



Biorefining for novel furanic compounds

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GROWING A GREEN FUTURE
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Biorefining for novel furanic compounds

Fossil



Renewable



- CO₂
- Geopolitics
- NOVEL products

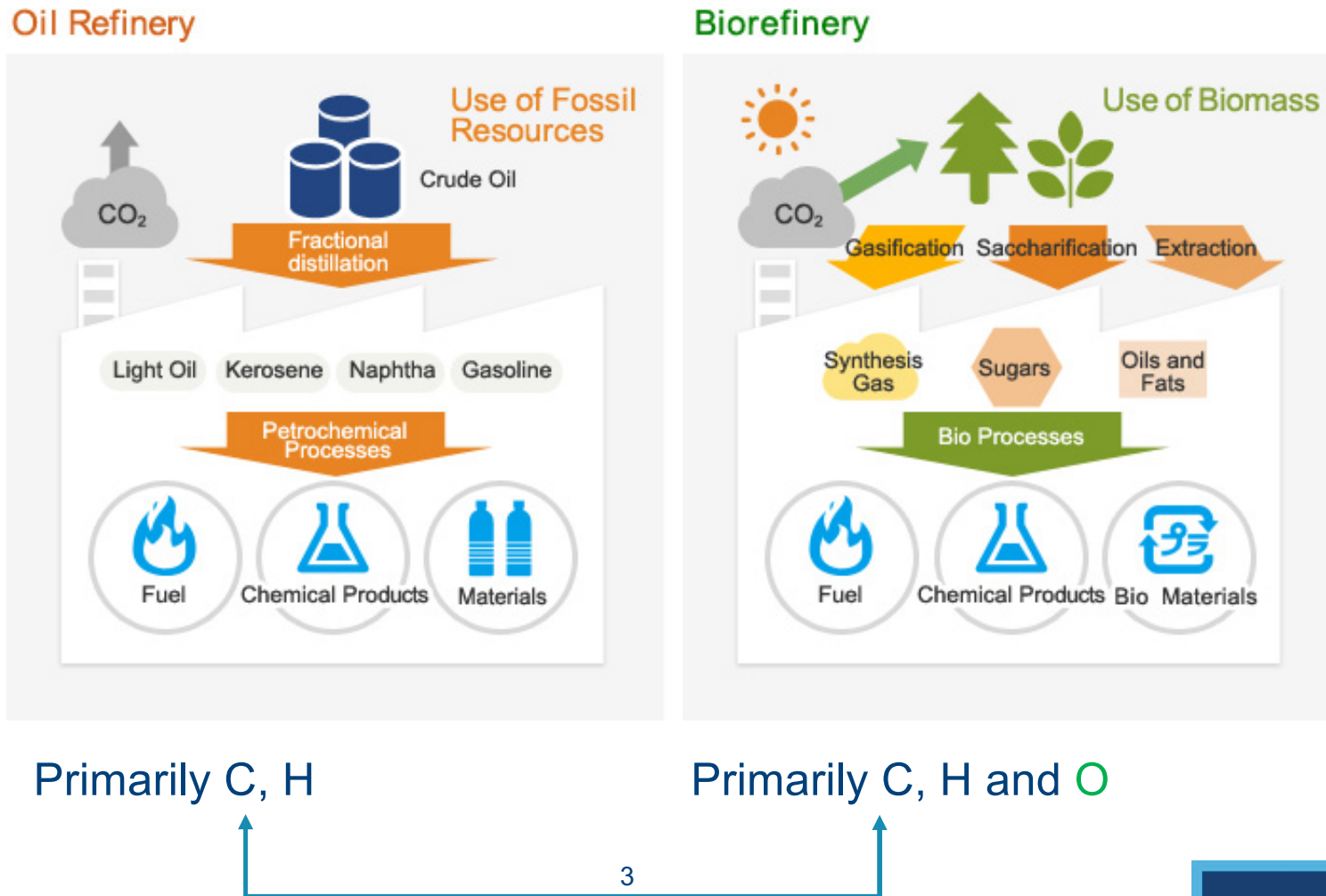


4.5 billion tons oil

10 billion tons biomass

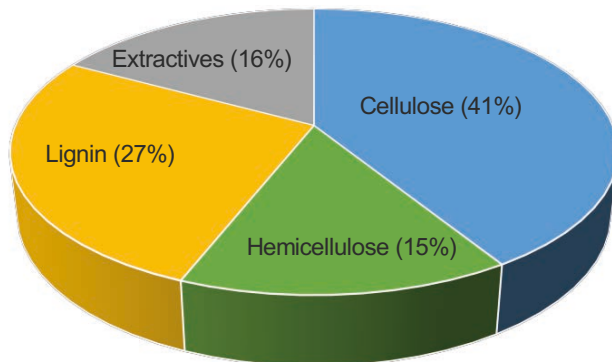


Biorefining for novel furanic compounds

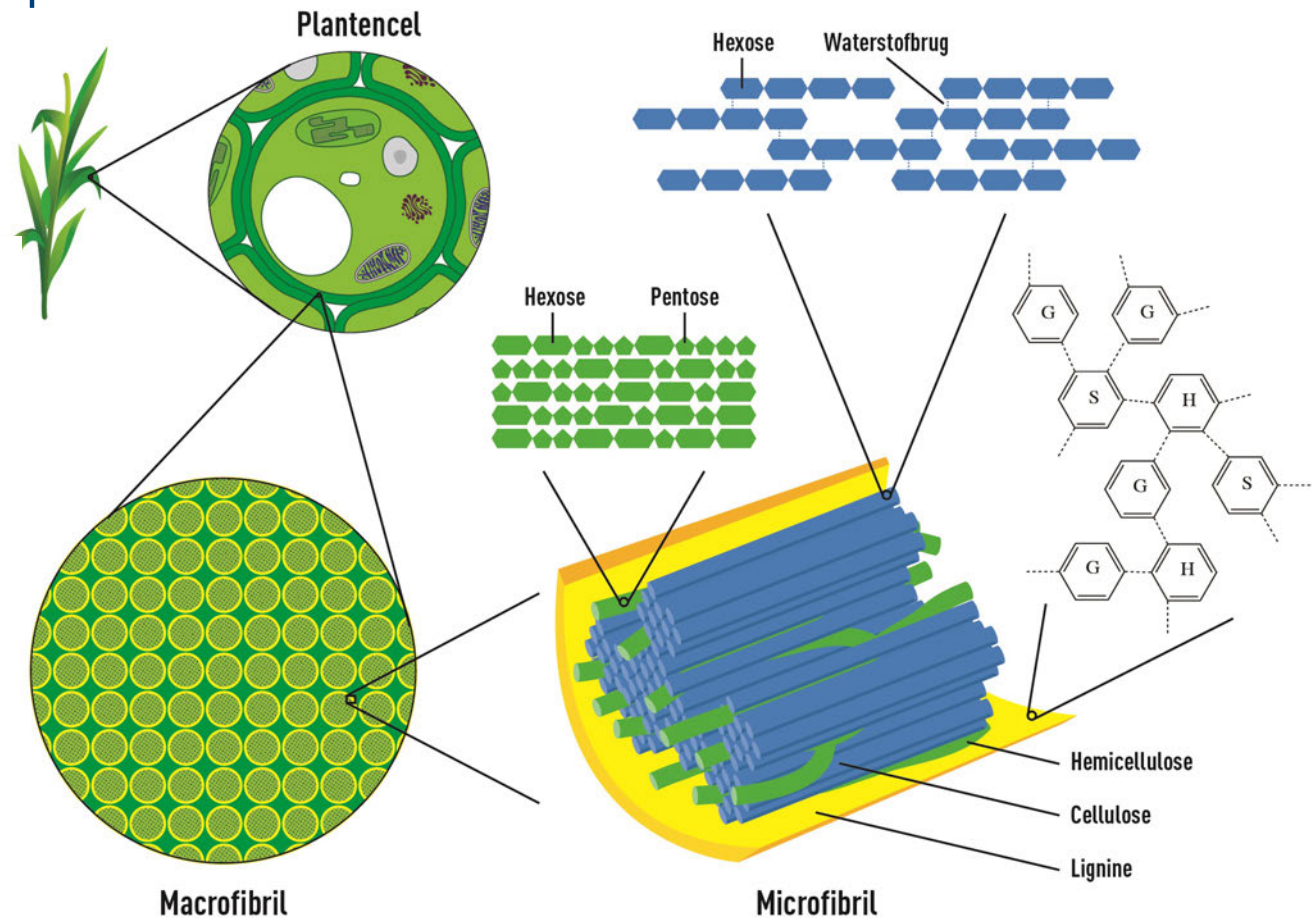


Biorefining for novel furanic compounds

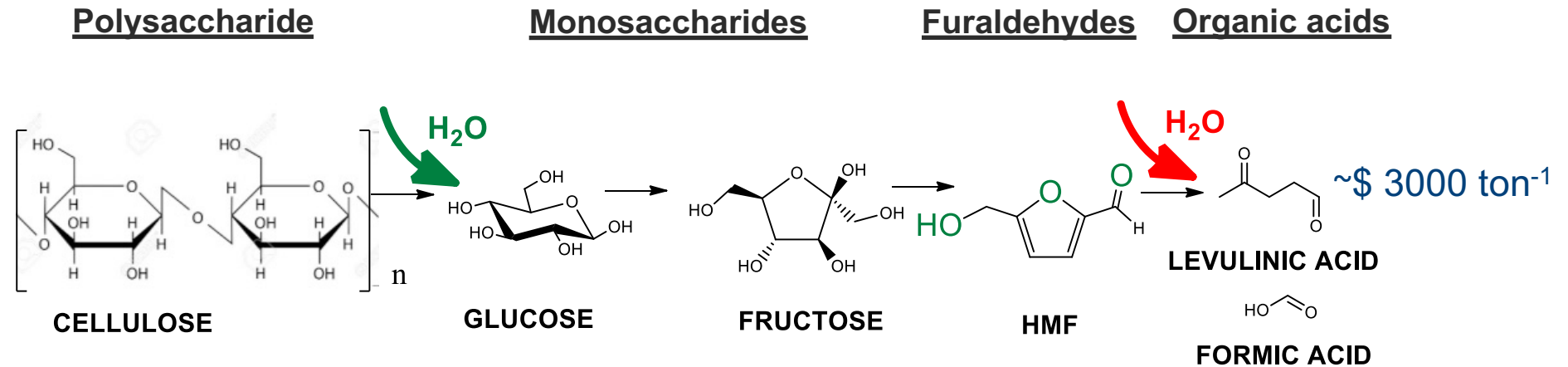
Biomass = complex composition



Bamboo



Biorefining for novel furanic compounds

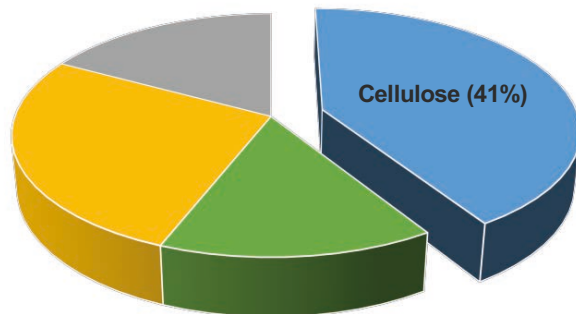
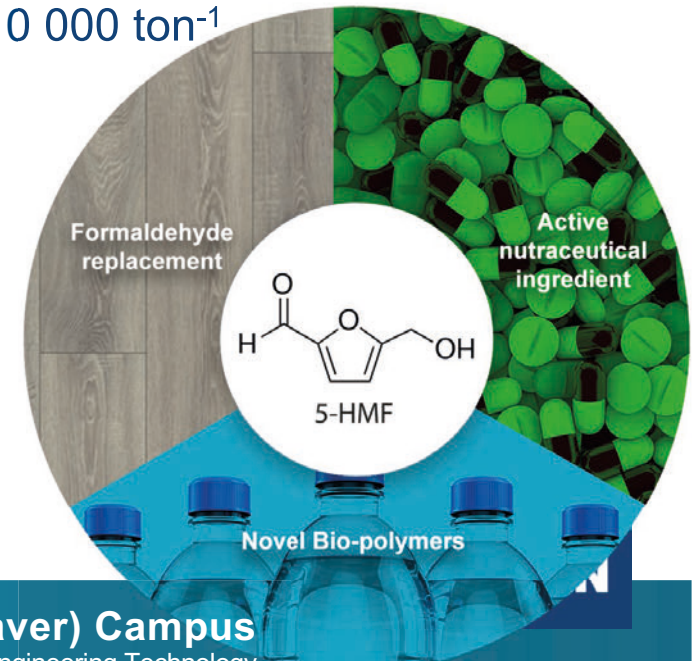


\$ 430 ton⁻¹

\$ 400-450 ton⁻¹

\$ 1000 ton⁻¹

>\$10 000 ton⁻¹

Formaldehyde replacement

Active nutraceutical ingredient

5-HMF

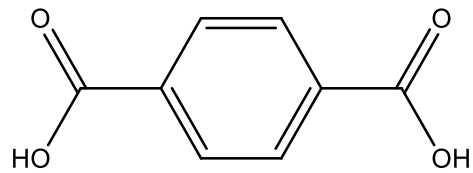
Novel Bio-polymers

Biorefining for novel furanic compounds

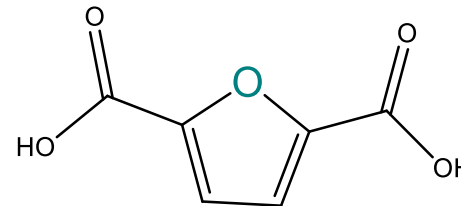
Fossil



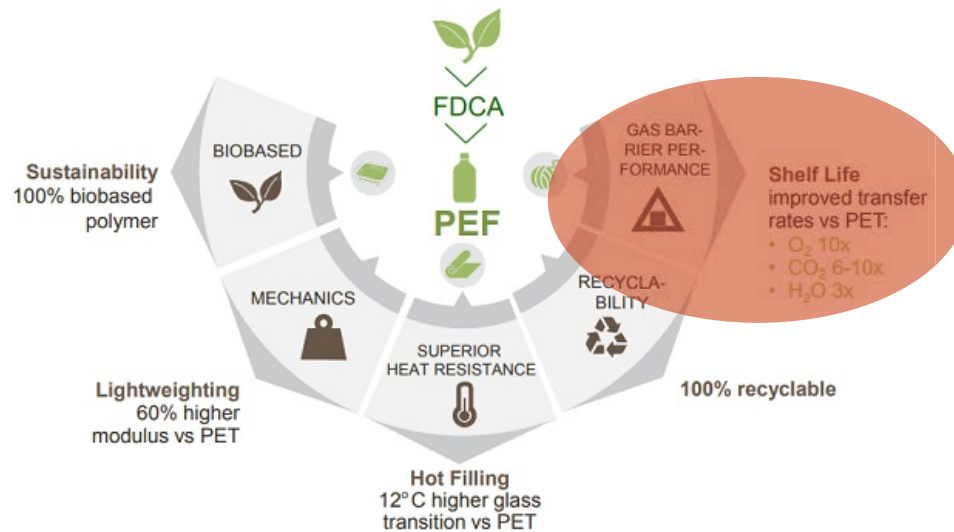
Renewable



PET

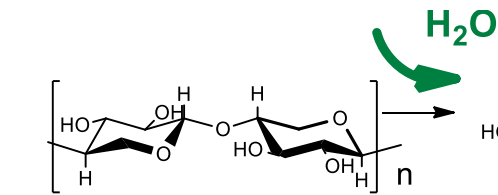


PEF



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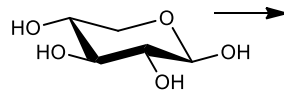
Polysaccharide



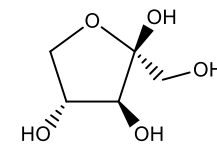
HEMICELLULOSE / XYLAN

\$ 465-475 ton⁻¹

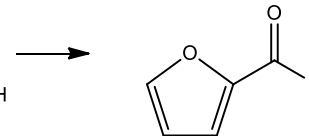
Monosaccharides



XYLOSE

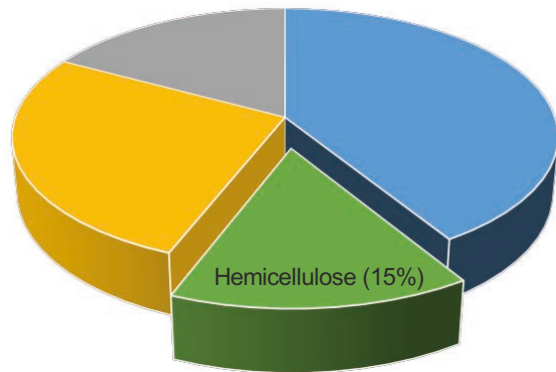


XYLULOSE

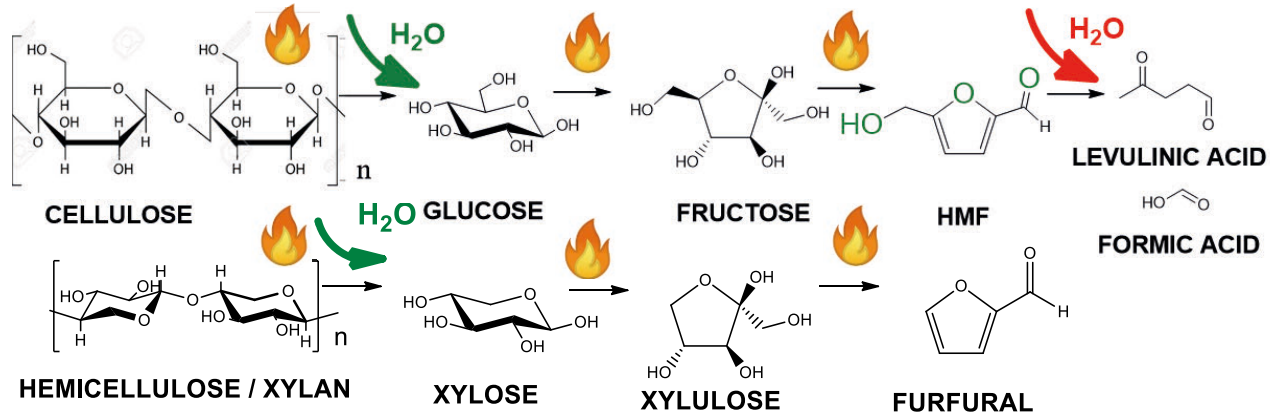


FURFURAL

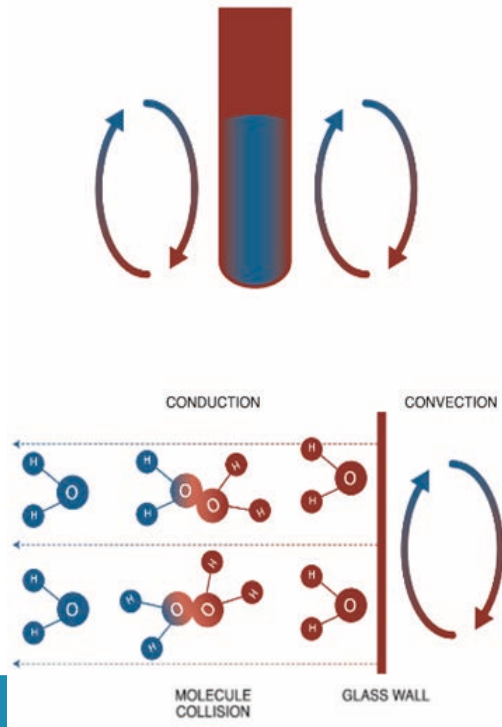
\$ 800-1500 ton⁻¹



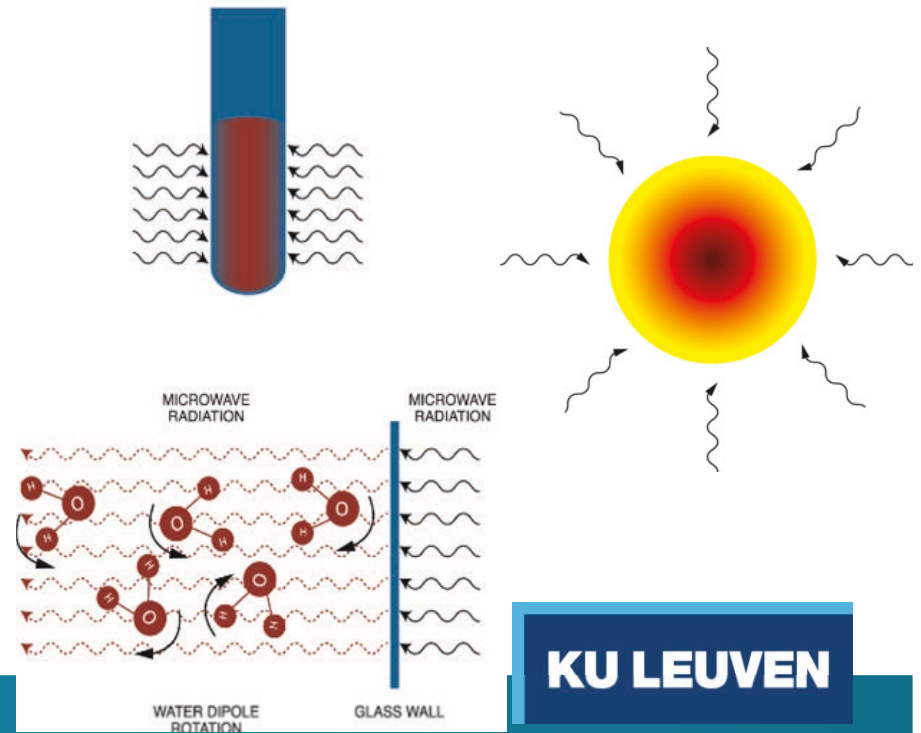
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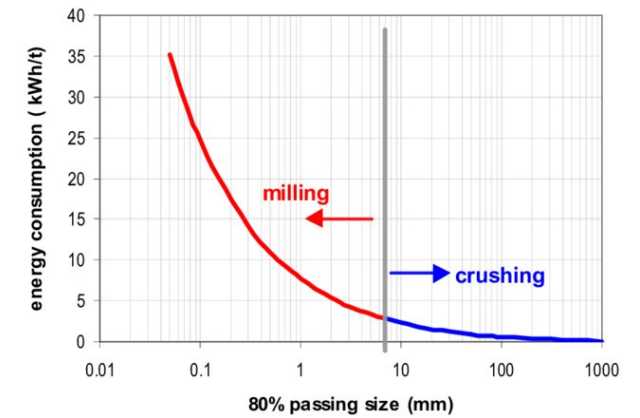
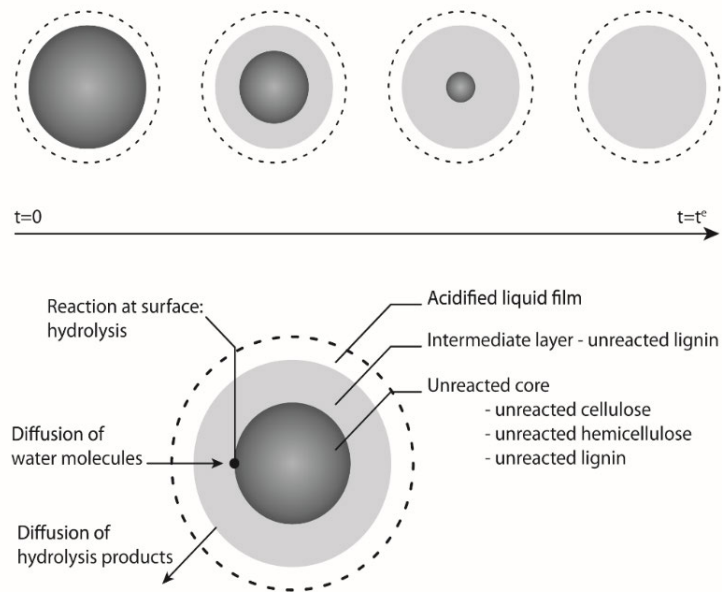
Conventional heating



Microwave heating



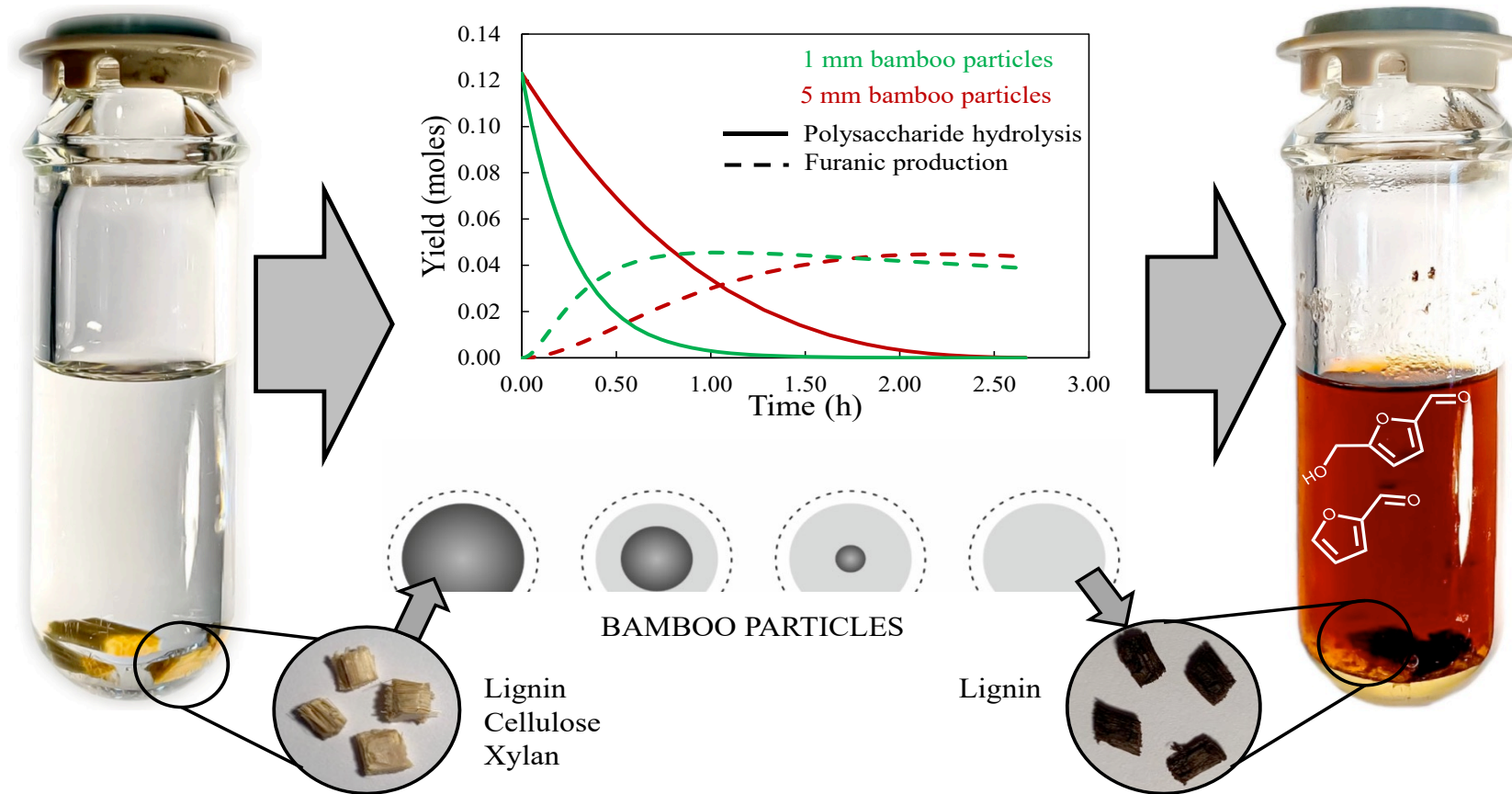
Biorefining for novel furanic compounds



(Valery et al, 2002)



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Thank you for your attention!