



## 8<sup>th</sup> ICGC 2018 Session: Valorization of Waste into Chemicals

### To separate or not to separate... that is a green and sustainable question

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#### Abstract

Green and sustainable separation of natural products from non-food biomass feedstock based on a bio-circular model is quite a new concept. The current demands for healthier chemical materials and processes should combine innovative biomass resources of different origins, extraction of chemicals and/or synthesis of biomaterials, biofuels and bioenergy via benign processes<sup>1</sup>. From the very beginning, identification and quantification of all potential high-value compounds that could be removed from available renewable feedstocks requires another analytical approach, mainly connected to green and sustainable chemistry<sup>2</sup>. For example, many of the bioactive compounds have been extensively used as medicines, nutraceuticals, flavours, cosmetics, food additives, antimicrobials, biopesticides, etc. However, among the biggest challenges for biomass utilisation is the establishment of benign methods to separate and modify them; with rare exceptions, this is partially due to the small amounts associated to a possible instability of the target compounds and their presence in a complex mixture. In this context, green and sustainable removal of natural products from agro-industrial waste is clearly attractive on both socio-environmental and economic grounds and, some case studies focusing on Brazilian supply chains will be discussed<sup>3</sup>.

#### References

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Vania Zuin is a professor at the Federal University of São Carlos (Brazil). Her background is Green Analytical Chemistry and Education, with major interests in developing green & sustainable analytical methods to determine high-value compounds extracted from Brazilian agro-industrial residues. Recent distinctions include the 52<sup>o</sup> and 57<sup>o</sup> Brazilian Literary Jabuti Awards, the IUPAC 2014 CHEMRAWN VII Prize for Atmospheric and Green Chemistry, the titles of Honorary Visiting Fellow at the University of York (UK) in 2014 and Fellow of the Royal Society of Chemistry (FRSC) in 2015, and the ACS-CEI Award in 2017.

