

GROWING THE BRISK ALUMNI

Three calls for transnational access with the Biofuels Research Infrastructure for Sharing Knowledge are now complete!

BRISK2 has now received nearly one hundred applications for Transnational Access (TA). Every BRISK2 partner has received a successful application and BRISK2 transnational access visits are continuing to take place across Europe.

This issue of the BRISK2 newsletter is

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Successful applicant Jakov Baleta on his Transnational Access visit with BRISK2 partner ENEA in March 2018. Read his case study on page 9

a 'case study special', with details of some of the research visits that took place in 2018.

The fourth call for Transnational Access is open now until 1 April 2019. Interested biofuels researchers are invited to explore the opportunities available and apply at BRISK2's revamped website, which launched before Christmas 2018 at www.brisk2.eu.



The Biofuels Research Infrastructure for Sharing Knowledge, funded by Horizon 2020 provides opportunities for biofuels researchers to access unique equipment and expertise across Europe. This project is truly international, with applications welcome from around the world. As Project Coordinator at KTH, it is a pleasure to be part of BRISK2.

Andrew Martin

BRISK2 Project Co-ordinator, KTH
andrew.martin@energy.kth.se



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement number 731101.

UPDATE—BRISK2 BEHIND THE SCENES

ExCo Amsterdam

BRISK2 partners met again in November 2018 in Amsterdam to review progress in all project Work Packages.

BRISK2 is on track and meeting current targets. It hasn't yet exceeded the cap on non-EU transnational access visitors, and as such all facilities will continue to remain open to non-EU applicants.

The next General Assembly meeting is scheduled for June 2019 in Turin.

Joint Research Activities

Across the Joint Research Activities, BRISK2's partners are busy developing:

- Integrated multi-scale characterisation of new feedstocks for thermochemical and biochemical conversion processes
- Advanced measurement techniques for enhanced process flexibility and reliability
- Innovative biorefining approaches for sustainable biobased products
- System simulation tools for comprehensive modelling of biomass conversion and biorefinery

The Round Robin is ongoing, with the same experiments replicated in facilities across the infrastructure. More tests are scheduled for 2019.

ECN part of TNO has also been busy updating the Phyllis database, which is part of BRISK2's protocols, databases and benchmarking activities.

Using this well known publicly available online tool, it is now possible to download biomass properties in both pdf and excel versions, and waste is also now included. The database is available at: www.phyllis.nl

BRISK2's revamped website!

The BRISK2 website has been upgraded to showcase the fantastic case studies now coming in from all the successful Transnational Access visits across Europe, open access events and more. Some of these are included from page 4.

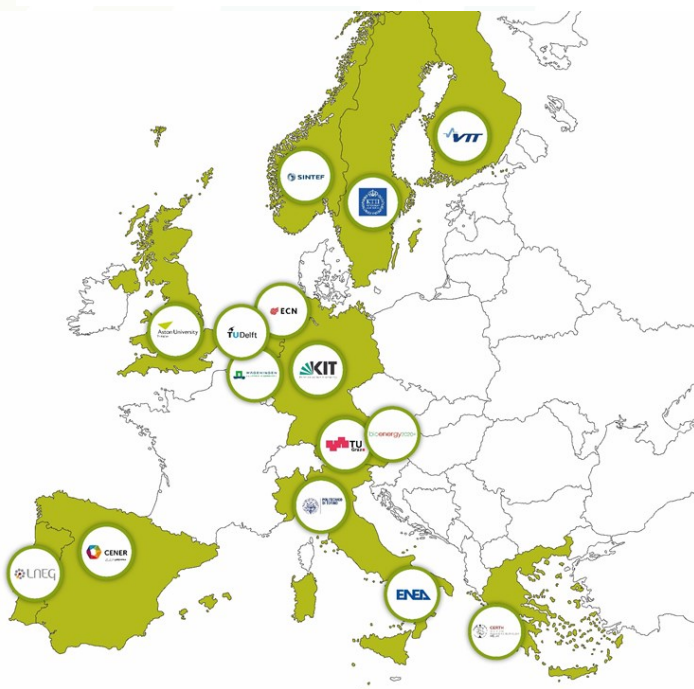
BRISK2 facilities information, rig lists and transnational access contact details have been updated for 2019.

Brand new partner profiles are also coming to the BRISK2 website. Explore the facilities and find up to date BRISK2 opportunities online now. Visit:

www.brisk2.eu

Already been on a visit with BRISK2? Make sure you send in your TA Visitor Case Study to brisk2@aston.ac.uk —we're adding them to the website now!

BRISK²
BIOFUELS RESEARCH INFRASTRUCTURE

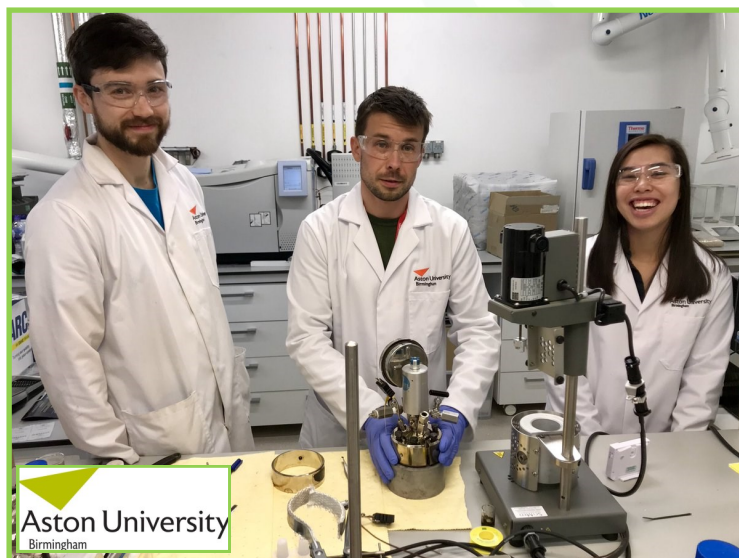


TRANSNATIONAL ACCESS - UPDATE

81 applications for TA have now been approved or conditionally approved. Case studies from some of 2018's BRISK2 visits are available on page 4.

Applications are welcome until 2022. Biofuels researchers can apply to BRISK2 via the website www.brisk2.eu at any time whilst the project is active.

Some installations have now completed their hours. For up to date installation availability, visit the [facilities page](#) on the BRISK2 website.



Successful applicant Marcin Sajdak (centre) with PhD students during his transnational access visit to EBRI at Aston University



TA Visitors Daya Pandey (left) and TA visitor Ioannis Katsaros (right) with Johan Kuipers (middle) from ECN>TNO

The selection process is not competitive, and each application will be considered on its own merit. However:

- Applicants must contact the facility of their choice to develop a realistic work plan before submitting an application to the website. This initial enquiry must occur at least **28 days** before the application deadline.
- Applicants must not apply to facilities in their current country of work or study
- Discover more tips for applications on [BRISK2's Frequently Asked Questions \(FAQ\) page](#).

Applications are assessed by an independent panel of biofuels experts. This User Selection Panel (USP) meets twice a year in each April and October.

**APPLY FOR
TRANSNATIONAL
ACCESS NOW!**
visit www.brisk2.eu

<u>Pool Deadline</u>	<u>Selection Panel Assessment</u>	<u>Notification</u>	<u>Access Period</u>
1 April 2019	April 2019	May 2019	May-Oct 2019
15 October 2019	October 2019	November 2019	Nov—Apr 2019
1 April 2020	April 2020	May 2020	May— Oct 2020
1 October 2020	April 2021	November 2020	Nov—Apr 2020

CASE STUDY—KAOUTHER ZAAFOURI

My research internship, in the context of a Transnational Access visit through BRISK2, was achieved during April 2018 at ENEA, the Italian National Agency for New Technologies, Energy and Sustainable Economic Development in Trisaia, Italy.

Applying to BRISK2 was very easy and simple with the collaboration of Dr. Francesco Zimbardi from the Bioenergy, Biorefinery and Green Chemistry Division at ENEA.

[ENEA Centro Ricerche Trisaia](#) is very well equipped with pretreatment facilities at laboratory and full scale, including a Batch Steam Explosion Reactor; Steam Explosion Full Scale Plant; High pressure and Temperature Batch Reactor.

The aim of the work was to compare the efficiency of two physico-chemical pretreatments, i.e. Steam Explosion (SE) and Hot Water/OrganoSolv (OS) towards the acid fractionation of Olive Woody Waste (OWW) and enzymatic digestibility of the cellulosic residue.



High Pressure and Temperature PARR Batch Reactor

In fact, Olive Woody Waste (OWW) is a promising feedstock for biorefineries in the Mediterranean region. For each ton of olive oil produced, 4 tons of OWW are generated. Thus, this feedstock is considered as a potential lignocellulosic feedstock for 2G sugars production. In order to valorize this lignocellulosic residue, a pretreatment is necessary to fractionate its components and to improve the cellulose enzymatic hydrolyzability.



Batch Steam Explosion Reactor

The Steam Explosion was performed with a batch reactor of 10 L, coupled with a 125 kW boiler. The Hot Water/OrganoSolv was carried out in a batch reactor (PARR) of a 0.5 l vessel with adjustable internal stirrer and heat control. After SE and OS pretreatments the materials were extracted by water to remove the soluble hemicellulose as monomers and oligomers as well the inhibitors; the solid residue was saccharified at the solids loading of 5% (w/v), 50°C and pH 4.8 for 72h with a stirring speed of 180 rpm.

This research emphasized that OWW Steam Explosion allowed a slightly higher recovery of glucose sugars by aqueous extraction, also because of a lower production of inhibitors. On the other hand, the Hot Water/OrganoSolv pretreatment showed a better performance in terms of hemicellulose sugars recovery and enzymatic hydrolysis yield.

The work was very fruitful. The main results were presented at the 26th European Biomass Conference and Exhibition –EUBCE from 14 to 18 May 2018 in Copenhagen - Denmark:

FRACTIONATION OF OLIVE WOODY WASTE (OWW) OBTAINED AFTER MILLING BY HYDROTHERMAL PRETREATMENTS - STEAM EXPLOSION AND HOT WATER

Kaouther Zaafour^{*}, Francesco Zimbardi, Egidio Viola, Nadia Cerone, Vito Valerio, Assunta Romanelli

ENEA Italian National Agency for New Technologies, Energy and Sustainable Economic Development - Department of Energy Technologies, Research Center-Rotondella (MT) - Italy

^{*}Visiting scientist from Laboratory of Microbial Ecology and Technology (LETMI), The National Institute of Applied Sciences and Technology (INSAT) University of Carthage, 2 Boulevard de la Terre, BP 676, 1080 Tunis, Tunisie

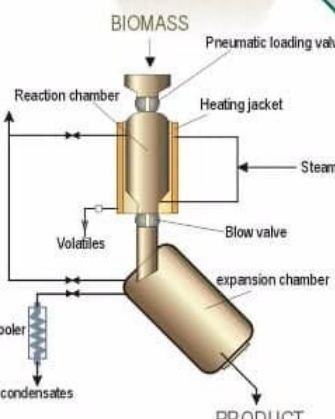
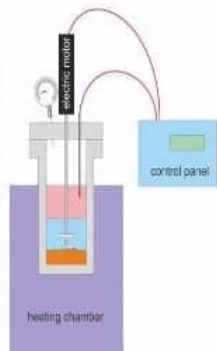
E-mails: kaoutherzaafouri@gmail.com / francesco.zimbardi@enea.it / egidio.viola@enea.it

SUMMARY

The olive woody waste (OWW) is a promising feedstock for biorefineries in the Mediterranean region. In fact, for each ton of olive oil produced, 4 tons of OWW are generated. Thus, this feedstock is considered as a potential lignocellulosic feedstock for 2G sugars production. In order to valorize this lignocellulosic residue, a pretreatment is necessary to fractionate its components and to improve the cellulose enzymatic hydrolyzability.



Organic Solvent Pretreatment Experimental Rig

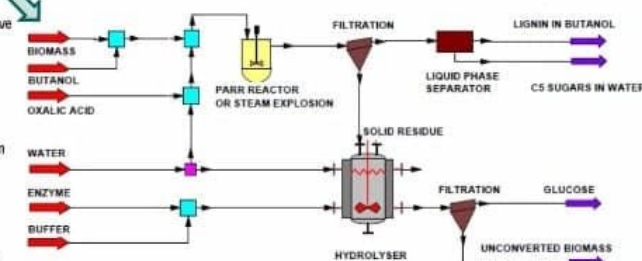


Batch Steam Explosion Reactor

OBJECTIVE

The work target was to compare the efficiency of two physico-chemical pretreatments, viz.: Steam Explosion (SE) and OrganoSolv (OS) towards acid fractionation of OWW and enzymatic digestibility of the cellulosic residue.

EXPERIMENTAL METHODOLOGY



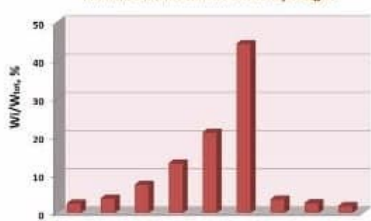
The Steam Explosion was performed with a batch reactor of 10 L, coupled with a 125 kW boiler. The OrganoSolv was carried out a batch reactor (PARR) of a 0.5 l vessel with adjustable internal stirrer and heat control. After SE and OS pretreatments the materials were extracted by water to remove the soluble hemicellulose as monomers and oligomers as well the inhibitors; the solid residue was saccharified at the solids loading of 5% (w/v), 50°C and pH 4.8 for 72h with a stirring speed of 180 rpm.

MAIN RESULTS

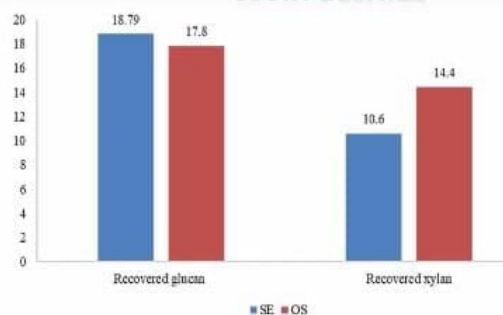
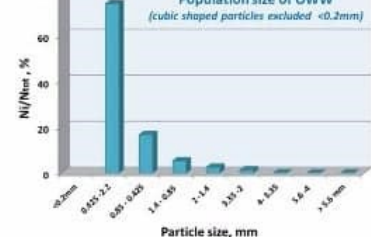
Chemical Composition of OWW

	% on Dry matter
Arabinan	1.5
Xylan	18.6
Galactan	0.7
Glucan	20.9
Lignin	38.1
Inorganics	8.1
Extractives	2.7
Acetyl groups	0.0
ND	9.4

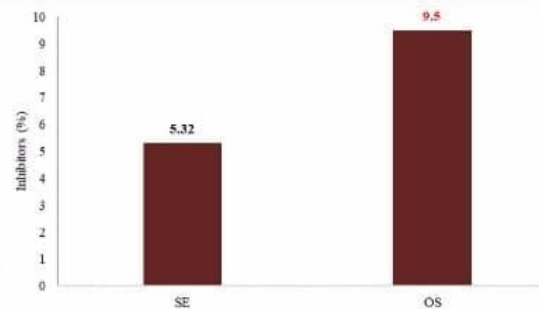
Particle Distribution of OWW by weight



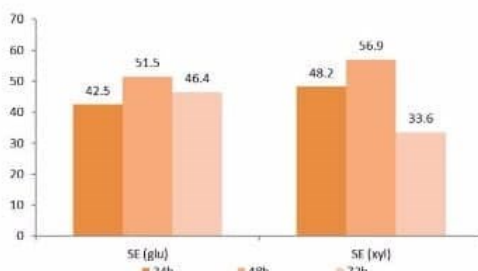
Population size of OWW (cubic shaped particles excluded <0.2mm)



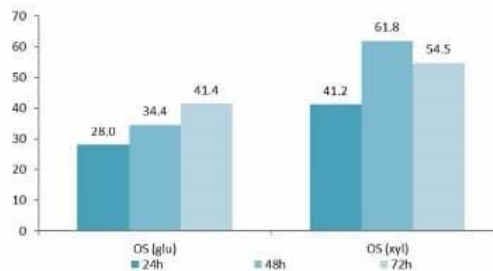
Glucan and Xylan Recovery percentages respect that in raw OWW after Steam Explosion (SE) and OrganoSolv (OS) pretreatments of OWW.



Inhibitors produced in Steam Explosion and OrganoSolv pretreatments (g/100 g of raw OWW).



Glucan and Xylan Recovery percentages respect that available in the raw OWW after enzymatic hydrolysis of Steam Exploded (SE) OWW at different reaction time.



Glucan and Xylan Recovery percentages respect that available in the raw OWW after enzymatic hydrolysis of OWW pretreated with OrganoSolv (OS) at different reaction time.

This research emphasized that for OWW Steam Explosion allowed slight higher recovery of glucose sugars by aqueous extraction, also because of a lower production of inhibitors. On the other side, the OrganoSolv pretreatment showed better performances in terms of hemicellulose sugars recovery and enzymatic hydrolysis yield.

ACKNOWLEDGEMENTS: The research was financially supported by EC in the frame of H2020 program, through the BRISK2 project, contract 731101.

CASE STUDY—KAOUTHER ZAAFOURI



The ENEA Team—BRISK2

Acknowledgements

I'm very grateful to the "Bioenergy, Biorefinery and Green Chemistry Division" at ENEA Centro Ricerche Trisaia, and especially to: Dr. Francesco Zimbardi, Dr. Egidio Viola, Dr. Nadia Cerone, Dr. Vito Valerio and Dr. Assunta Romanelli for their help, availability and collaboration creating a very nice atmosphere of teamwork.

I would like also to express my thankfulness to the EC in the form of the H2020 program and BRISK2 project (grant agreement number 731101), for the financial support and opportunity to achieve this work.

Download the paper via BRISK2 and EUBCE, visit:

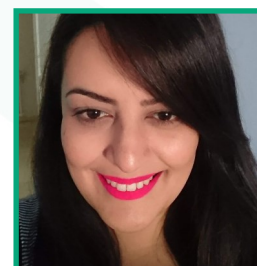
[ETA Florence](#) : Fractionation of Olive Woody Waste (OWW) Obtained after Milling by Hydrothermal Pretreatments—Steam Explosion and Hot Water.
Authors: Zaafour, K; Zimbardi, F, Viola, E; Cerone, N, Valerio, V; Romanelli, A

www.brisk2.eu—publications

Kaouthar Zaafour

kaoutherzaafour@gmail.com

**National Institute of Applied
Sciences and Technology
University of Carthage - Tunisia**



CASE STUDY—IVAN BROKAREV

During my BRISK2 research visit in January to March 2018, I worked at GasQ test rig (KTH1) at the Department of Energy Technology (HPT Division) of KTH Royal Institute of Technology in Sweden.

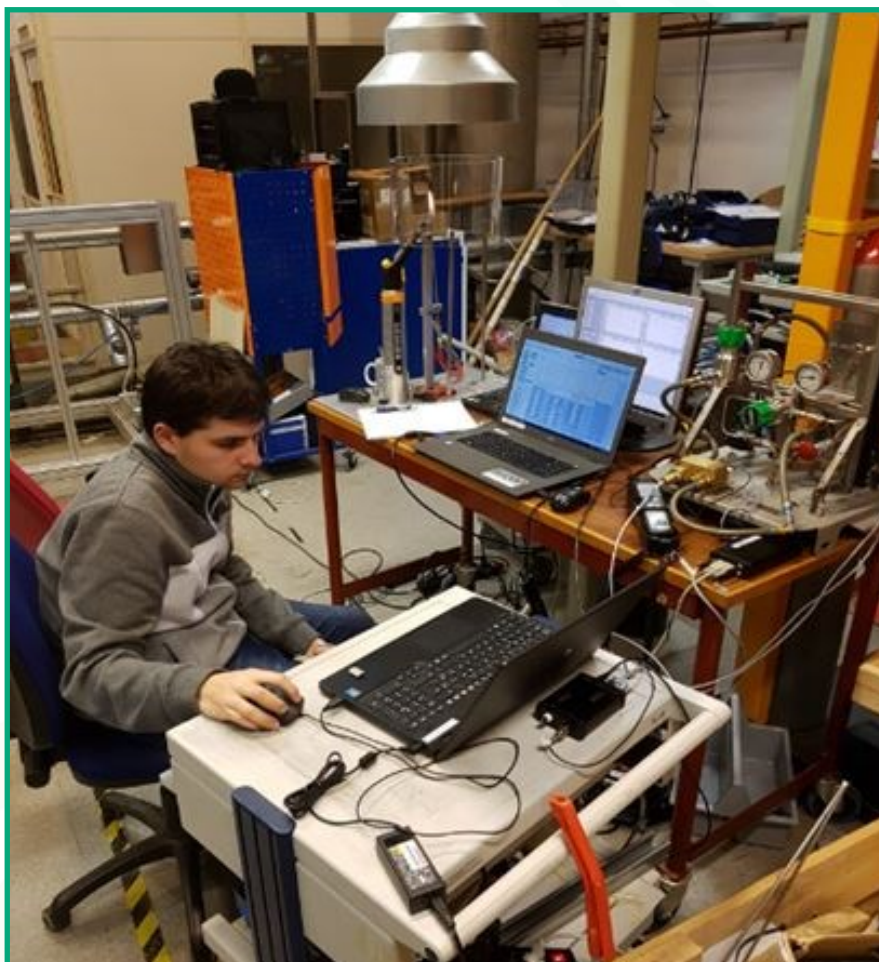
The purpose of my work was to collect experimental data for developing of the new method of composition analyses of bio gas.

At the first step of my work I adjusted the experimental rig for the further experiments. Then I collected experimental data from real gas mixtures that will be processed afterwards. The final part of my work involved designing a statistical model (based on artificial neural network) that will be used for calculating of required concentrations of gas mixtures using the measured physical parameters.

As a result of work conducted, I obtained a large database of gas physical properties experimental data that will be used in further activities.

I also received new skills and knowledge in the field of gas analysis and equipment concerning with this field of knowledge.

The results of work will be used as a chapter of my Ph.D. thesis and the basis of joint scientific publications. Moreover, the collected experimental database will be the basis of new experiments that will be conducted at the next stages of my research.



Conducting experiments at KTH

Ivan Brokarev

brokarev.i@gubkin.ru

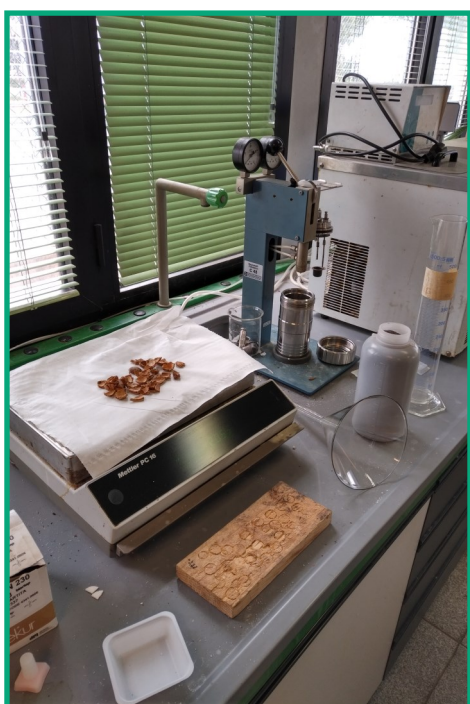
**Gubkin Russian State University of
Oil and Gas (National
Research University) -
Russia**



CASE STUDY—JAKOV BALETA

My transnational access visit with BRISK2, titled “Data gathering of updraft gasification and subsequent hydrogen enrichment for process modelling” took place at ENEA, Trisaia research centre, under the mentorship of Dr. Francesco Zimbardi in March 2018.

The objective of work was to gather data from an updraft gasifier (PRAGA) equipped with hydrogen enrichment module (HENRI) for developing mathematical models of updraft gasification process.



Measurement of almond shells' bulk density as a feedstock for gasifier

In the performed work, the focus was put on tuning syngas composition as a desirable feature of biomass gasification. Gasification was carried out in a pilot facility able to treat 20-30 kg/g of lignocellulosic feedstock using almond shells that maintain a good gas permeation when loaded as bulk.

The main component of the system is a fixed bed,

autothermal, updraft gasifier, operated slightly above atmospheric conditions. The gasifier has a cylindrical shape with a height of 2.4 m and diameter of 0.5 m. The inner wall of the gasifier is coated with 0.1 m of refractory material. Air, oxygen, steam or mixtures of these can be used as the gasifying media.

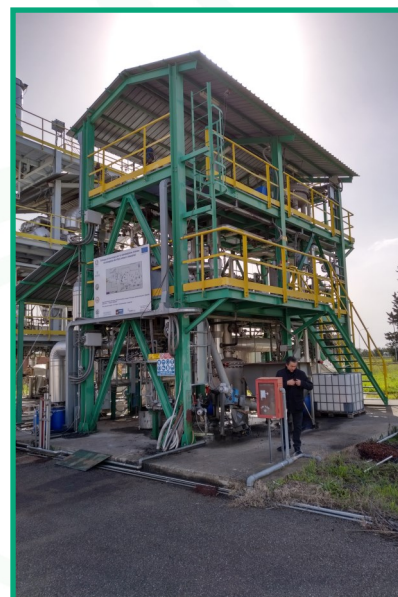
The flow of the gasifying media is introduced into the lower part of the gasifier below the grate.

A new inserted mobile probe was employed that allowed to assess syngas quality (incondensable and tar) at different positions of the reactive biomass bed. This was achieved by drafting syngas streams directly from the core and analyzing it onsite to measure the content of H₂, CO₂, CO, CH₄, C_nH_m, N₂, O₂. The chemical

composition was correlated to the temperature profile provided by in bed measurements of 7 thermocouples, plus 4 in freeboard.

Besides the gasification section, the plant is also equipped with catalyst section for Water Gas Shift (WGS) to increase the H₂ yield.

It is based on a catalytic reactor loaded with 1



Pilot scale updraft gasification - PRAGA Rig



Nozzle cleaning of biodiesel scrubber

CASE STUDY—JAKOV BALETA



Catalyst for Water Gas Shift reaction

dm^3 of Pt on Cerium oxide that in the tests was fed by 20Nm^3 of syngas produced by the updraft gasifier. Before entering the catalyst syngas was cleaned by 1 m^3

of biodiesel in the scrubber and filtered through coalescence filters.

The tests were carried out without significant problems and the process was effective and stable. The use of steam increased the hydrogen content and positively affected the molar ratio H_2/CO that reached the steady



Syngas and Tar Sampling

value of 1 by using air and team as gasifying medium. In the tests, the biomass was completely converted into gaseous and liquid energy carriers with a cold gas efficiency (CGE) ranging from 61% to 75%. With WGS the level of H_2 in gas reached 37%vol (53%vol on nitrogen free basis) corresponding to a new increased H_2/CO ratio of 9. The diagrams with measurements results attached to this report are shown overleaf.

Experimental data acquired during the visit are going to be used in future mathematical modelling of the



Tar sample processing for weight assessment

updraft gasification and hydrogen enrichment process. It can be concluded that this transnational access has been successful with respect to the objectives defined at the application stage. The dry syngas composition during the whole test and average composition along the bed height are shown overleaf.



Karl Fischer Titration

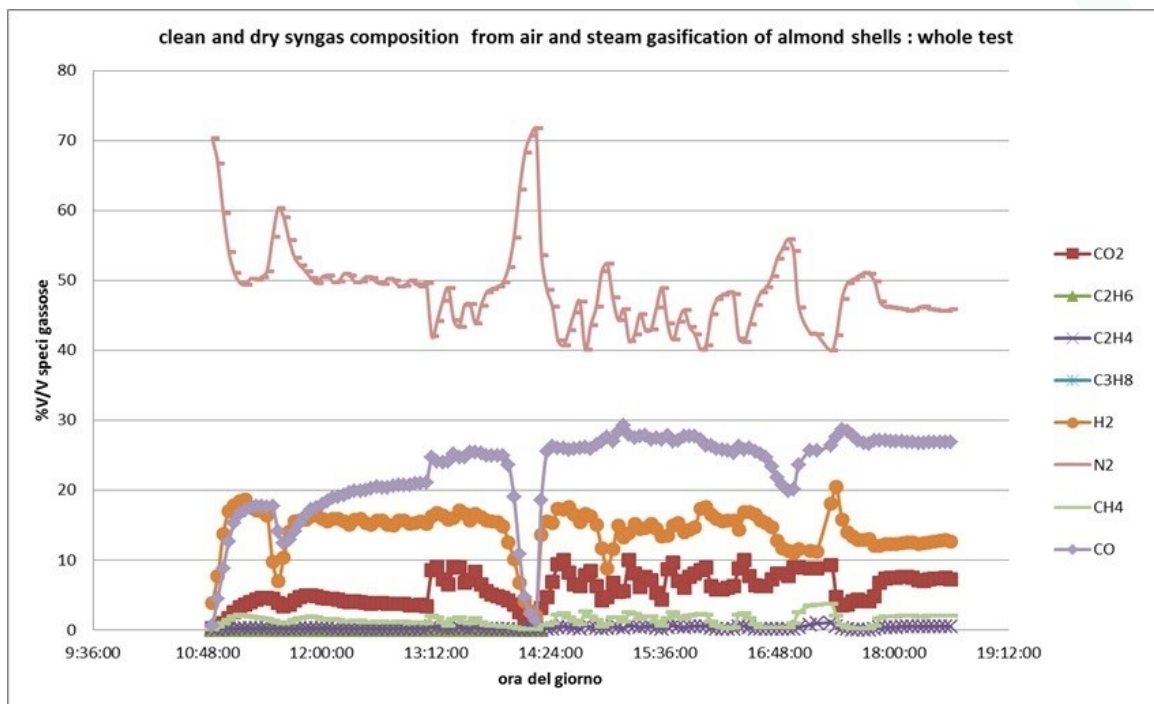
Jakov Baleta

baleta@simet.hr

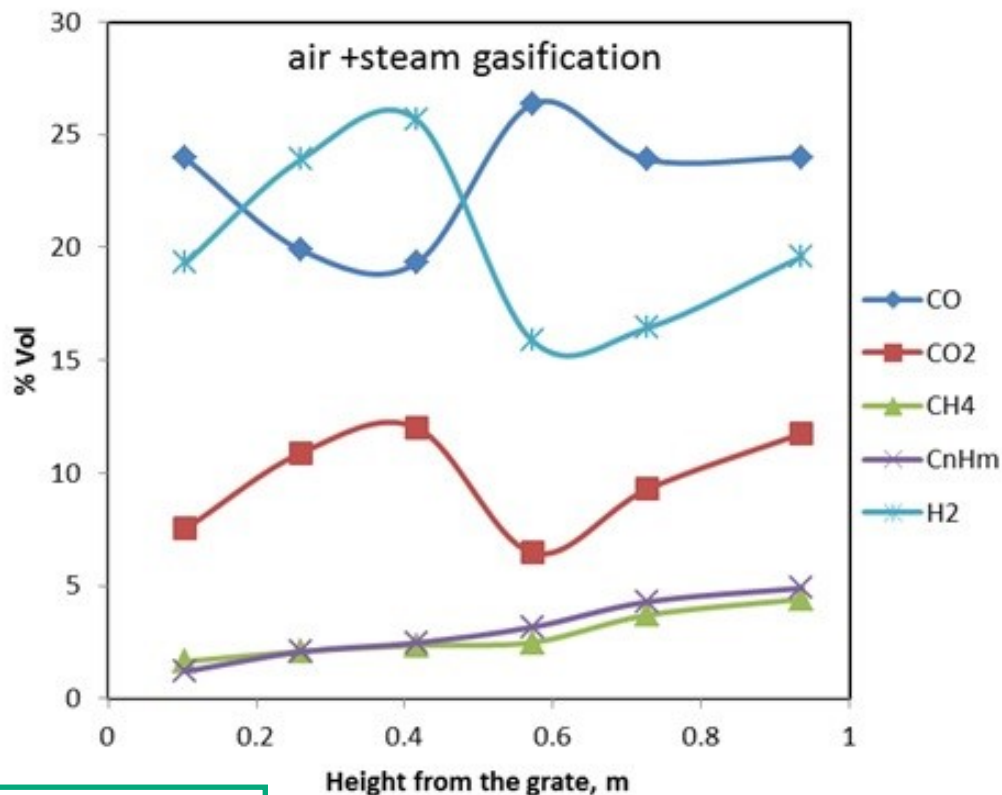
University of Zagreb—Faculty of
Metallurgy—Croatia



CASE STUDY—JAKOV BALETA



Above: Dry syngas composition during the whole test



Right: Average syngas composition along the bed height

Jakov Baleta

baleta@simet.hr

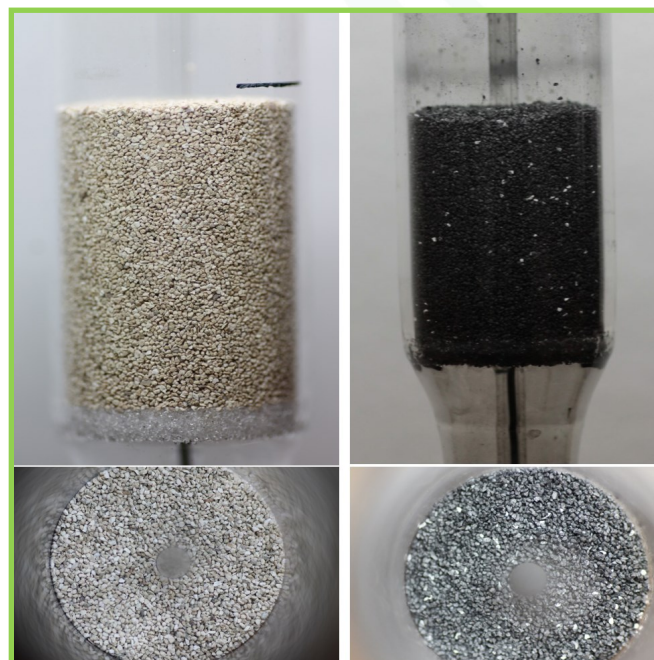
University of Zagreb—Faculty of Metallurgy—Croatia

CASE STUDY—DANIEL SERRANO

As soon as I heard the BRISK2 project was back, I started planning my application for its first call. I took part in the first BRISK project, as it's a really interesting opportunity to visit and meet other institutions and researchers. It enables the sharing of knowledge and establishes a starting point for future collaborations and opportunities. I could not let this opportunity pass.

I am interested in the catalytic activity of the different bed materials I had been using during my PhD thesis for fluidized bed biomass gasification. Looking at the partners' facilities, I found VTT Technical Research Centre of Finland had the perfect facility, equipment and knowledge to carry out my experimental plan.

I first contacted Sanna Tuomi to express my wish to visit their facilities for catalyst testing, and work there under a detailed experimental plan: test the catalytic activity of sepiolite and palygorskyte under different temperatures, using a synthetic gasification gas with a certain amount of tars. Sanna introduced me to Noora Kaisalo and we three started soon to discuss the



Fresh and used sepiolite after different temperature conditions

details of the experimental plan. Once everything was clear I proceed with the application submission which was accepted by the evaluation panel.

At my arrival to VTT, Noora introduced me to the catalysis team members and I started to work in the pressurized plug flow reactor with Mari-Leena Koskinen-Soivi and Petri Hietula. After an introductory safety training, we started to prepare the facility for the experiments with the packaging of the sepiolite for the first run. Once all the equipment was checked the catalytic activity of sepiolite started for 700, 850, 600, 700 and 350 °C during two hours for each set point.

The plan was changed along the way and a new higher temperature (950 °C) was tested, as low temperatures (700 °C) did not produce any effect in the exit gas. Surprisingly, I did not experience any experimental problems and everything went very smoothly, as planned.

Finally, we could test five different temperatures for each bed material and run two 24h test at 850 °C with



Daniel Serrano with Noora Kaisalo

CASE STUDY—DANIEL SERRANO



Running an experiment with Mari-Leena on the Pressurized Plug Flow Reactor

sepiolite and palygorskyte. A preliminary analysis of the results shows some activity of both sepiolite and palygorskyte at 850 and 950 °C. Benzene concentration increases after passing through the bed while toluene and naphthalene decreases, with some light hydrocarbons also appearing. This trend is much more influenced by temperature.

I am very satisfied with my experience at VTT, both professionally and personally. I really appreciate the interest of all the members of the catalysis team, headed by Dr. Pekka Simell, in my work and the kind reception they offered me, treating me as a part of their team.

I would like to thank Noora for her help during my stay and also Sanna who always answered my queries very efficiently, and they had no objection to changing the dates of my visit as I requested. I am very grateful to all the personnel in the lab, particularly to Mari-Leena, because of all their knowledge in the experimental

issues, answering all my curiosities, and for driving me to Bioruukki to show me the gasification and pyrolysis facilities and meet Sanna. Thank you for all the useful advice in the field of catalysis. I recommend VTT to anyone, and especially this team if interested in catalysis. I will always remember the sauna experience and the nice talks about our houses, projects and the northern lights during the early lunches and coffee breaks. I will hope for another chance to visit VTT and meet everyone again in the future.

Daniel Serrano

daserran@ing.uc3m.es

**Carlos III University of Madrid,
Spain**



Universidad
Carlos III de Madrid



HOW TO APPLY FOR TRANSNATIONAL ACCESS

The call for Transnational Access applications is open now. Biofuels researchers from industry and academia are welcome to apply via the BRISK2 website at www.brisk2.eu.

Applications for TA must fulfil strict eligibility criteria:

- The minimum level of qualification required is Bachelor of Science (BSc) or equivalent in a relevant Science or Engineering discipline.
- Applications can only be made to host organisations within the BRISK2 network and outside that of the applicant's own country and organisation
- Priority will be given to applicants who do not normally have access to similar research facilities within the country they are based
- Priority will be given to first time applicants
- Applications are welcome from across the world. However, the majority of grants will be available to EU member and Horizon 2020 associated states.



BRISK2 Application Steps

1. **Contact** your preferred BRISK2 project partner and discuss the viability of your proposal. Contact information is on page 14.
2. **Complete** the Transnational Access Application Form available at www.brisk2.eu/apply under consultation with your BRISK2 project partner.
3. **Submit** the completed PDF form via the BRISK2 website.

Choose from
15 partners
55 installations
11 countries

Individuals or teams of researchers are eligible to apply. BRISK2 will cover the cost of travel and subsistence up to the value of €1200 per visit

Transnational Access is coordinated by KTH

Applications can be made online at www.brisk2.eu.

General enquiries can be sent to: Mahrokh Samavati at brisk2@energy.kth.se

PARTNER CONTACTS FOR TA



Aston University
Birmingham

Scott Banks

s.banks@aston.ac.uk

bioenergy2020+

Stefan Retschitzegger

stefan.retschitzegger@bioenergy2020.eu



CENER | NATIONAL RENEWABLE
ENERGY CENTRE

Inés del Campo

idelcampo@cener.com



CERTH
CENTRE FOR RESEARCH & TECHNOLOGY HELLAS

Kyriakos Panopoulos

panopoulos@certh.gr



TU
Delft

Christos Tsekos

c.tsekos@tudelft.nl



ECN | **TNO** innovation
for life

Jaap Kiel

jaap.kiel@tno.nl



Francesco Zimbardi

francesco.zimbardi@enea.it



TU
Graz
Graz University of Technology

Andrés Anca-Couce

anca-couce@tugraz.at



KIT
Karlsruher Institut für Technologie

Axel Funke

axel.funke@kit.edu



KTH
KTH
KTH

Mahrokh Samavati

brisk2@energy.kth.se



LNEG

Francisco Girio

francisco.girio@lneg.pt



POLITECNICO
DI TORINO

Andrea Lanzini

andrea.lanzini@polito.it



SINTEF

Bernd Wittgens

bernd.wittgens@sintef.no



VTT

Sanna Tuomi

sanna.tuomi@vtt.fi



WAGENINGEN
UNIVERSITY & RESEARCH

René van Ree

rene.vanree@wur.nl

BRISK2 SPONSORS ECCRIA 2018

In September 2018, BRISK2 went to Cardiff to sponsor ECCRIA 2018, the 12th International European Conference on Fuel and Energy Research and its Applications organised by the Fuel and Energy Research Forum.

BRISK2 sponsored the event with a prominent exhibition stand for delegates to discover the opportunities available.

12th ECCRIA

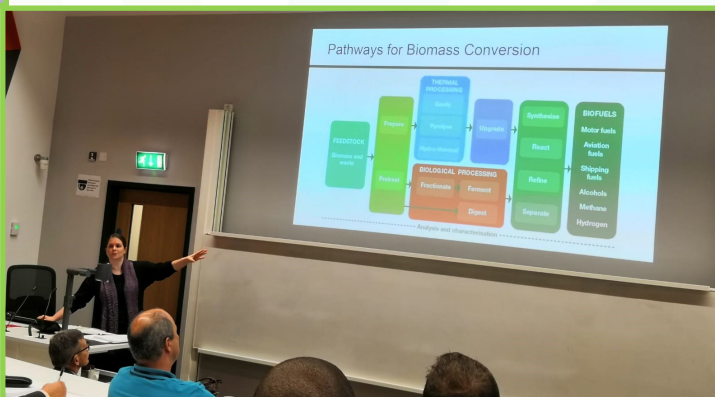
The European Conference on Fuel and Energy Research and its Applications



Presentations were delivered at a special BRISK2 session, chaired by BRISK2 partner ECN part of TNO's Jaap Kiel on Thursday 6th September. BRISK2 partners delivered a number of presentations, which were well received.

Pippa Try from Aston University, presented *Biofuels Research Infrastructure for Sharing Knowledge: An overview of opportunities with BRISK2*.

ECN part of TNO's Berend Vreugdenhil delivered *Gas analysis of contaminants in gasification product gas and upgrading of Phyllis-2 database—opportunities for collaboration with BRISK2*. ECN part of TNO's Pedro Abelha also presented on *Combustion improvements of upgraded biomass by washing and torrefaction*.



Above left: BRISK2 exhibition stand. Above right: Pippa Try presents BRISK2 opportunities. Left: ECCRIA Conference Organising Committee Member Dr Katie Chong and BRISK1 Alumna Paula Blanco-Sanchez from Aston University.

The 12th ECCRIA Conference took place
4-7 September 2018
Cardiff,
United Kingdom



BIOENERGY NEWS

ABC-Salt is a four-year Horizon 2020 project that will validate a novel route to produce sustainable liquid biofuels at laboratory scale, launched in April 2018.

ABC-Salt is an acronym for *Advanced Biomass Catalytic Conversion to Middle Distillates in Molten Salts* and aims to solve a number of technical challenges in biofuels production.

The project's new website is now live at www.abc-salt.eu, as well as an introductory newsletter. The project's first open access Summer School will be coming to Aston University 12-14 August 2019. Registration will open on the project website soon.

Partners: Rijksuniversiteit Groningen (Netherlands), BTG Biomass Technology Group BV (Netherlands), Norwegian University of Life Sciences (Norway), Gent University (Belgium), German Aerospace Center (Germany), Rise Innventia (Sweden), CIRPA The Inter-University Centre for Research in Environmental Psychology (Italy), Ayming (France), Aston University (UK)



Above: ABC-Salt's Heidi S Nygård from NMBU at work



ABC-Salt has received funding from the European Union's Horizon 2020 Research and Innovation Programme under grant agreement number 764089



BRISK2 partner Aston University in Birmingham, UK welcomes the new Director of the European Bioenergy Research Institute (EBRI).

Taking over the directorship from Prof. Tony Bridgwater, who remains a key figure in the BRISK2 project, Prof. Thornley joined Aston University near the end of 2018 from the Tyndall Centre for Climate Change Research at Manchester University.

Patricia is a chartered physicist with over 20 years' experience working in bioenergy in industry and academia. She has been involved in engineering many of the UK's early bioenergy plants. She brings with her the 4.5 million Euro EPSRC Supergen Bioenergy Hub, which she leads. Her personal interests focus on the environmental, social and economic impacts of bioenergy system and how these can be practically managed to deliver sustainable energy systems. For more information, email brisk2@aston.ac.uk.



Prof Patricia Thornley with Dr Daniel Nowakowski at EUBCE 2018



EUBCE WORKSHOP

ADVANCED BIOFUEL PRODUCTION WITH ENERGY SYSTEM INTEGRATION

THURSDAY 30TH MAY 2019, 9am-12.15pm

- ✓ Exploring Organosolv Pre-treatment
- ✓ SynGas Production & Fermentation
- ✓ Energy System Integration
- ✓ The Future of Biofuel Production

Ideal for: Industry Stakeholders · Biofuels R&D Innovators
Strategic Energy Services · NGOs · Commercial Energy Consumers

FIND OUT MORE AT www.ambition-research.eu

JOIN THIS SIDE EVENT. REGISTER FOR FULL OR DAY ATTENDANCE AT:



EUBCE 2019
27TH EUROPEAN BIOMASS
CONFERENCE & EXHIBITION

27 - 30 MAY 2019
LISBON - PORTUGAL
LISBON CONGRESS CENTER - CCL

Workshop Programme

9:00	Welcome & Registration	
9:10	Introduction to AMBITION	Bernd Wittgens (SINTEF) AMBITION Project Co-ordinator
	AMBITION Research Topics	
9:30	Exploring Organosolv Pre-treatment	Florbela Carvalho (LNEG)
9:50	Gasification for Fermentation	Berend Vreugdenhil (ECN>TNO)
10:10	Syngas Production and Fermentation	Torbjørn Ølshøj Jensen (DTU)
10:30	Coffee Break	
	ECRIA	
10:45	Energy System Integration for Future Biofuel Production	Nicolaus Dahmen (KIT)
11:00	Discussion Groups — Research Needs Towards Implementation	
11:45	Knowledge Exchange — Discussion Presentations	
12:05	Concluding Words and Closing Address	

To join this event, register for EUBCE 2019 at www.eubce.com

This half-day side event is delivered by the Horizon 2020 project [AMBITION](#) and is available to all delegates attending [EUBCE 2019](#).

There is a growing demand for solutions that provide integration and flexibility in the European energy system. The AMBITION project creates a bridge between two forms of energy carrier - grid electricity and biofuels. CO₂ from current energy systems and industrial production could be utilised as a carbon source and alternative to sequestration.

These integration approaches create flexibility between intermittent electricity and sustainable fuel production, optimising the valorisation of peak renewable electricity and enabling production of

sustainable biofuels in economically competitive conditions.

This workshop includes expert speakers from across AMBITION's European partners and leading research institutes. It is an opportunity to discover the progress made by AMBITION in Advanced Biofuel Production and Energy System Integration and join in the conversation about Europe's sustainable energy future.

Energy and biofuels stakeholders attending EUBCE 2019 in Portugal are invited to attend this free side event, to network and exchange views, ideas and knowledge in pursuit of a sustainable future for bio-based fuels.

Organising Committee: Bernd Wittgens (SINTEF); Tony Bridgwater (Aston University) Francisco Giro (LNEG); Jaap Kiel (TNO>ECN) and Nicolaus Dahmen (KIT),

For more information, contact: Bernd Wittgens
bernd.wittgens@sintef.no



AMBITION has received funding from the European Union's Horizon 2020 Research and Innovation Programme Under grant agreement no 731263



INTERNATIONAL BIOENERGY EVENTS

Summer Schools & Workshops Save the Date!

Are you on the lookout for workshops and events to support you and your biofuels research? Get ready for these great opportunities with Horizon 2020 projects:

AMBITION Workshop—EUBCE Side Event

30 May 2019

Advanced Biofuel Production with Energy System Integration

ABC-Salt Open Access Summer School

12-14 August 2019—Aston University, UK

Biomass Liquefaction in Molten Salts

Programme and registration coming soon to

www.abc-salt.eu

BRISK2 Workshop—Announcement Coming Soon!

BRISK2 is coming to EUBCE 2019

BRISK2 is delighted to be exhibiting at the EUBCE again in 2019. This time the 27th European Biomass Conference & Exhibition is coming to Lisbon, Portugal from the 27th to the 30th May 2019, and will bring together bioenergy researchers from academia and industry. Visit us at stand 13 to discuss how BRISK2 can boost your biofuels research.

For more information on BRISK2's presence at EUBCE 2019, contact Aston University at brisk2@aston.ac.uk

INSHIP ECRIA Workshop

February 21, 2019 — London, UK

Energy from Waste

February 27-28, 2019 — London, UK

International Biomass Conference & Expo

March 18-20, 2019 — Savannah, USA

Argus Biomass

April 8-10, 2019 — London, UK

9th European Algae Industry Summit

April 10-11, 2019 — Lisbon, Portugal

4th Green and Sustainable Chemistry Conference

May 5-8, 2019 — Dresden, Germany

Global Sustainable Aviation Forum

May 13, 2019 — Montreal, Canada

2nd Symposium on Waste Energy and Environment

May 20th—21st, 2019 — Malmo, Sweden

2nd Symposium on Waste Energy and Environment

May 23rd - 26th, 2019 — Barcelona, Spain

EUBCE 2019

May 27th—30th, 2018—Lisbon, Portugal

5th International Congress on Water, Waste and Energy Management

July 22nd—24th, 2018—Paris, France

Green Energy and Environmental Technology (GEET-19)

July 24th - 26th, 2018—Paris, France

International Conference on Biofuels & Bioenergy

September 23rd—24th, 2019 — Barcelona, Spain



EUBCE 2019

LISBON - PORTUGAL
27 - 30 MAY 2019
LISBON CONGRESS CENTER - CCL

27TH EUROPEAN BIOMASS CONFERENCE & EXHIBITION

KEY CONTACTS

TA & General Enquiries to brisk2@energy.kth.se

**BRISK2 Project Co-ordinator
Work Package 1 & Executive
Committee (ExCo) Leader**

Andrew Martin
andrew.martin@energy.kth.se



ExCo

**Work Package 2 Leader—
Transnational Access &
Project Co-ordination**

Mahrokh Samavati
brisk2@energy.kth.se



ExCo

**Work Package 3 Leader—
Promotion & Dissemination**

Tony Bridgwater
a.v.bridgwater@aston.ac.uk



ExCo

**Work Package 4 Leader—
Protocols & Benchmarking**

Lydia Fryda
lydia.fryda@tno.nl



**Work Package 5 Leader—
Feedstock Characterisation**

Stefan Retschitzegger
stefan.retschitzegger@bioenergy2020.eu



ExCo

**Work Package 6 Leader—
Advanced Measurement
Techniques**

Nicolaus Dahmen
nicolaus.dahmen@kit.edu



ExCo

**Work Package 7 Leader—
Biorefining Approaches**

Wim Mulder
wim.mulder@wur.nl



**Work Package 8 Leader—
System Simulation Tools**

Bernd Wittgens
bernd.wittgens@sintef.no



ExCo

**Executive Committee
Member**

Jaap Kiel
jaap.kiel@tno.nl



ExCo

**Executive Committee
Member**

René van Ree
rene.vanree@wur.nl

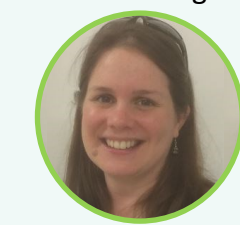


ExCo

Contributions for the next BRISK2 newsletter are welcome. Please submit articles with high resolution photos to:

BRISK2 Newsletter Editor

Pippa Try
brisk2@aston.ac.uk



This newsletter was produced by the European Bioenergy Research Institute at Aston University, UK on behalf of BRISK2, EU Grant Agreement number 731101. Any opinions or material contained within this newsletter are those of contributors and do not necessarily reflect the views of EU Horizon 2020 or Aston University.