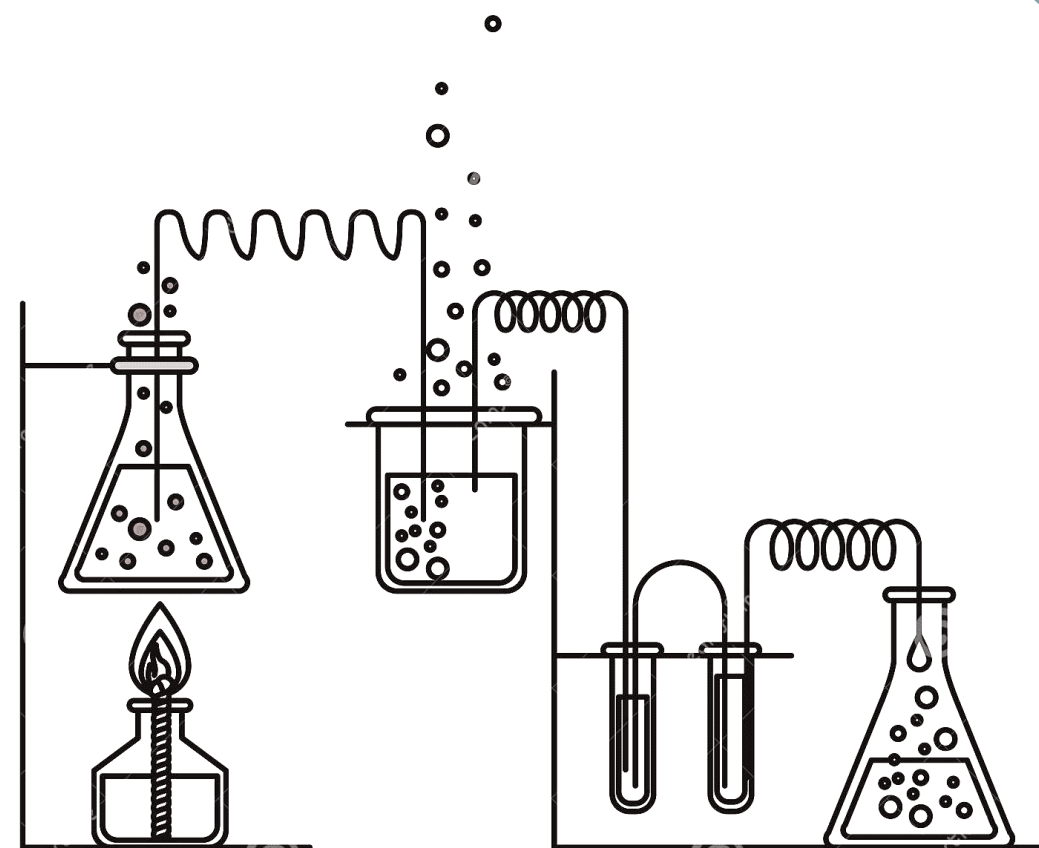
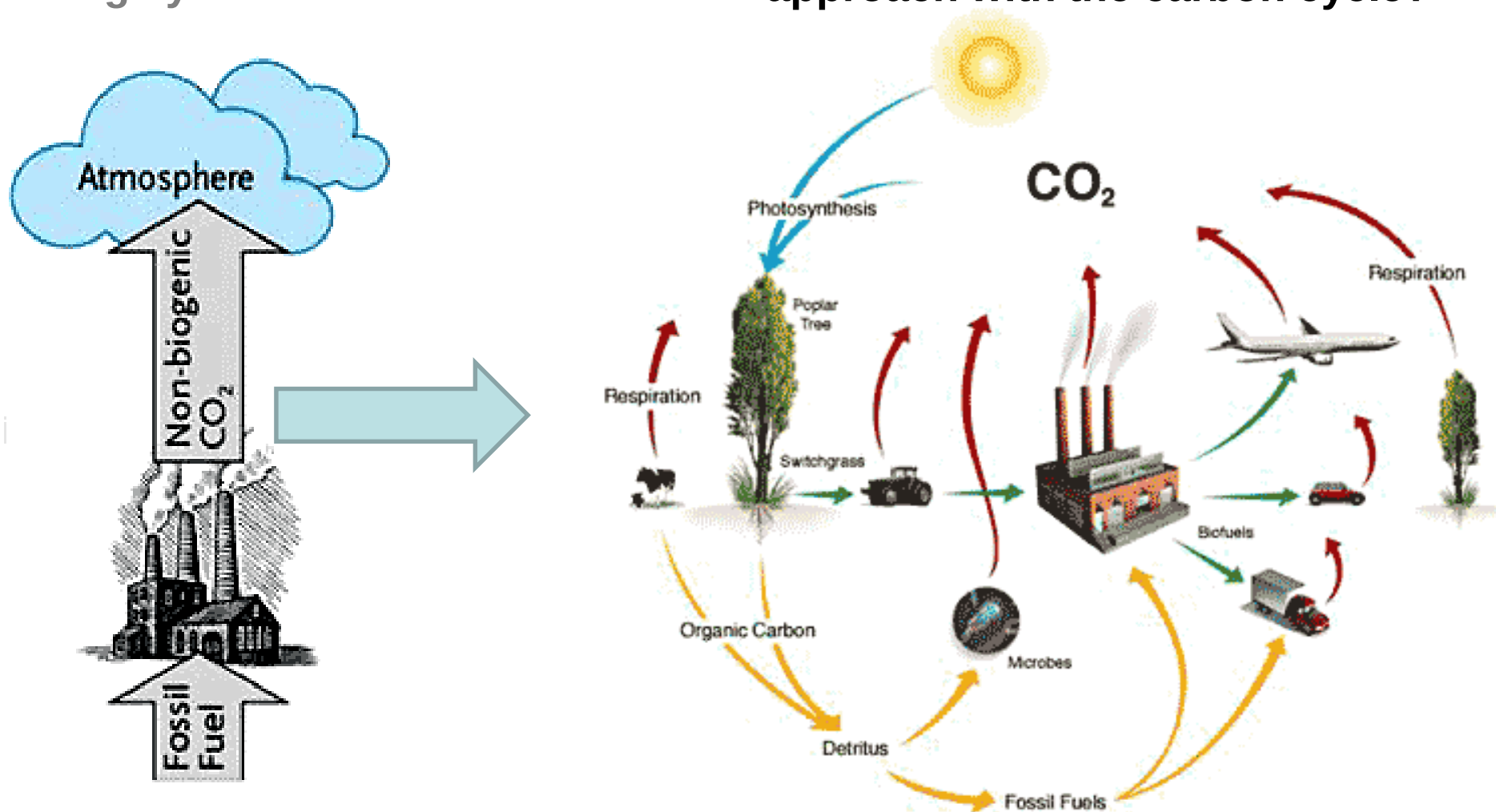


Organic Process Research Lab

*1st Topic:
Process Sustainability*

*2nd Topic:
New Process Methodology*

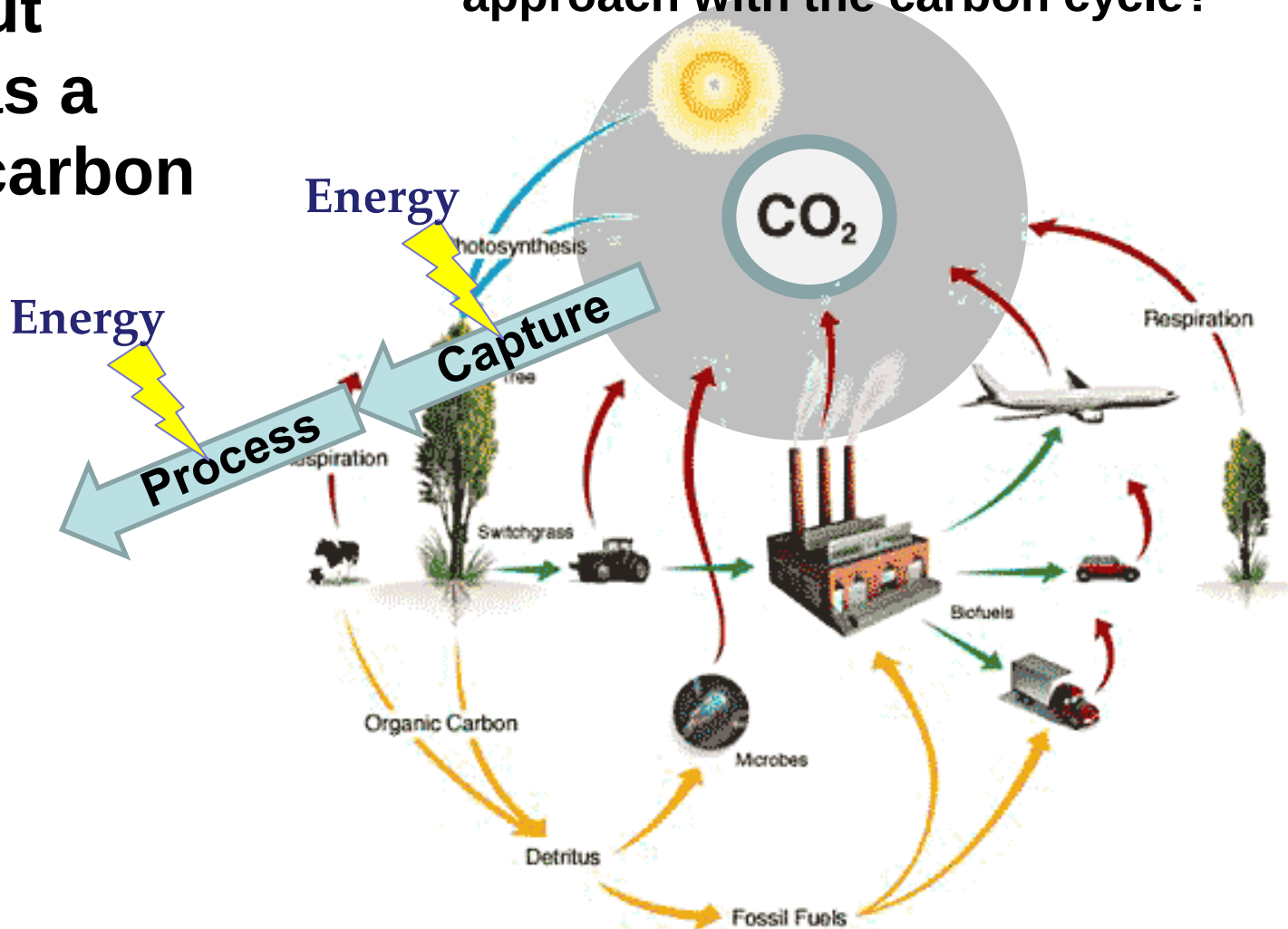




1st Topic: Process Sustainability

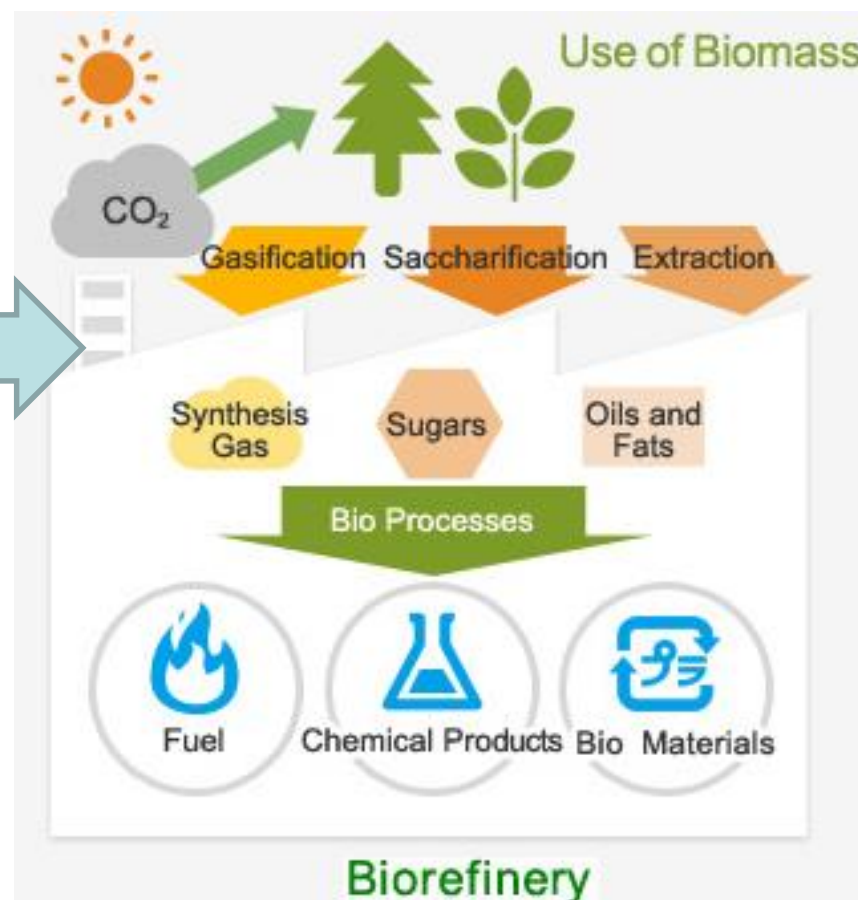
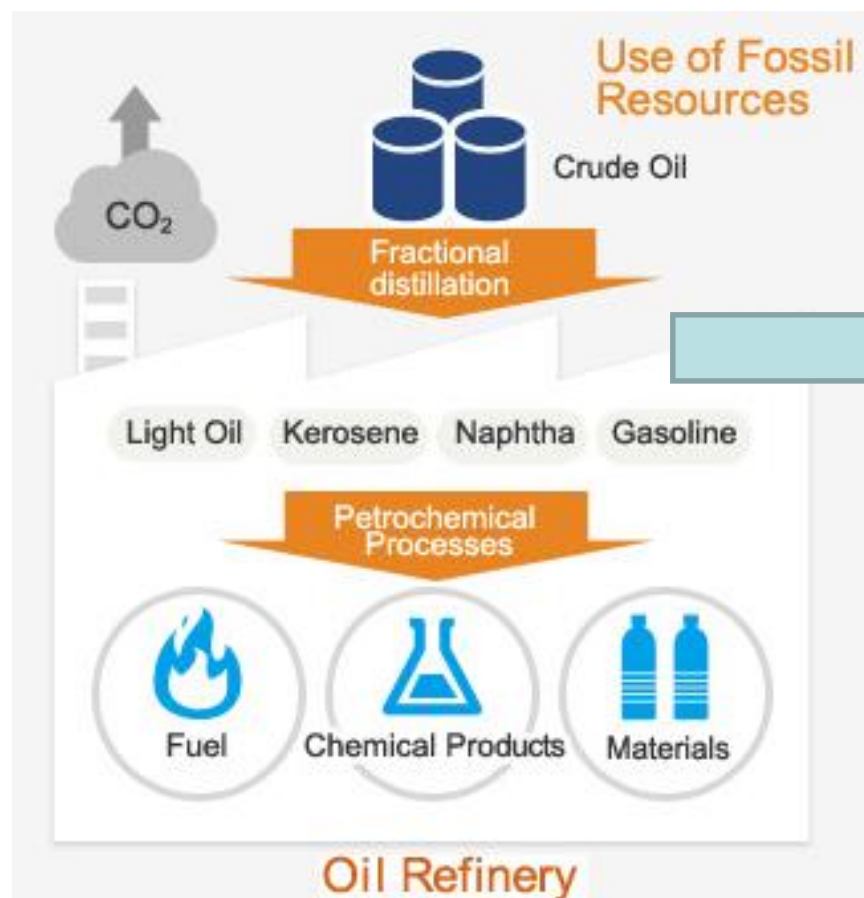
What's about
using CO₂ as a
renewable carbon
resource?

How can we change our
approach with the carbon cycle?



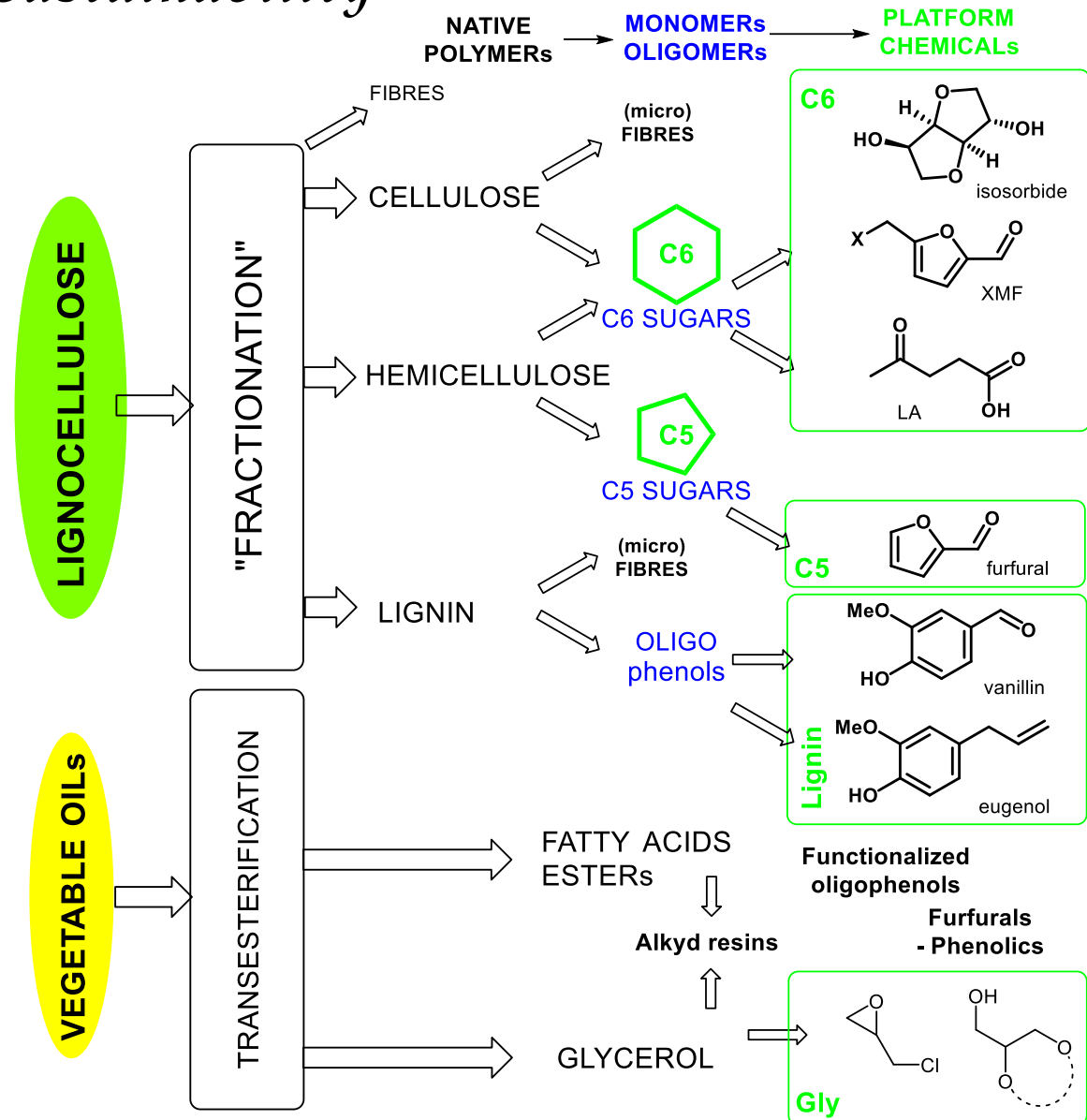
1st Topic: Process Sustainability

CO₂ nature-based fixation: 2nd gen biorefineries



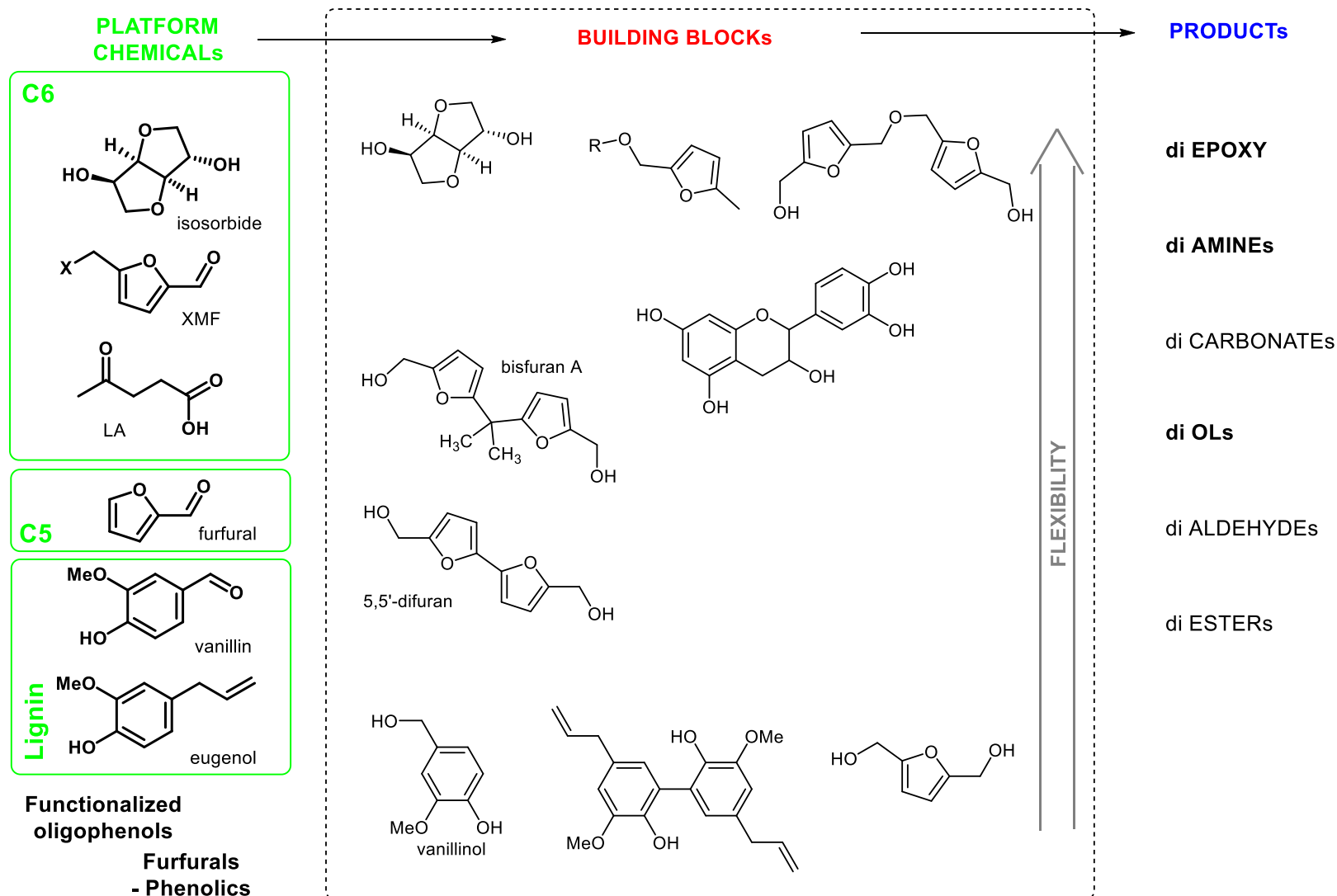
1st Topic: Process Sustainability

2nd gen biorefineries



1st Topic: Process Sustainability

2nd gen biorefineries

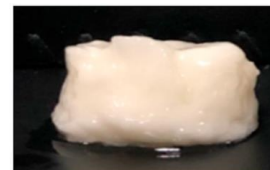
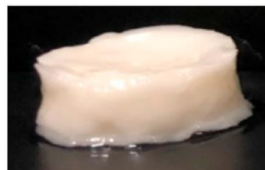
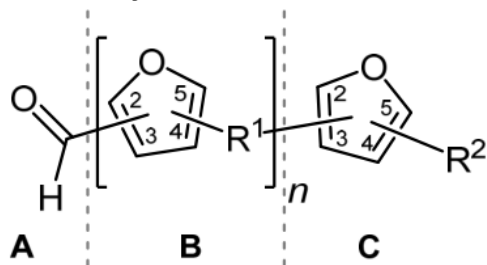


1st Topic: Process Sustainability

2nd gen biorefineries

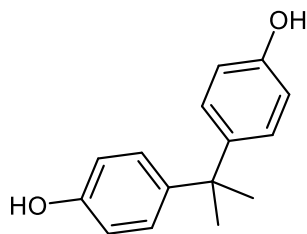
New Bio-based Products.

Es. Formaldehyde-free AMINO Resins

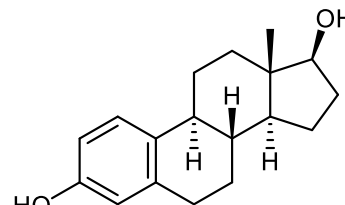


Bio-based Building Blocks

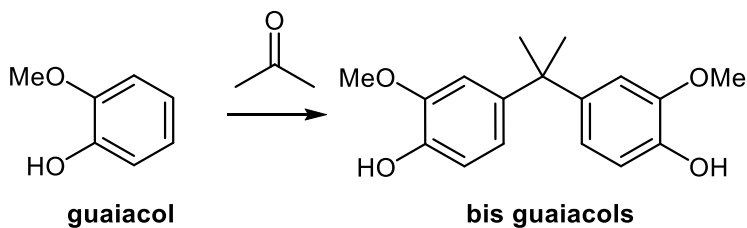
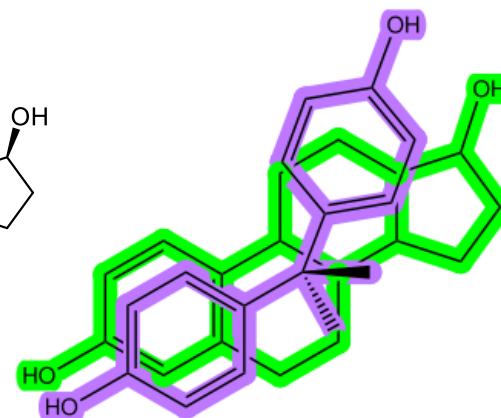
Es. Bisphenol A substitution?



bisphenol A



estradiol



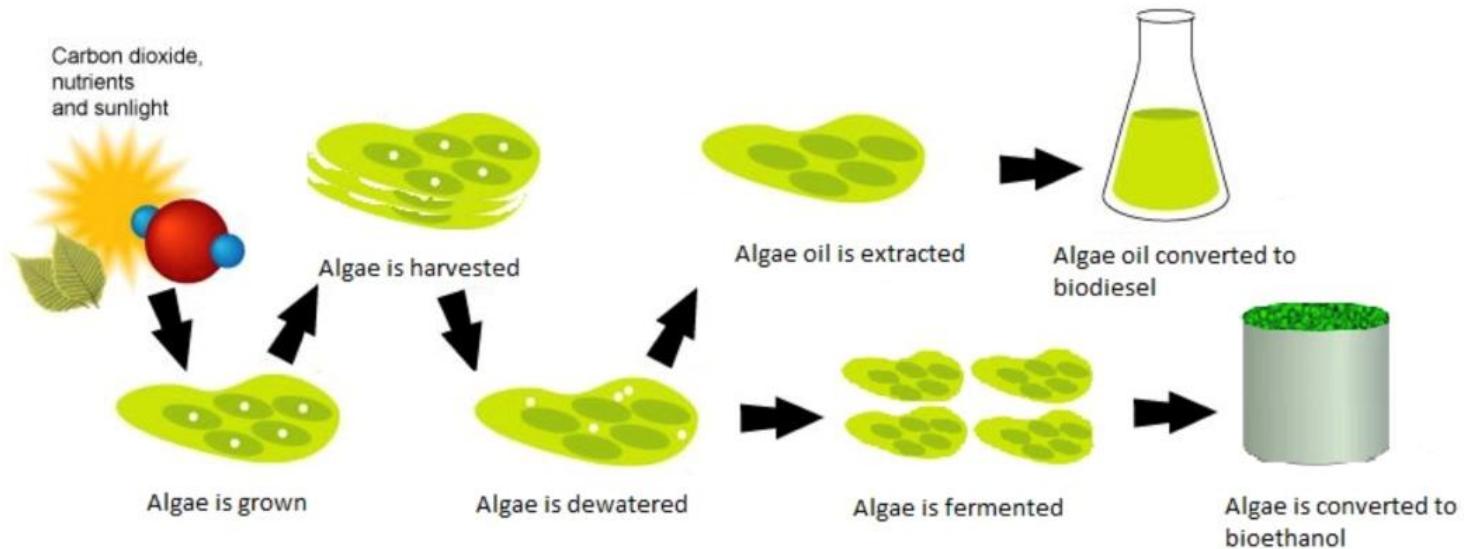
guaiacol

bis guaiacols

1st Topic: Process Sustainability

CO₂ nature-based fixation: 3rd gen biorefineries

CO₂ fixation with microalgae



Dr. Alberto Ughetti

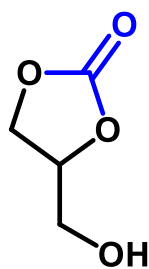
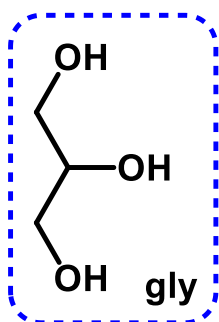
2nd Topic: New Process Methodology

Flow chemistry

Bio-based Building Blocks

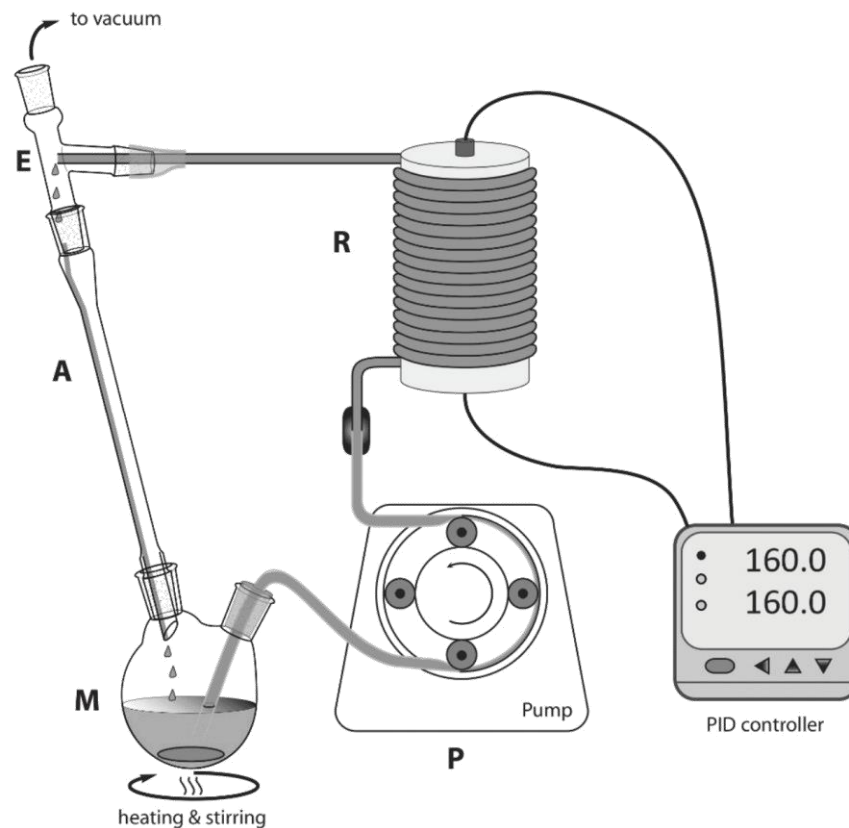
Es. Glycerol carbonate from glycerol

CO₂ chemical fixation



glycerol carbonate (GC)

Dr. Biagio Anderlini



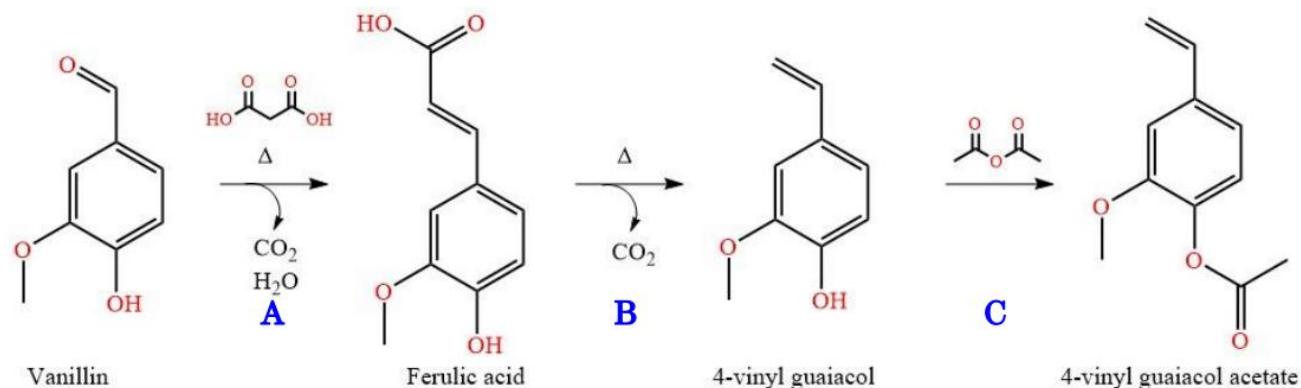
2nd Topic: New Process Methodology

Atom Transfer Radical Polymerization (ATRP)

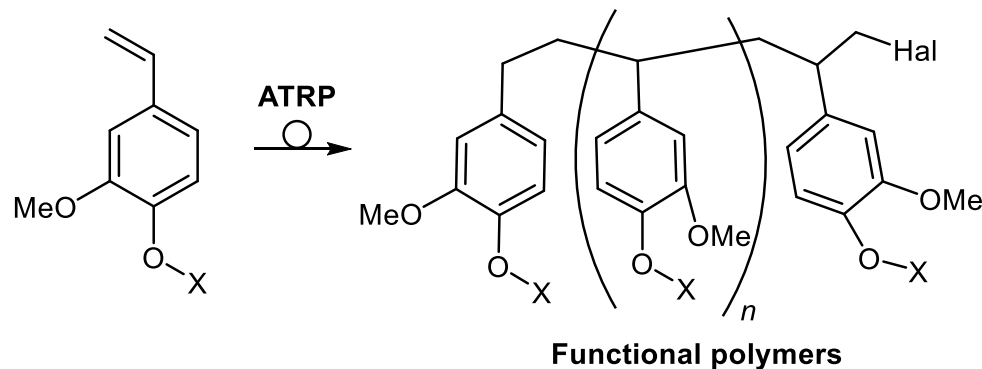
Dr. Nicola Porcelli,
in collaboration with
Prof. F. Parenti

Bio-based styrene-like monomer

Es. 4-VG from lignin (vanillin)



ATRP of 4-VG-X

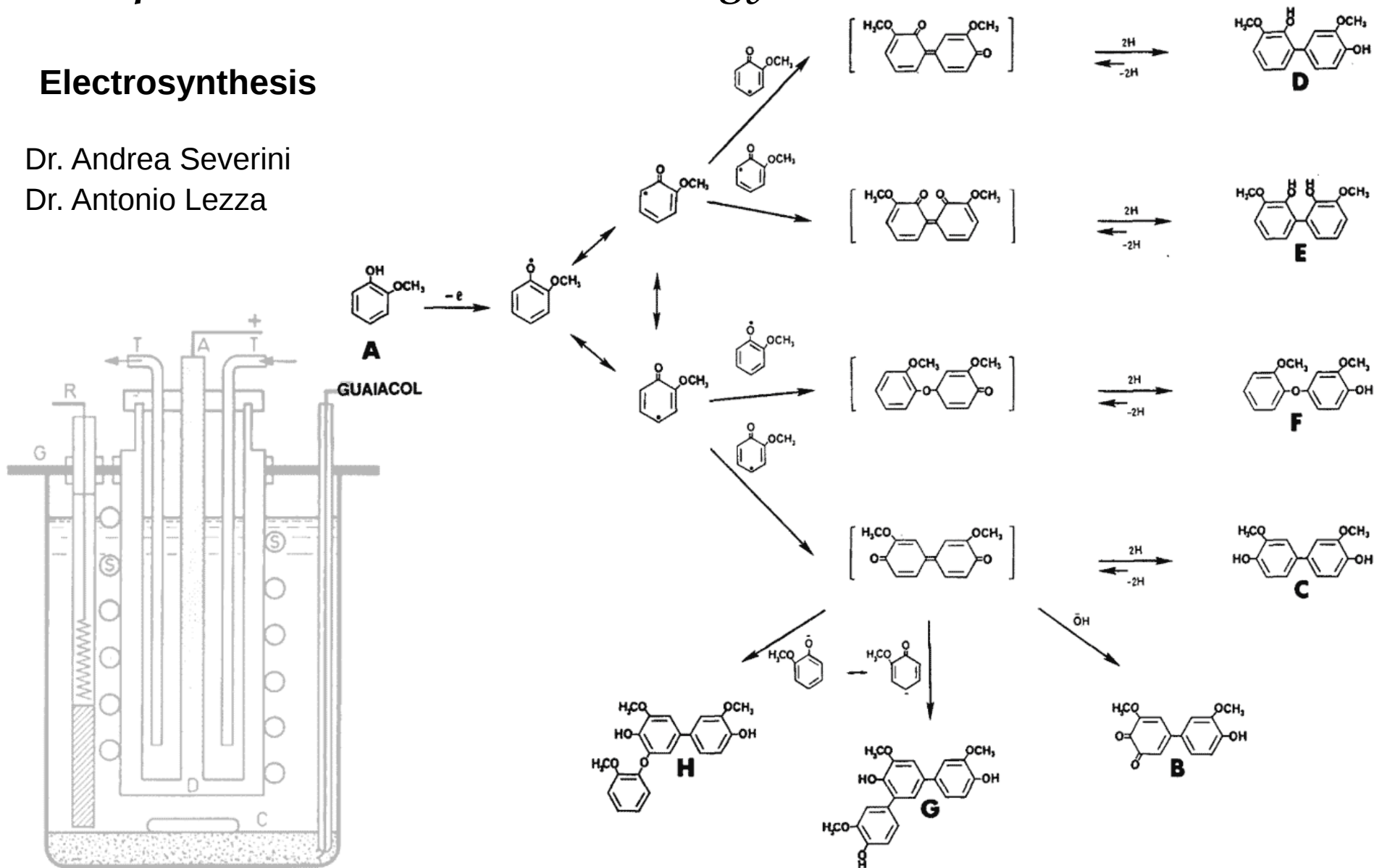


2nd Topic: New Process Methodology

Electrosynthesis

Dr. Andrea Severini

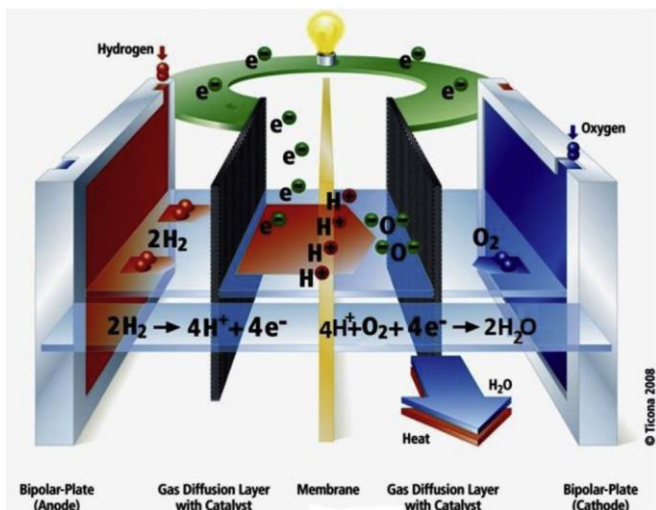
Dr. Antonio Lezza



New materials

- **Materiali compositi grafite – polimero per la costruzione di “Bipolar Plates” per PEM Fuel Cells a idrogeno.**

Dr. Antonio Lezza



Thank you for the kind attention!

