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NICOLAS BROSSE

Editor PPT

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# BIOGRAPHY

- Dr. Nicolas Brosse is currently a research group leader in LERMAB (laboratory dedicated to wood material). He is an organic chemist with experience in multiple areas of organic synthesis, characterization of organic compounds and solid phase synthesis. His current interests include lignocellulosics pretreatment, polyphenolics characterizations and utilizations.
- His research interests are Green chemistry, Natural product chemistry, Bioremediations, Biofuels, Bioplastics, Biomass, Lignin.

# RECENT PUBLICATIONS

- Nonviho G., Paris C., Muniglia L., Sessou P, Agbangnan D.C.P., Brosse N (2014) Chemical characterization of *Lophira lanceolata* and *Carapa procera* seed oils: Analysis of Fatty Acids, Sterols, Tocopherols and Tocotrienols. *Research Journal of Chemical Sciences*.
- Afidah Abd Rahim, Mohamad Nasir Mohamad Ibrahim, Dominique Perrin, Nicolas Brosse (2014) Antioxidant and anti corrosive properties of oil palm frond lignins extracted with different techniques. *Annals of Forest Science*.
- Mohamad Nasir Mohamad Ibrahim, Dominique Perrin, Mehdi Yemloul, Nicolas Brosse (2014) Impact of catalytic oil palm fronds (OPF) pulping on organosolv lignin properties. *Polymer Degradation and Stability*.

# BIOFUEL PRODUCTION

## SECOND GENERATION FUELS

- Wide range of input feed stocks
    - Woody biomass, waste, energy dedicated crops
  - Generally lower cost feed stocks
  - Non-food crops so less competition with food
  - Can use whole crops so get better land use and energy balance
  - Example of feedstocks : miscanthus, oil palm biomass, wood saw dust...
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# OVERVIEW OF BIOFUEL PRODUCTION TECHNOLOGIES

## SECOND/THIRD GENERATION BIOFUELS

Biofuel type	Specific name	Feedstock	Conversion Technologies
<b>Bioethanol</b>	Cellulosic bioethanol	Lignocellulosic biomass and biowaste	Advanced hydrolysis & fermentation
<b>Biogas</b>	SNG (Synthetic Natural Gas)	Lignocellulosic biomass and residues	Pyrolysis/Gasification
<b>Biodiesel</b>	Biomass to Liquid (BTL), Fischer-Tropsch (FT) diesel, synthetic (bio)diesel	Lignocellulosic biomass and residues	Pyrolysis/Gasification & synthesis
<b>Other biofuels</b>	Biomethanol, heavier (mixed) alcohols, biodimethylether (Bio-DME)	Lignocellulosic biomass and residues	Gasification & synthesis
<b>Biohydrogen</b>		Lignocellulosic biomass and biowaste	Gasification & synthesis or biological process

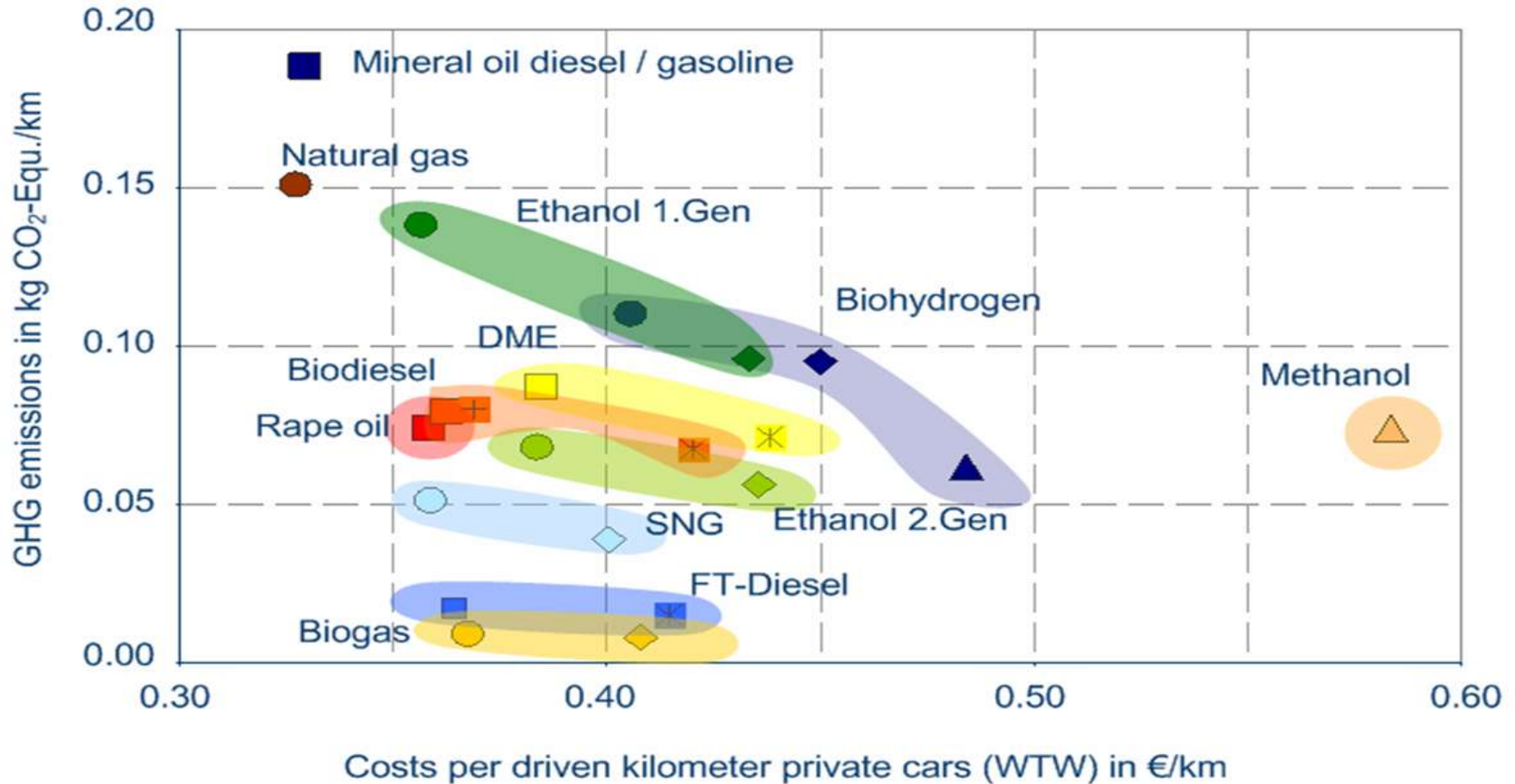


# PRETREATMENT TECHNOLOGIES

Essential step to improve the enzyme digestibility of lignocellulosic feedstocks for cellulosic ethanol production

- Organosolv pretreatment
- Soda pretreatment

# COMPARISON OF TECHNOLOGIES ECONOMIC VERSUS ENVIRONMENTAL ASPECTS



# RELATED JOURNALS

Chemical Sciences Journal

Chemical Engineering & Process Technology

SIGNATURE:

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