



Postponed 2nd edition *online*

SUMMERSCHOOL

~~Versailles~~ online

8-11 February 2021



**Zero waste biorefineries: value chain approach,
methods and processes for lignin upgrading.**



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Horizon 2020
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for Research & Innovation

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8 February From plant cell-wall to multifunctional assemblies

- 09:45 - 10:15** Introduction (*Stéphanie Baumberger, AgroParisTech*)
- 10:15 - 11:00** Plant cell wall: biosynthesis and architecture (*Herman Höfte, INRAE*)
- 11:15 - 12:00** Nanocellulose and nanocellulose / hemicellulose assemblies (*Bernard Cathalla, INRAE*)
- 12:00 - 12:45** The fungal frontier: is total microbial breakdown and modification of lignin a possibility? (*Craig Faulds, INRAE*)
- 14:00 - 14:45** Lignin-based phenolics as antioxidant additives in polymer films (*Sandra Domenek, AgroParisTech*)
- 14:45 - 15:00** Lignin multifunctionality for the design of insect-repellent food packaging (*Jérôme Vachon, Sabic*)
- 15:15 - 16:00** Production, modification and applications of spherical lignin nanoparticles (*Monika Osterberg & Guillaume Rivière, Aalto University*)

9 February Tools for lignin deconstruction and structural investigation

- 09:45 - 10:30** Selective chemical deconstruction (*Stéphanie Baumberger, AgroParisTech*)
- 10:30 - 11:15** Potential of sonochemistry for the green chemistry of polyphenols (*Grégory Chatel, Université Savoie Mont Blanc*)
- 11:30 - 12:15** Monitoring of molar-mass distribution (*Florian Pion, AgroParisTech*)
- 12:15 - 13:00** Characterization of functionalities by NMR (*Paul-Henri Ducrot, INRAE*)
- 14:15 - 15:00** Safety assessment (*speakers to be confirmed*)
- 15:00 - 16:00** Work in group on case studies

10 February Lignins as lever for sustainable plant-biomass value chains

- 10:30 - 11:15 Lignin engineering to improve biomass deconstruction
(Wout Boerjan, Gent University)
- 11:15 - 12:00 Integrated flexible processing chain for lignin valorization into carbon-based materials: example of the Eucaliva project (Enrico Cozzoni, Gradozero)
- 14:00 - 14:45 Market opportunities (Achim Raschka, nova-Institute)
- 14:45 - 15:30 Industrial production and commercialization of lignin from soda pulping of annual fibers (Jairo Lora, GreenValue Enterprises LLC)
- 15:45 - 16:30 Environmental impact (Xun Liao, Quantis)

11 February Towards integrated lignin biorefineries

- 10:00 - 10:45 Fractionation and chemical depolymerization process for the production of functional intermediates from lignin – cascading approach
(Richard Gosselink, Wfbr)
- 10:45 - 11:15 How and why elaborating a SWOT analysis on social impacts
(Christopher vom Berg, nova-Institute)
- 11:30 - 12:45 Build-up your own lignin biorefinery!
- 14:00 - 16:00 Presentation of the results from the case studies
- 16:00 - 16:30 Round table and concluding remarks



Course Information

Course aim

This Summer School addresses the question of biorefinery wastes in the context of bioeconomy, with a focus on valorization of recalcitrant side streams. A panel of specialists in the biorefinery field will provide an up-to-date state-of-the-art overview based on the latest advances in terms of scientific knowledge, techno-economical developments and life cycle assessment methodologies.

Course topics

- Advances in technical lignin up-grading
- Native structures and product design
- Methodologies
- Lignocellulose and Plant cell wall

Registration & Free participation

To register please visit: ZELCOR.eu/summerschoolregistration2021

Scientific committee

S. Baumberger (*AgroParisTech*)

C. Faulds (*INRAE*)

R. Gosselink (*WFBF*)

M. Osterberg (*Aalto University*)

Institut Jean-Pierre Bourgin, INRAE, Versailles, France

Summer school coordination

Stéphanie Baumberger

INRAE Centre de Versailles-Grignon

Professor AgroParisTech

Route de St-Cyr, 78026 Versailles Cedex, France

Contact

+33 (0)130 83 37 78

stephanie.baumberger@inrae.fr



www.zelcor.eu