

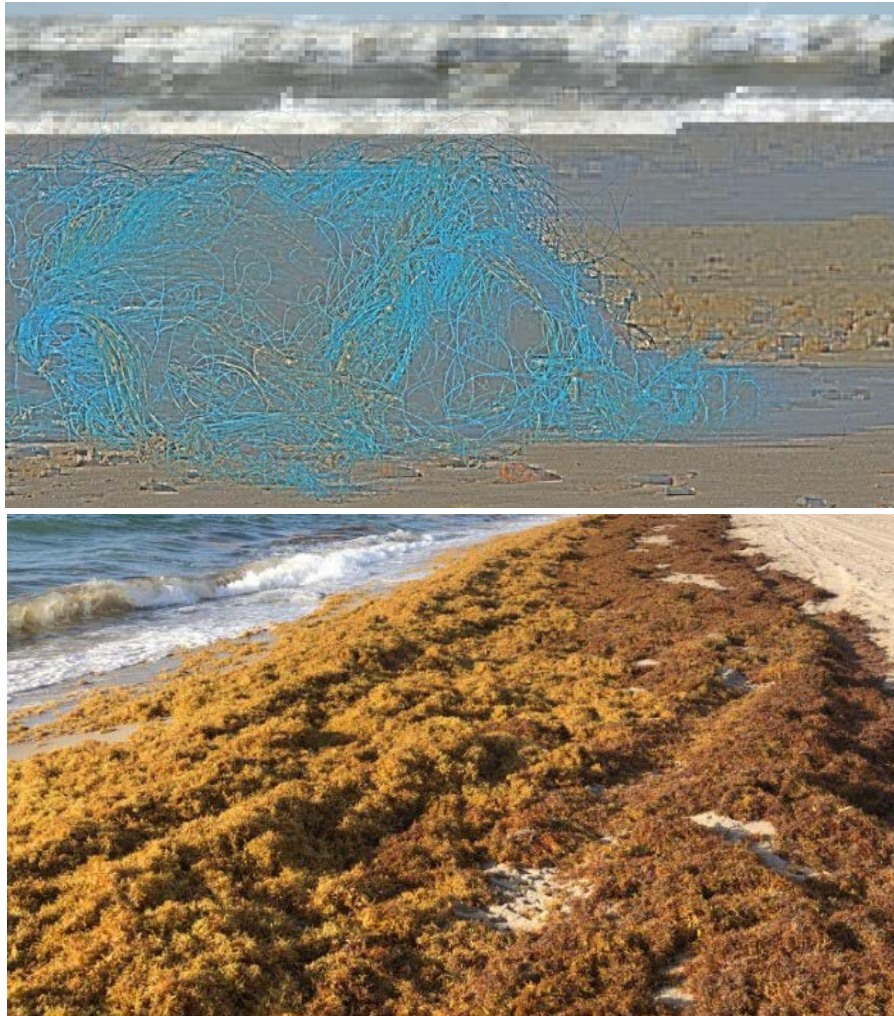
CATALYTICAL THERMAL CONVERSION OF MARINE BIOMASS AND PLASTIC WASTES FOR A HIGHER ADDED VALUE ENERGY PRODUCTS GENERATION

Lithuanian Energy Institute
Laboratory of Combustion processes(13)

Justas Eimontas, Nerijus Striūgas, Kęstutis Zakarauskas,
Ieva Kiminaitė



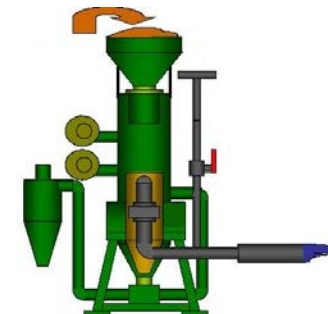
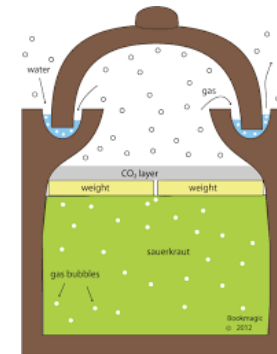
Environmental issues



AD

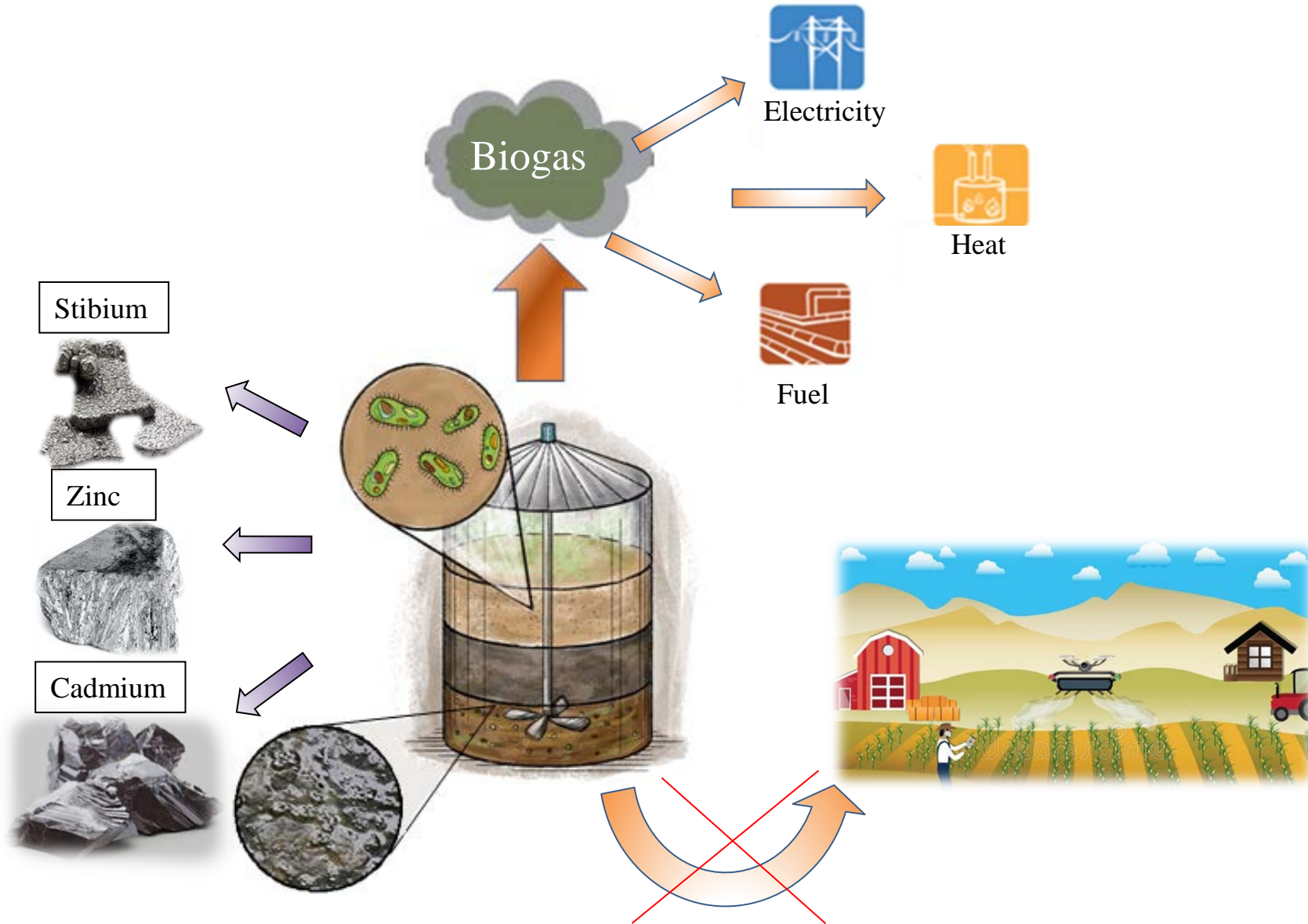
Fermentation

Pyrolysis



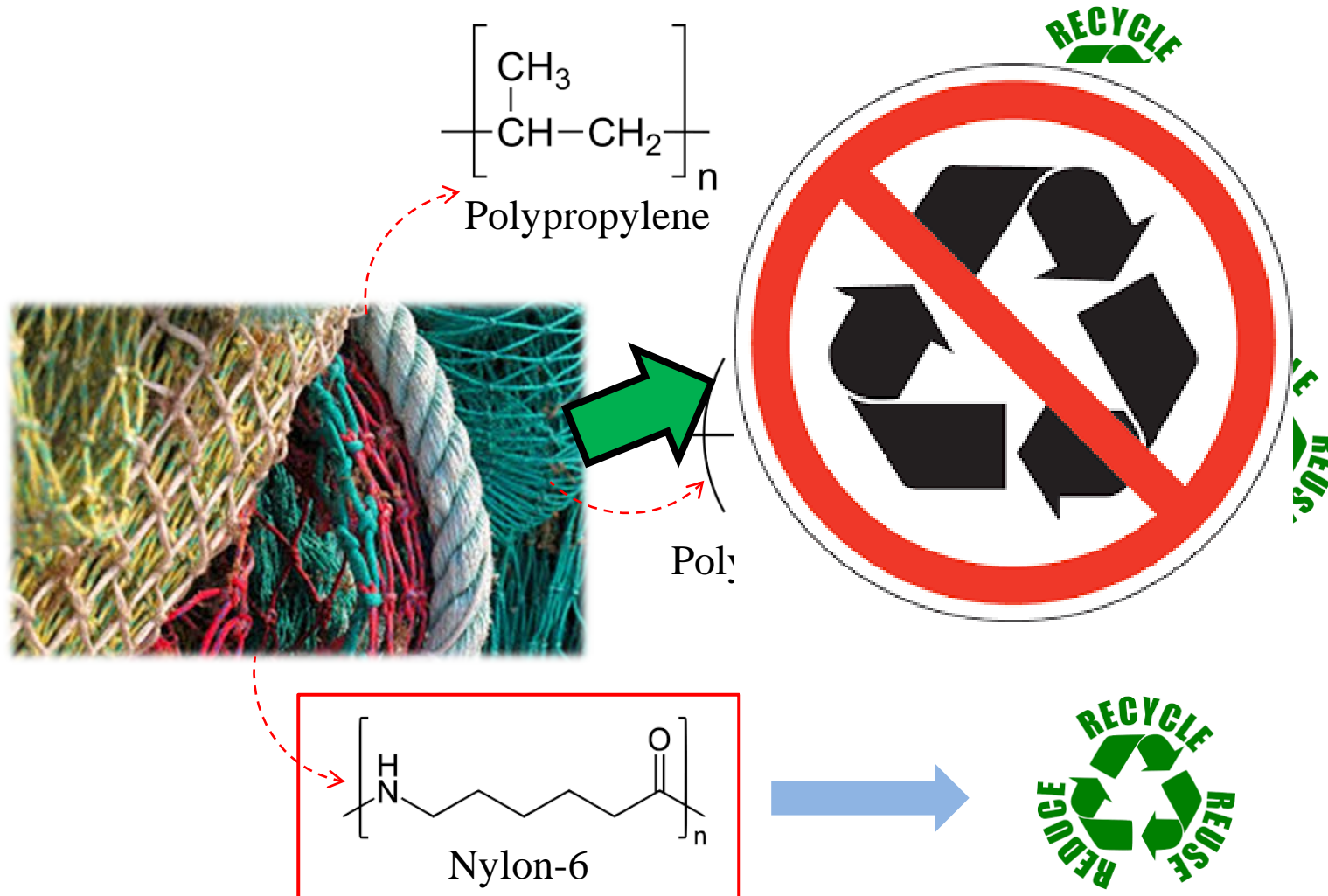


Digestion. Seaweed



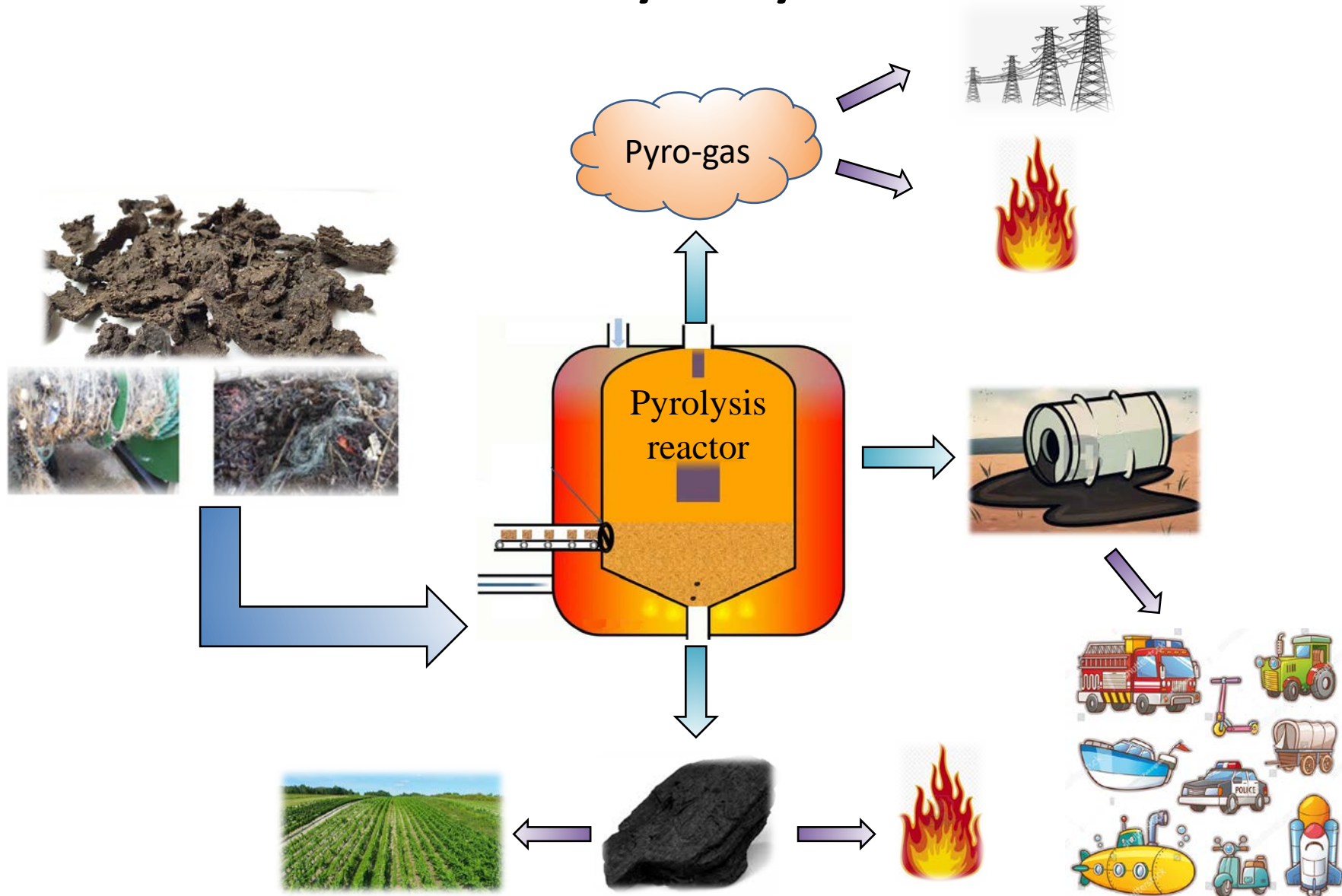


Fishing nets





Pyrolysis





Feedstock preparation

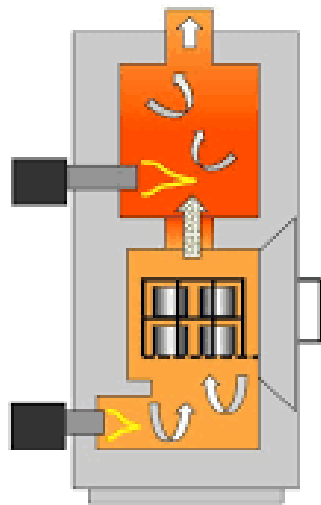
Collection



Washing



Drying



Pyrolysis



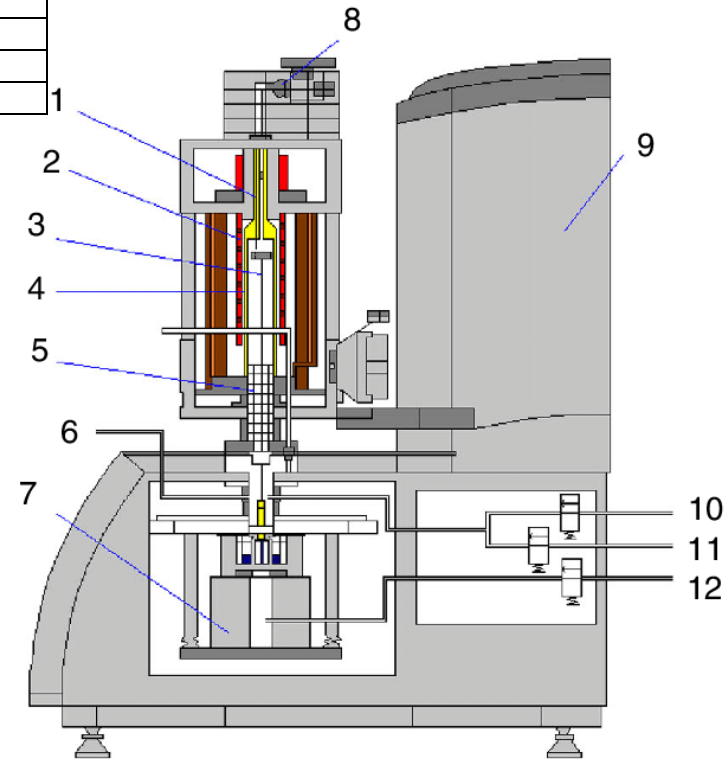


Micro-thermal analysis

| Parameter | Value |
|--------------------------|----------------------------|
| Carrier gas | Nitrogen (N ₂) |
| Carrier gas flow, ml/min | 60 |
| Maximum temperature, °C | 900 |
| Heating rate, °C/min | 30 |
| Amount of sample, mg | 10-15 |



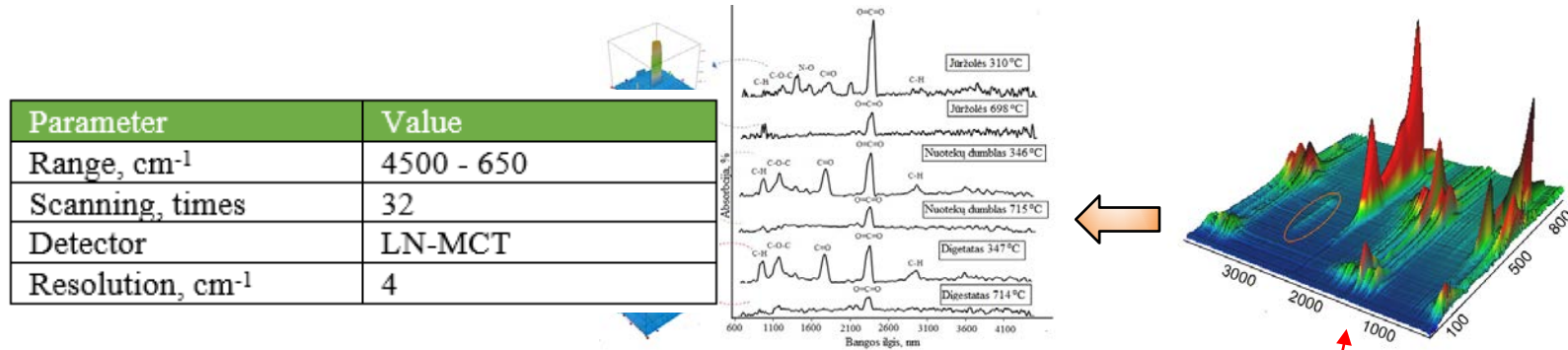
Netzsch STA F3 Jupiter



1 – furnace thermocouple, 2 – heating element, 3 – sample carrier, 4 – protective tube, 5 – radiation shield, 6 – evacuation system inlet, 7 – balance system, 8 – gas outlet valve, 9 – hoisting device, 10-12 – gas inlet.



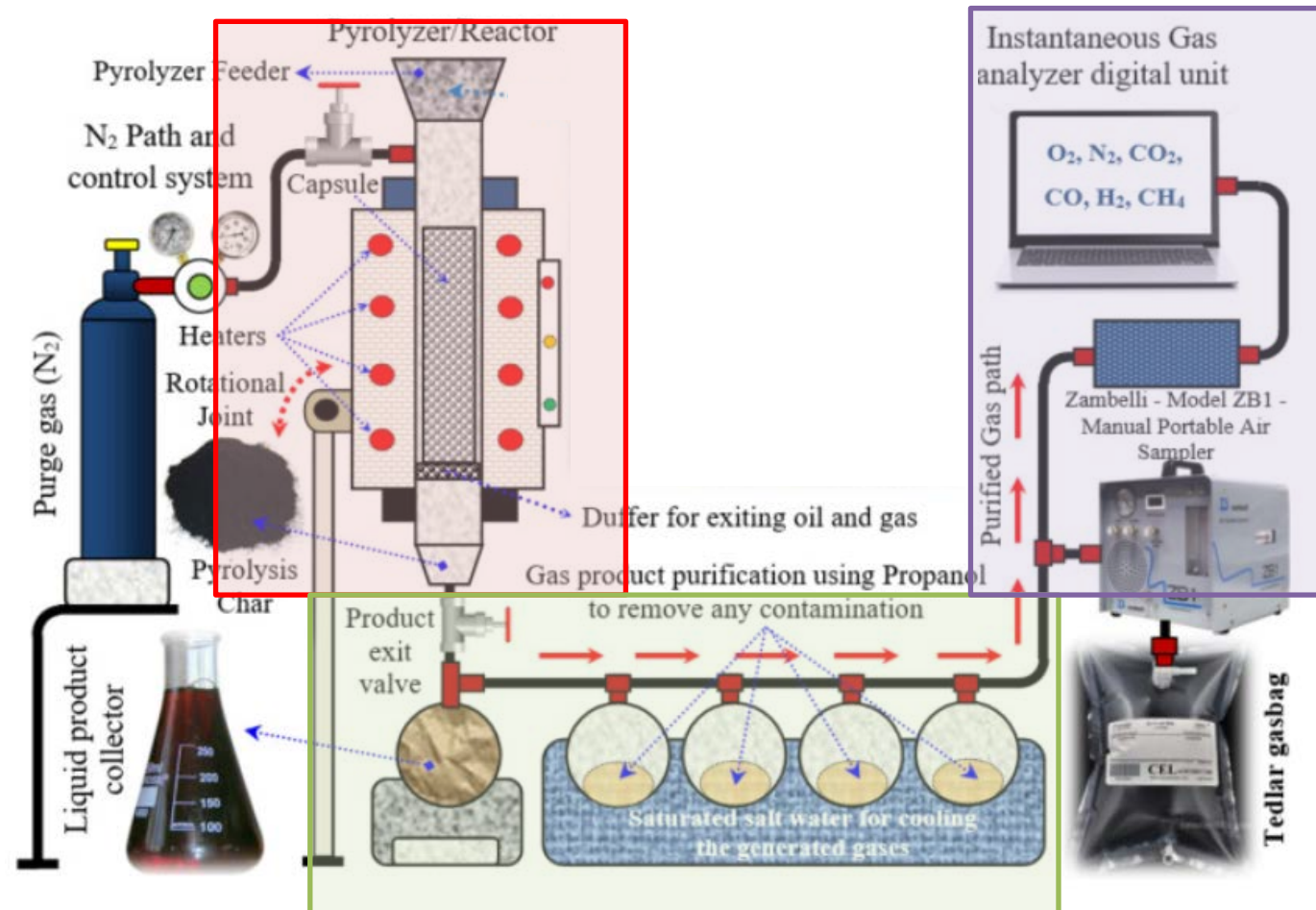
Micro-thermal analysis with FTIR



Netzsch STA F3 Jupiter combined with FTIR

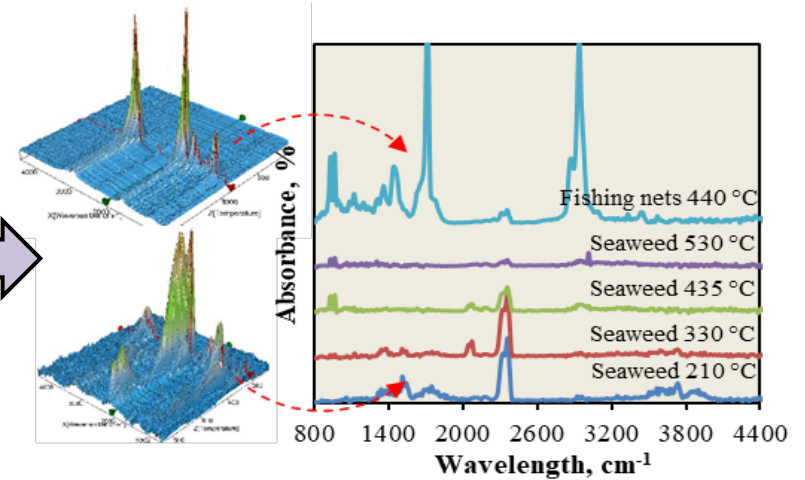
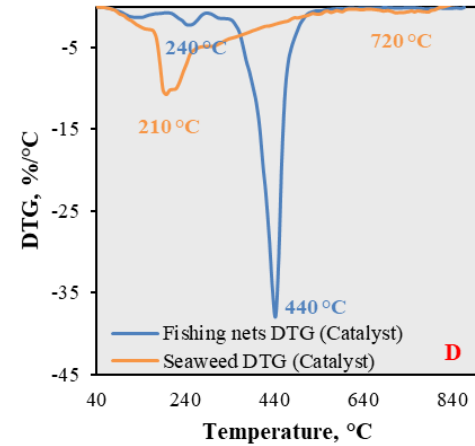
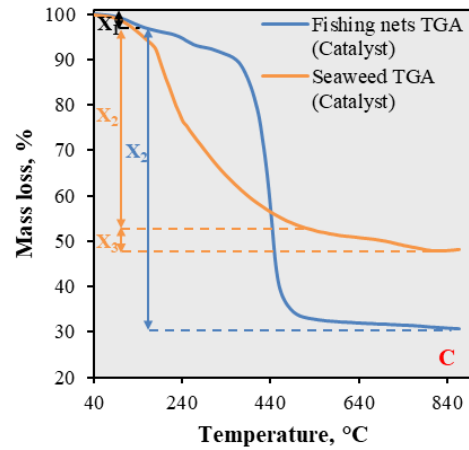
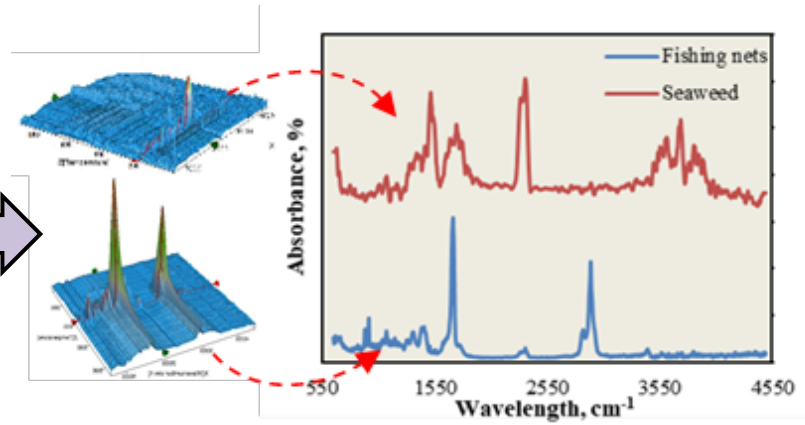
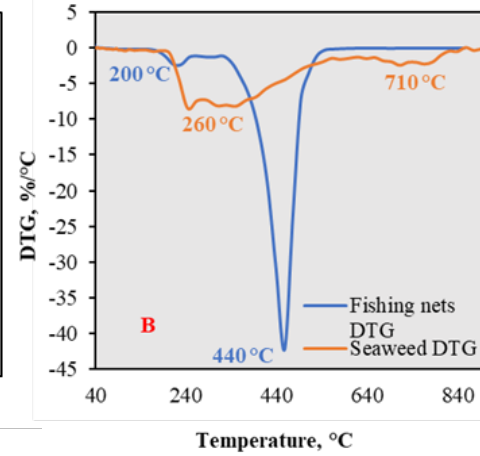
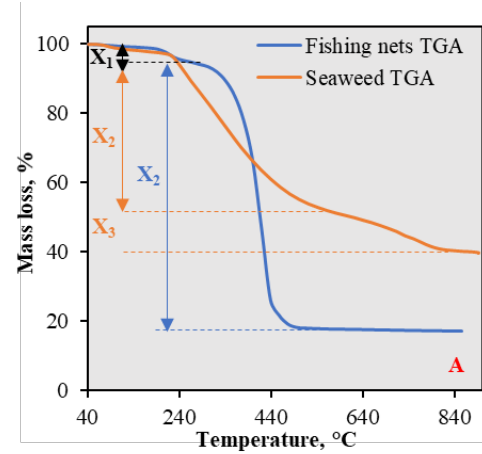


Pyrolysis at laboratory scale bench



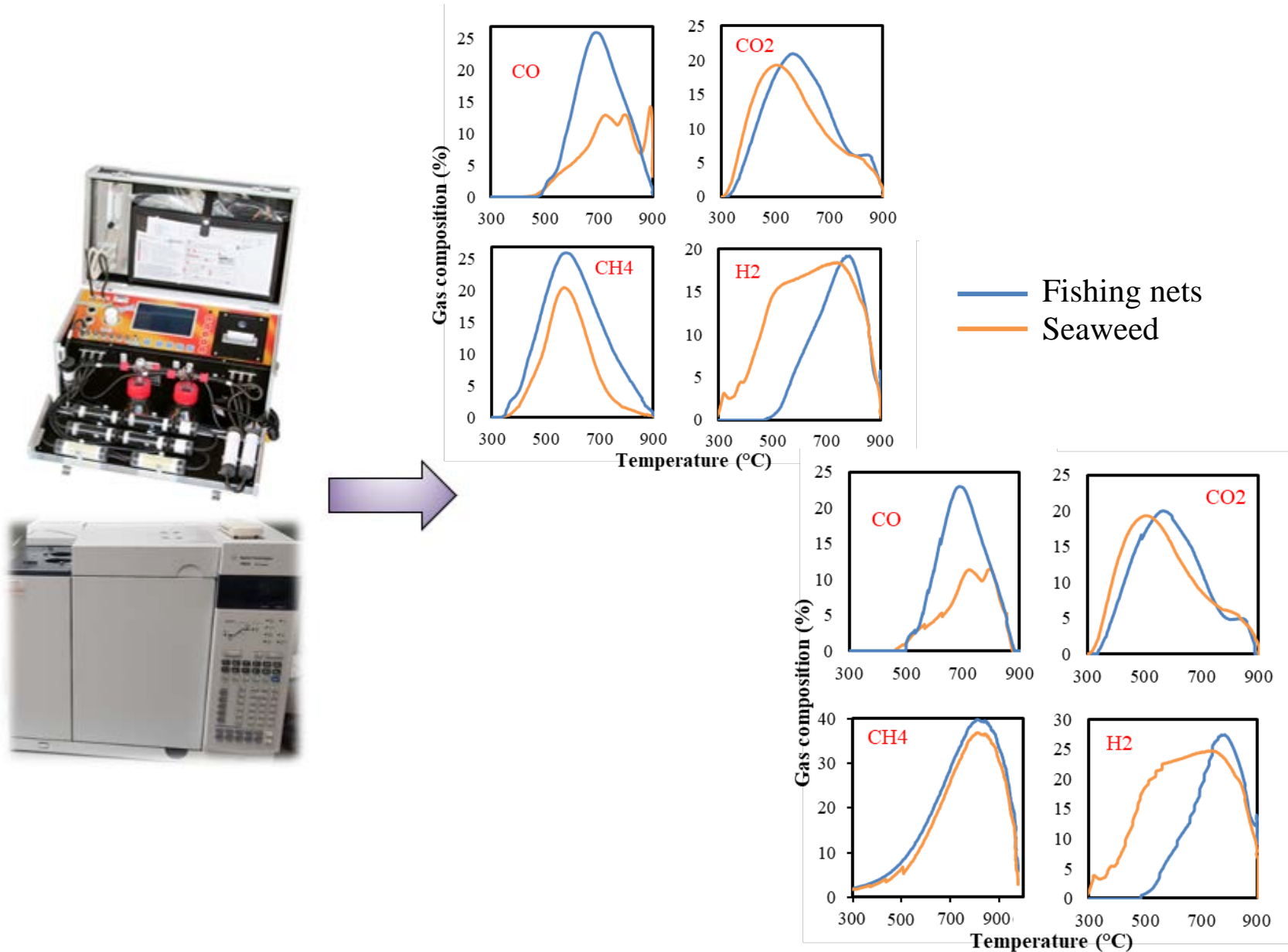


Results



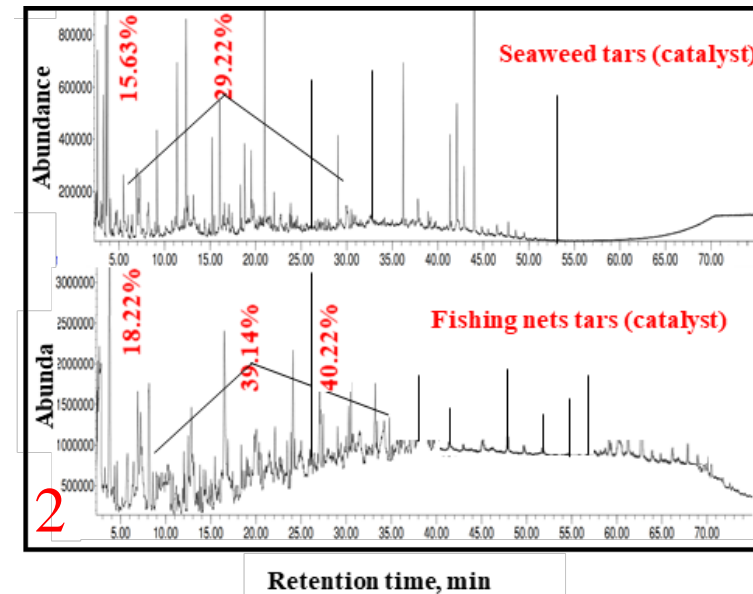
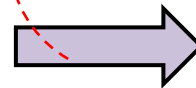
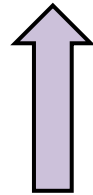
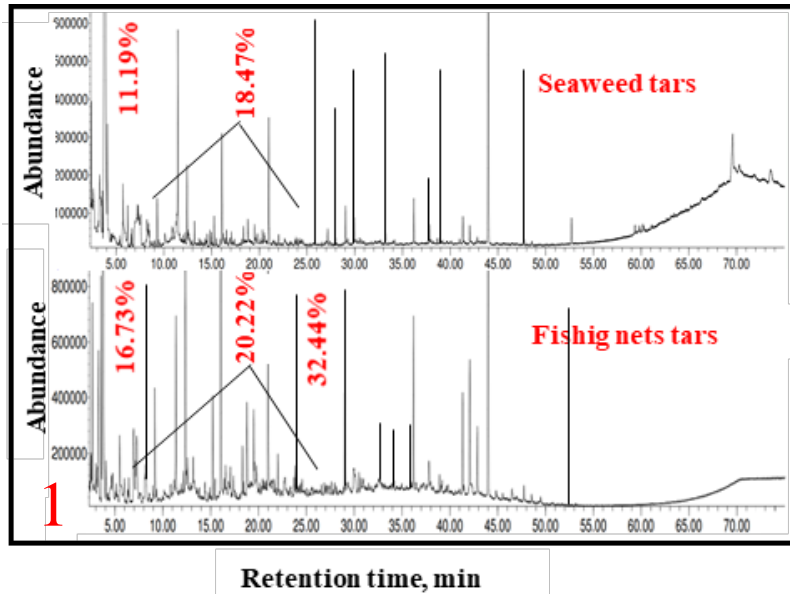


Gaseous products analysis after laboratory scale bench



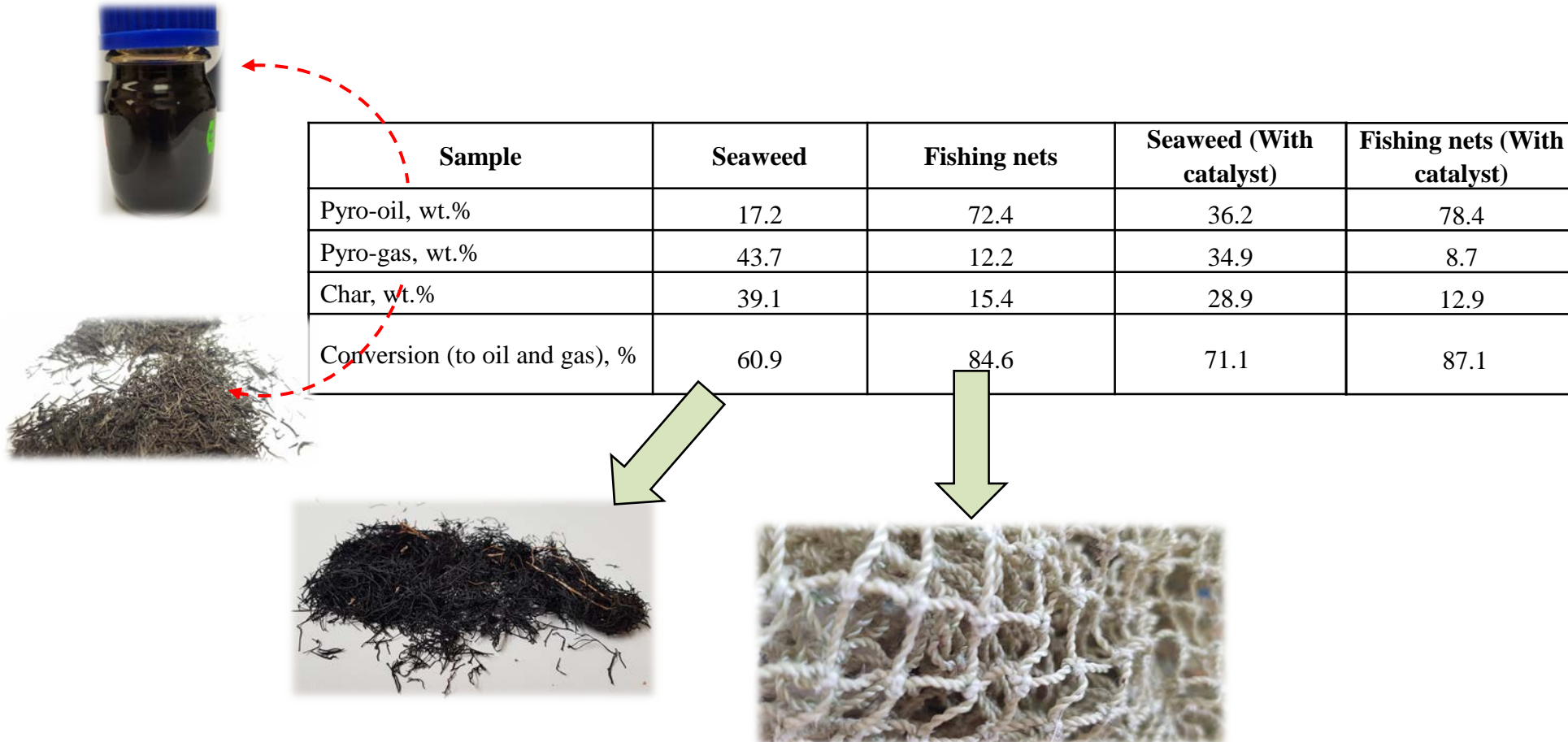


Liquid products analysis





Distribution of products



Thank you for your attention!

Justas Eimontas

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