

PARTNER PROFILE

ETC Piteå - Sweden

Energy Technology Centre (ETC) in Piteå, Sweden, is a not-for-profit research organisation that provides both research work and professional services to the academia, public agencies and industry. ETC's main focus of research is thermochemical conversion of biomass, and its services are related to applications in combustion, gasification and biorefining processes.

ETC's main competences and capabilities are summarised below:

- Pre-treatment and feeding of biomass;
- Sampling and diagnostics in conversion processes;
- Process modelling;
- Analyses for conversion products;
- Spray characterisation;
- Upgrading of syngas.

Within BRISK, ETC is taking part in research on the determination of trace elements and impurities

“Through tailor-made experiments, advanced computations, and in-depth investigations, ETC has the vision to be a pioneer in providing tomorrow's energy solutions for sustainable development.”

Magnus Marklund
Managing Director, ETC

in biomass synthesis gas obtained from gasification. Catalytic tests with poison resistant catalysts will be carried out on synthesis gas from a pressurized biomass gasifier at ETC.

Furthermore, ETC provides Transnational Access (TA) to the following three experimental installations at the ETC site in Piteå:

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Figure 1: Mounting stand and lower parts of the PEBG installation at ETC. The gasifier vessel containing gasification reactor and cooling quench is seen in the centre of the picture.

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Figure 2: Left to right - Magnus Marklund (Managing Director) and Fredrik Weiland (Research engineer/PhD candidate) next to the PEBG gasifier at ETC.

- Pressurized Entrained Flow Biomass Gasifier (PEBG) for solid or liquid biomass feedstock and pure streams of $O_2/N_2/H_2O/CO_2$ at 0.5 MW_{th} and 5 bar system pressure. Detailed characterization of the resulting syngas, tars and particulate matter is possible.
- Pressurized Spray Test Rig (PSTR) for spray characterization of twin fluid nozzles. Phase Doppler Anemometry (PDA) and high-speed photography is possible for liquid flow rates up to 20 lpm at pressures up to 10 bar.
- Vertical Atmospheric Flexi Fuel Rig (VAFF) for solid biomass at 0.2 MW_{th} in a two stage combustion concept facilitating non-intrusive diagnostics in the burner region at reducing conditions.

More detailed information around these three installations can be found via the BRISK website.

“It’s worth mentioning the recent progress made within the research performed in the PEBG installation. Interesting insights have been obtained from experimental trials performed on different wood-based feedstock, e.g. stem wood, bark and pyrolysis oil. The results are either already available, or will be available in scientific journals.”

Olov Öhrman
Marketing Manager, ETC

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Figure 3: Upper part of the Pressurised Spray Test Rig (PSTR) at ETC and the optical parts of the PDA setup.

Any interested party is welcome to contact ETC for discussing possible projects that could be performed within the BRISK TA initiative and make use of some of the installations mentioned above.

ETC
PIONEERING ENERGY SOLUTIONS

Contact

For further details about how to apply to utilise ETC’s facilities as part of the BRISK initiative contact:

Magnus Marklund

T: +46 911 23 23 85

E: magnus.marklund@etcpitea.se

W: www.etcpitea.se

