TRANSFORMING PULP MILLS INTO BIOREFINERIES THROUGH RENEWABLE METHANOL PRODUCTION

Aino K. M. Pesola[1*], Naveen K. Chenna[1], Johanna A. H. Ylikoski[1]

[1] ANDRITZ Oy, Tammasaarenkatu 1, 00180 Helsinki, Finland
aino.pesola@andritz.com, +358 44 5525 897
naveen.chenna@andritz.com, +358 40 413 4028
johanna.ylikoski@andritz.com, +358 40 509 8665

ABSTRACT

The scarcity of renewable chemicals in the market demands new solutions and ambitious development targets from all industries. To answer the global need for biochemicals, pulp mills can play an important role. Pulp mills are already converting biomass to a variety of sustainable products, but in the future, they could be major producers of biochemicals. In a pulp mill, along with pulp, biomethanol is produced as a by-product through demethoxylation of lignin. By refining and purifying the raw methanol further, commercial grade methanol is produced and this high-quality biochemical is an important raw material for various industries. This is by far the most cost-efficient way to add renewable chemicals into the fossil-source dominated market. Producing biomethanol by valorizing pulp mill side streams is the first step and paves the path to possible e-methanol production in the future. Pulp mills could truly be biorefineries by utilizing their surplus electricity and biogenic CO_2-emissions to produce sustainable and valuable product, e-methanol, in the future. With this paper, we would like to convey the story of renewable methanol production at pulp mills.

Keywords: biomethanol, biorefinery, circular economy, electrolysis, e-methanol