Fuelling greater sustainability via pyrolysis

There is widespread political intent to phase out fossil energy sources within a generation and limit the projected global temperature rise to one and a half degrees above pre-industrial levels. EU energy and climate policy aims for a 40 % reduction in emissions by 2030 and the European Green Deal proposes climate-neutrality by 2050. De-carbonising our energy future is a challenging task. Not all renewable energy technologies, their emission-cutting potentials and societal costs are equal. This leaves decision makers with an important choice in compiling the best energy portfolios.

My research objective is to provide accurate characterisation of resources, process technologies and costs so that policy makers can assess feasibility. Thermal conversion processes like pyrolysis have become critically important for greener fuel production and the refining of platform chemicals or high-value products in the bioeconomy. I will present background, methodologies and results from two pyrolysis routes for some key biomass resources that have relevance in reaching our energy and climate sustainability targets.