

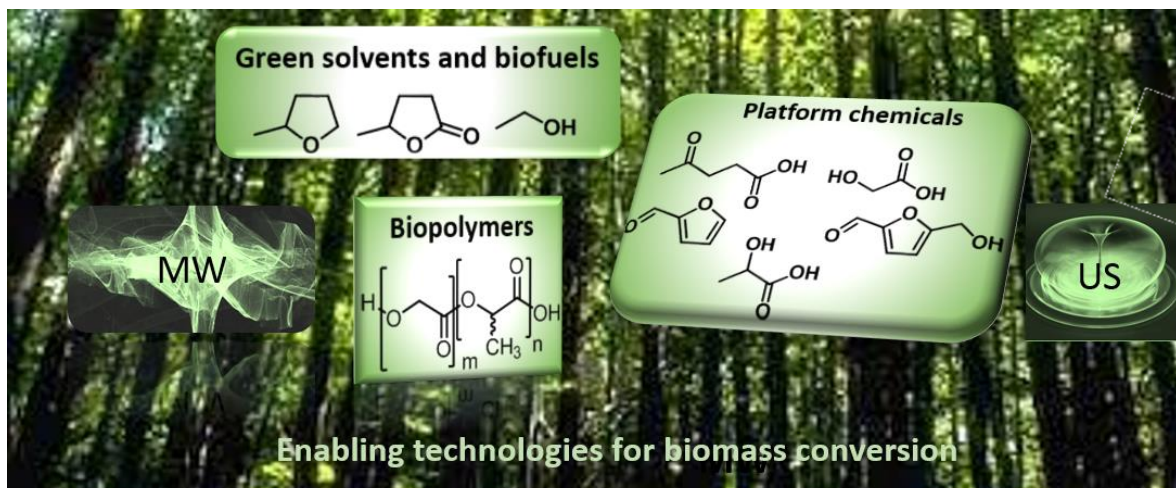
Proposte di TESI aa 2021-2022: Gruppo Bioraffinerie

Dr.ssa Silvia Tabasso

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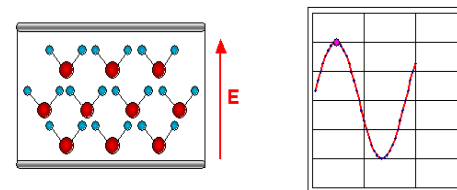


Tecnologie non convenzionali per l'ottenimento di prodotti chimici da biomasse residuali

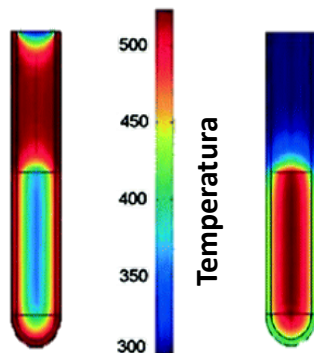
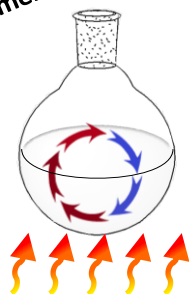


METODI E TECNICHE PER PROCESSI SOSTENIBILI

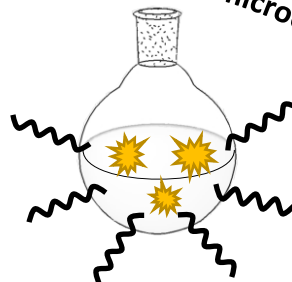
TECNOLOGIE NON CONVENZIONALI - MICROONDE



Riscaldamento convenzionale



Riscaldamento a microonde



Riscaldamento rapido e omogeneo
Tempi estremamente ridotti
Ridotto consumo energetico
Rese e selettività maggiori
Processi sostenibili



Camera di reazione pre-pressurizzata

Gas inerti e reattivi

Reazioni parallele



Caratterizzazione prodotti

- GC-FID, GC-MS
- HPLC
- NMR (600 MHz)

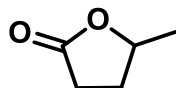
SynthWAVE (Milestone)

Da scala laboratorio a scala pre-pilota

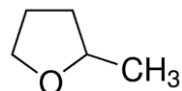
SOLVENTI GREEN



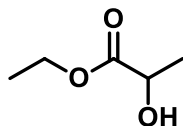
Acqua



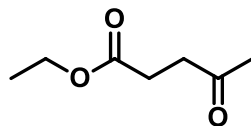
GVL



2-MTHF



Ethyl lactate



Ethyl levulinate



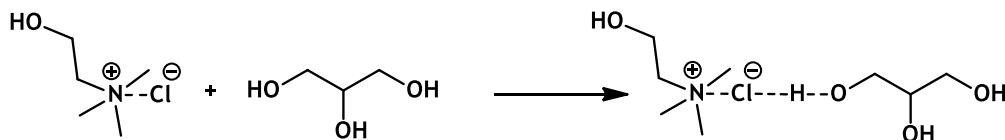
Miscela eutettica formata da sali di ammonio quaternari e composti donatori di legame ad idrogeno

Non tossici

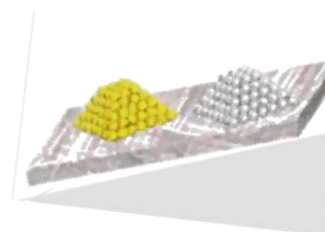
Basso costo

**Facilità di
preparazione**

Biodegradabili



CATALIZZATORI ETEROGENEI



più stabili alla temperatura, più facili da maneggiare, da riciclare e da rigenerare

STUDIO DEI SITI ATTIVI E DELLA STABILITA'

Microscopia elettronica (HR-TEM, FESEM, EDS)

XRD, DR UV-Vis, BET



DIPARTIMENTO DI CHIMICA

DIPARTIMENTO DI SCIENZE DELLA VITA E BIOLOGIA DEI SISTEMI

Processi sostenibili per la conversione di scarti agricoli ad acido lattico



Silvia Tabasso¹, Roberto Mazzoli²

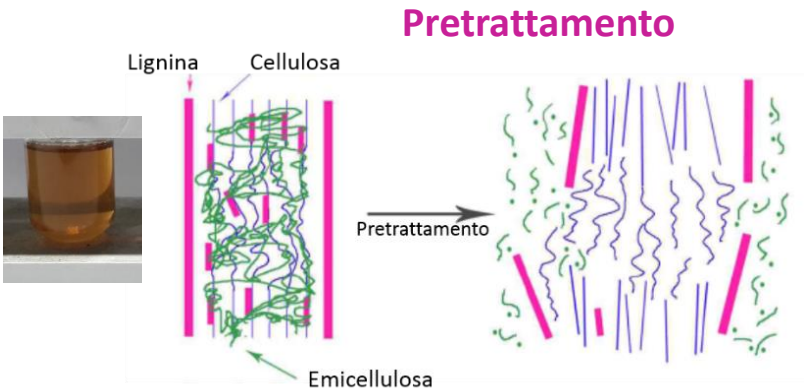


²PhD, Assistant Professor Biochemistry, Structural and Functional Biochemistry. Proteomics and Metabolic Engineering of Prokaryotes (PMEP), Dept. of Life Sciences and Systems Biology. Via Accademia Albertina 13, Torino. University of Torino, roberto.mazzoli@unito.it

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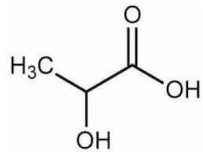
Microambienti ad elevata energia



Cellulosa



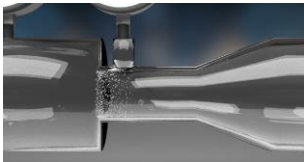
Fermentazione



Industria alimentare
Industria cosmetica
Industria farmaceutica

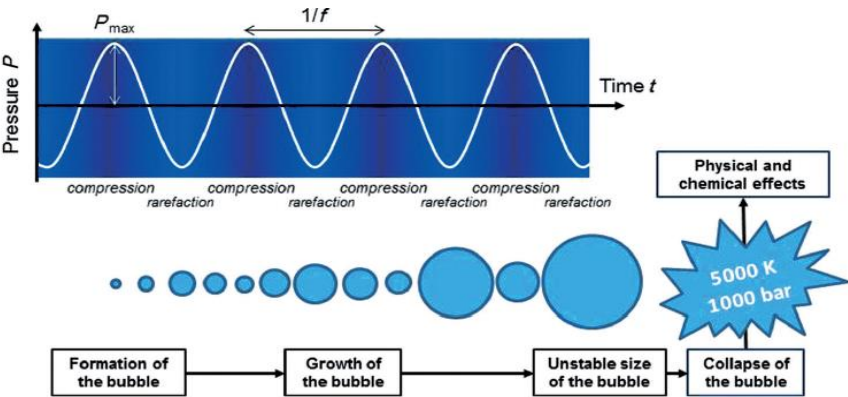
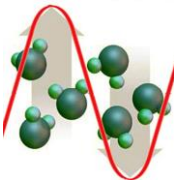
Sintesi PLA

Cavitazione idrodinamica e acustica

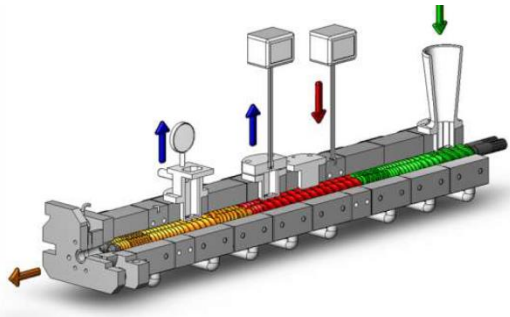


INTENSIFICAZIONE DI PROCESSO

MICROONDE



Estrusore reattivo



Scarti agricoli

Vinaccioli



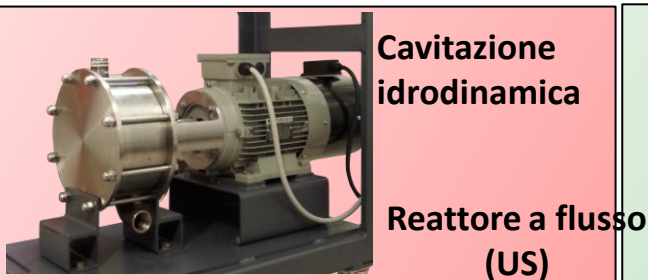
Paglia di grano



Paglia di mais



Pretrattamento

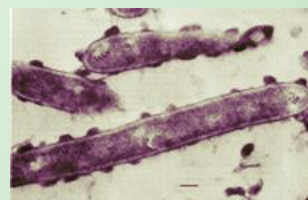


Reattore MW



Estrusore

Fermentazione della cellulosa



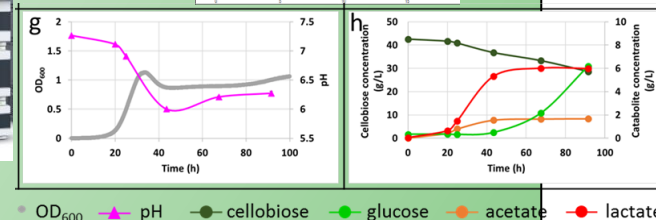
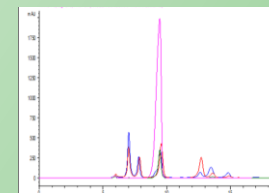
C. thermocellum



Colture batteriche anaerobiche



Acido lattico



Analisi del profilo di fermentazione