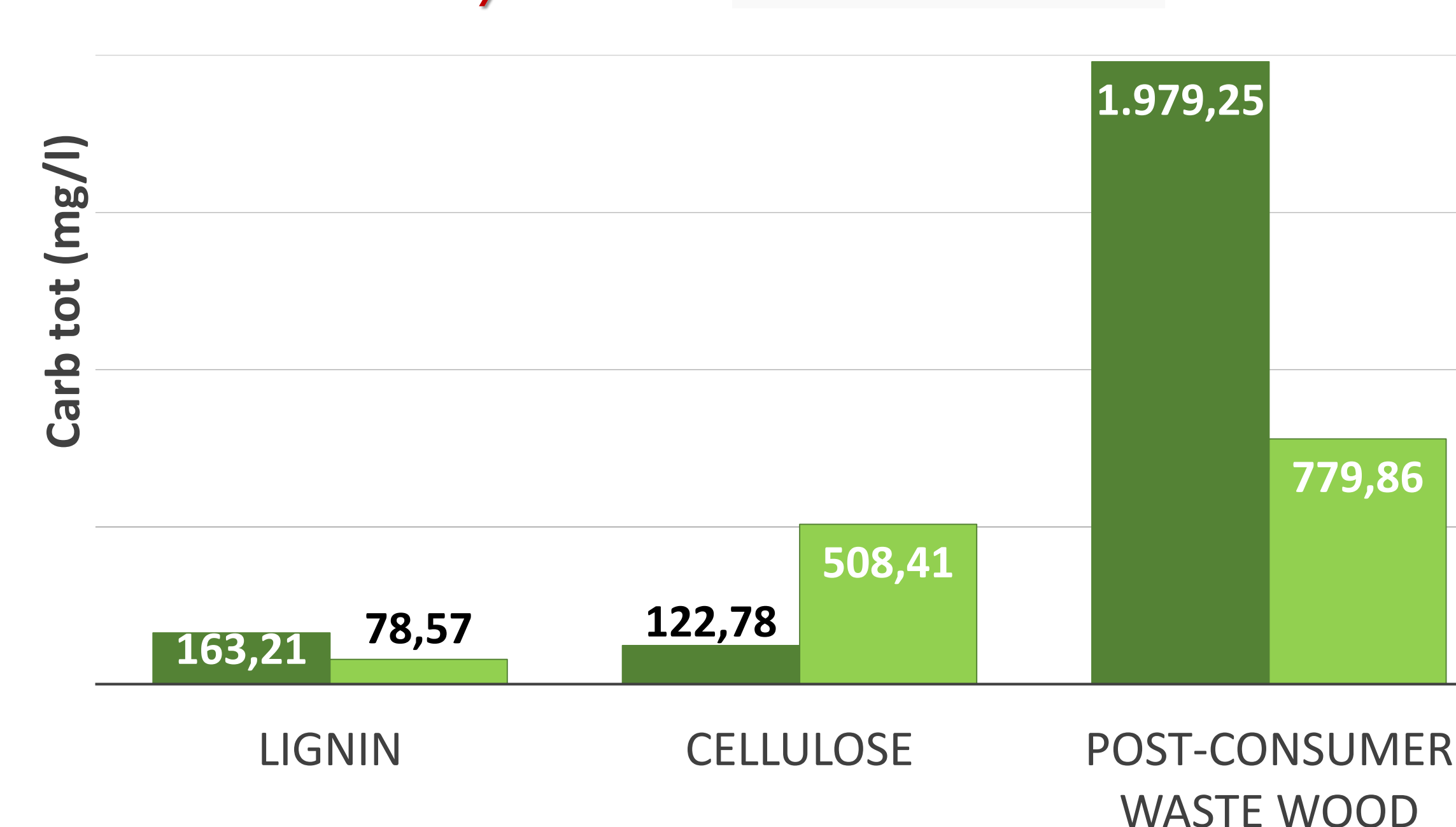


Liquid hot water treatment

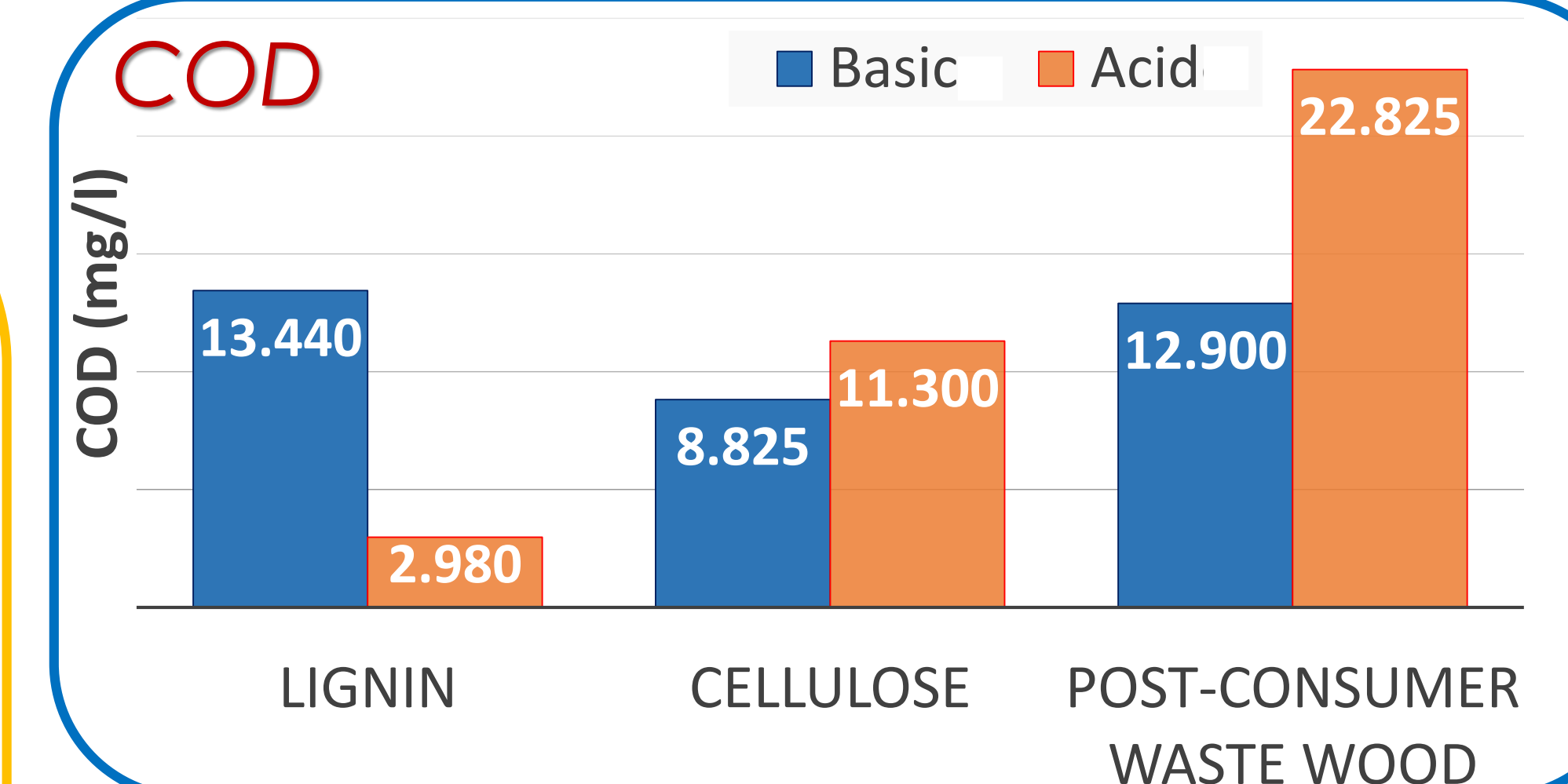


Products characterization

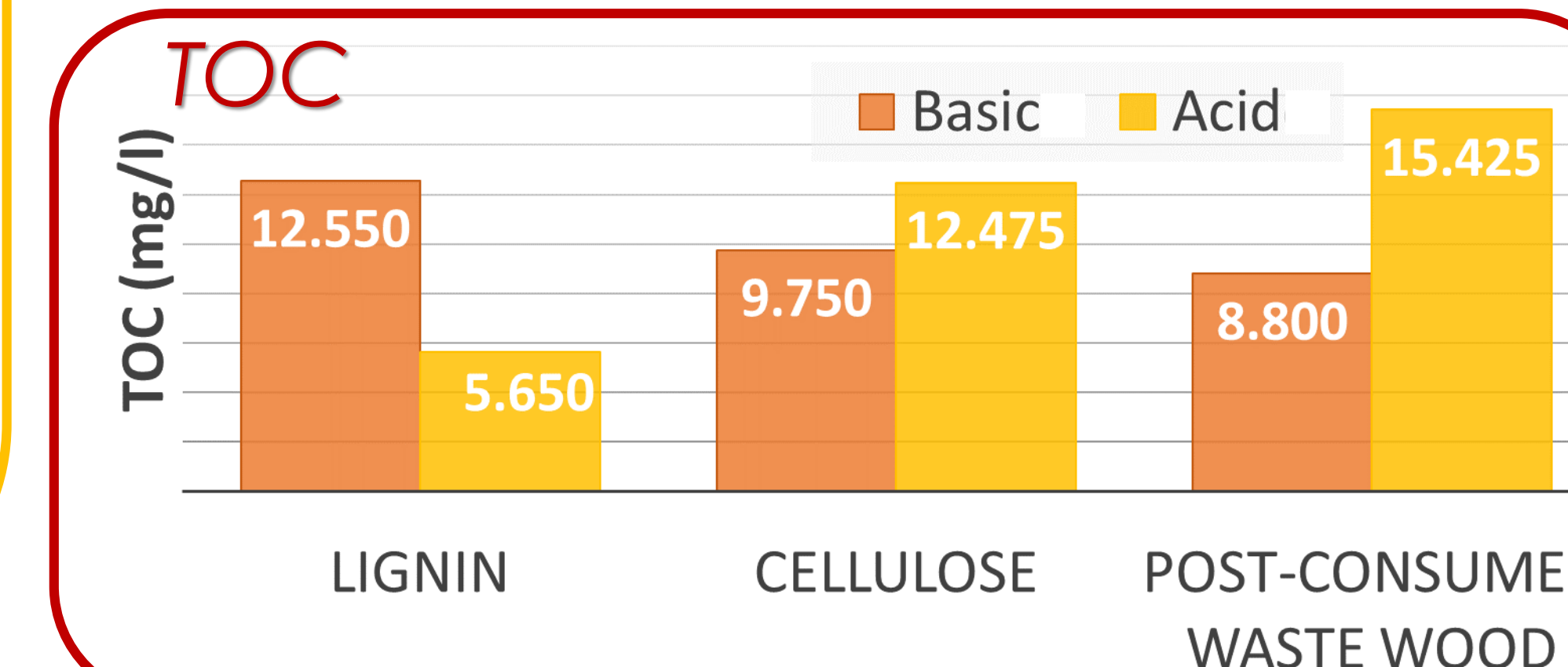
Total carbohydrate



COD



TOC



Conclusion

The results showed an high degradation rate of the lignocellulosic matrix through the thermal hydrolysis ranging the pH from acid to alkaline condition. Monosaccharides yield is promising and could be increased by a further optimization of the treatment process, e.g. changing the experimental condition (time, pH, temperature) and by using novel catalyst.

References:

¹, Zhuang, X., et al., 199, **2016**, Vol. Bioresource technology. 68-75; ², Agbor, V. et al., 29(6), **2011**, Vol. Biotechnology advances. 675-685., ³, L. Singh, et al., Springer, **2017**.

Acknowledgments:

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