Welcome to Bio4Energy Autumn Researchers' Meeting 2022

21-22 November, lunch to lunch
Quality Hotel, Luleå

Monday 21 November

12.00 **Lunch**

13.00 **Opening of the meeting**
Information from the managers

13.15 **Bio4Energy and the great Norrland transformation**

H2 Green Steel starting a pioneering venture in Boden – with sustainability in the DNA
Ida-Linn Näzelius, H2 Green Steel

The significance of hydrogen for northern Sweden and the significance of our activities for hydrogen
Cecilia Wallmark, CH2ESS/LTU

Piteå biorefinery testbed and news from the national bioeconomy strategy
Johanna Mossberg, RISE/Bio4Energy Advisory Board

15.00 **Fika and poster session preparation**

15.30 **PhD students in the spotlight *(see detailed program below)***

Poster session introduction

Poster session

Updates from Bio4Energy Graduate School
Dimtris Athanassiadis

17.00 **Wrap-up of day 1**

Time for platform activities, leisure or resting

19.00 **Dinner**

Tuesday 22 November

08.30 **Bio4Energy in the regional transformation and national bioeconomy strategy – *mini-workshop***

09.30 **Materials, energy, and chemicals – Research updates from Bio4Energy's Biopolymers and Biochemical Conversion platform**

Organosolv fractionation: Towards establishing the biomass biorefinery of the future
Leonidas Matsakas, LTU

Biorefinery approach for producing biofuels and biopolymers from residues of quinoa harvest and processing
Carlos Martín, UmU

ca 10.00 **Fika break**

Utilizing the natural composition of industrial bio-based residues for efficient separation of functional nanofibers
Linn Berglund & Io Antonopoulou, LTU

Alkalicellulose – a prerequisite for cellulose etherification
Ola Sundman, UmU

Heterotrophic cultivation of oleaginous microbes for the production of metabolites of commercial interest using forest biomass
Alok Patel, LTU

11.20 **Closing remarks**

11.30 **Lunch**

12.30 **Chartered buses leave for study visits from outside Quality Hotel**

ca 13 **Study visits** ***(see last page)***
1) RISE Piteå
2) Bio4Energy research labs at LTU (Biorefinery lab, Bionano lab, Energy conversion (ECO) lab)

The study visits are timed to end in time for the 100 bus to Umeå (Luleå universitet 14.35, Luleå busstation 15.00, Piteå busstation 15.55).

From Piteå, the chartered bus will leave from RISE to the bus station in time for the 100 bus. After that, the bus returns to Luleå.

Poster program day 1

Processing of organosolv fractions for functionalization and valorization of biobased material
Abirami Senthil (BioPolChem, RISE)

Carbonic anhydrase for accelerated weathering of pulp and paper residues: a biotechnological route for CCS
Ayanne De Oliveira Maciel (BioPolChem, LTU)

Wood chipping and improved impregnation for forest-industrial processes
Claudia Quineche (BioPolChem, UmU)

PHB production by Halomonas boliviensis LC1 using enzymatic hydrolysates of quinoa stalks as substrate
Diego Miranda (BioPolChem, UmU)

Chemical storage of hydrogen through bioelectrochemical conversion of CO_2 to formic acid catalyzed by formate dehydrogenase
Eleftheria Sapountzaki (LTU)

The biodegrading potential of two thraustochytrid strains of hydrophobic substrates towards the production of omega-3 fatty acids
Eleni Krikigianni (BioPolChem, LTU)

Laser-based in situ detection and imaging of gas-phase K species in biomass combustion
Emil Thorin (ThermoChem, UmU)

Sustainable solid-state lithium-ion batteries
Haiman Hu (CatSep, LTU)

Organosolv Lignin Nanoparticles (OLP) in the Froth Flotation of Apatite rich Mine Tailings
July Ann Bazar (BioPolChem, LTU)

Supply of BATTERy minerals using lignin nanoparticles as FLotAtIon collectors
Katerina Hruzova (BioPolChem, LTU)

Towards the expansion of biorefineries: Coping with uncertainties
Mahsa Mehrara (SysAnaBio, LTU)

Biomass-fired entrained flow reactor under imposed acoustic oscillations
Marcelo Dal Belo Takehara (ThermoChem, LTU)

Organosolv fractionation of halophytes *Salicornia* L. fibers
Maxwel Moncao (BioPolChem, LTU)

Organosolv processing of lignocellulose and lignin utilization
Petter Paulsen Thoresen (BioPolChem, LTU)

Gas phase extraction of valuable Si and K –P compounds during thermochemical conversion of agricultaral residues in entrained flow condition
Samarthkumar Pachchigar (ThermoChem, LTU)

Energy systems analysis of selected value chains from stand to product
Swastika Chakravorty (SysAnaBio, LTU)

Economic Benefit of C1 Products from Electrochemical CO_2 Reduction with Ionic liquids
Yangshuo Li (CatSep, LTU)

The current technoeconomic assessment & policy status of sustainable aviation fuels (SAF) production routes
Zeenat Farooq (SysAnaBio, LTU)

Multi-scale studies of ionic liquids and deep eutectic solvents + cosolvents
Zhida Zuo (CatSep, LTU)

Participants

Name	Org.	Platform	Study visit
Abirami Senthil	RISE	BioPolChem	RISE
Alexey Sepman	RISE	ThermoChem	
Alok Kumar Patel	LTU	EnviroNut	RISE
Anna Malou Petersson	RISE	ThermoChem	
Anna Strandberg	UmU	FeedPro	
Anna Strom	UmU	Communic.	LTU
Ayanne De Oliveira Maciel	LTU	BioPolChem	
Bianca Anina Brandt	UmU	BioPolChem	LTU
Carlos Martín Medina	UmU	BioPolChem	
Carmen Cristescu	SLU	SysAnaBio	LTU
Chaojun Tang	UmU	BioPolChem	LTU
Charlie Ma	UmU	ThermoChem	LTU
Christiane Funk	UmU	BioPolChem	RISE
Christoffer Boman	UmU	EnviroNut	LTU
Claudia Quineche	UmU	BioPolChem	RISE
Diego Miranda	UmU	BioPolChem	LTU
Dimitris Athanassiadis	SLU	SysAnaBio	LTU
Eleftheria Sapountzaki	LTU		
Eleni Krikigianni	LTU	BioPolChem	
Elisabeth Wetterlund	LTU	SysAnaBio	
Emil Thorin	UmU	ThermoChem	LTU
Florian Schmidt	UmU	ThermoChem	
Francisco Gil Muñoz	SLU	SysAnaBio	
Fredrik Forsberg	LTU	ThermoChem	LTU
Gerhard Scheepers	RISE	ForFeed	LTU
Gopinathan Manavalan	UmU	CatSep	LTU
Haiman Hu	LTU	CatSep	
Hannele Tuominen	SLU	ForFeed	RISE
Henrik Wiinikka	RISE	ThermoChem	LTU
Hoda Shafaghat	RISE	CatSep	
Io Antonopoulou	LTU	BioPolChem	
Joakim Lundgren	LTU	SysAnaBio	
Johan Ingri	LTU	EnviroNut	
Johanna Mossberg	RISE	Advisory Board	
Johannes Hanson	UmU	ForFeed	
Jonas Hedlund	LTU	CatSep	
July Ann Bazar	LTU	BioPolChem	RISE
Jyri-Pekka Mikkola	UmU	CatSep	
Katerina Hruzova	LTU	BioPolChem	
Leif Jönsson	UmU	BioPolChem	
Leonidas Matsakas	LTU	BioPolChem	LTU
Linn Berglund	LTU	BioPolChem	
Madhavi Latha Gandla	UmU	BioPolChem	RISE
Magnus Rudolfsson	SLU	FeedPro	LTU
Mahsa Mehrara	LTU	SysAnaBio	RISE
Marcelo Dal Belo Takehara	LTU	ThermoChem	LTU
Markus Broström	UmU	ThermoChem	RISE
Mats Tysklind	UmU	SysAnaBio	
Maxwel Moncao	LTU	BioPolChem	
Mikael Thyrel	SLU	FeedPro	LTU

Name	Org.	Platform	Study visit
Nils Skoglund	UmU	EnviroNut	
Ola Sundman	UmU	BioPolChem	
Oscar Mauricio Gracia Piña	LTU	SysAnaBio	LTU
Oscar Paulsson	LTU	EnviroNut	
Pal Csaba Miskolczi	SLU	ForFeed	RISE
Paul Christakopoulos	LTU	BioPolChem	LTU
Peter Nordström	RISE	ForFeed	
Petter Paulsen Thoresen	LTU	BioPolChem	
Pooja Dixit	UmU	BioPolChem	LTU
Robert Lundmark	LTU	SysAnaBio	
Sahar Foorginezhad	LTU	CatSep	
Samarthkumar Pachchigar	LTU	ThermoChem	
Santosh Govind Khokarale	UmU	CatSep	RISE
Sarah Conrad	LTU	EnviroNut	
Shaikshavali Petnikota	SLU	FeedPro	LTU
Shaojun Xiong	SLU	FeedPro	LTU
Shruti Choudhary	UmU	ForFeed	RISE
Swastika Chakravorty	LTU	SysAnaBio	LTU
Ulrika Rova	LTU	BioPolChem	LTU
Xiaoyan Ji	LTU	CatSep	LTU
Yang Zhang	LTU	ThermoChem	RISE
Yangshuo Li	LTU	CatSep	LTU
Zakiya Yassin	RISE	ForFeed	LTU
Zeenat Farooq	LTU	SysAnaBio	LTU
Zhida Zuo	LTU	CatSep	

Study visits

1) RISE Piteå testbed and demonstration environment (Anna Malou Peterson)
2) Bio4Energy research labs at LTU:
   - Biorefinery lab, C531 (Leonidas Matsakas)
   - Bionano lab, E171A (Kristiina Oksman)
   - Energy conversion (ECO) lab, E631A (Marcelo Dal Belo Takehara)

<u>Note</u>: the LTU lab visit will be split into three groups, which will rotate between the labs

LTU map campus Porsön

https://www.ltu.se/maps/campusmap/