

Departmental Seminar

Seminar Title	: Conference Return Seminar on Comparison of conventional and microwave-assisted pyrolysis for biochar production from tea waste Presented at 4th International Symposium on Analytical and Applied Pyrolysis (PYROASIA 2024)
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Venue	: Old Seminar Hall, Chemical Engg. Department
Date and Time	: 09 Dec 2024 (11.00 A.M.)
Abstract	: This study examines the rapid pyrolysis of tea waste utilizing two distinct pyrolysis techniques: traditional pyrolysis and microwave-assisted pyrolysis. The pyrolysis of tea waste was conducted using conventional pyrolysis at varying temperatures (400-600°C) and microwave-assisted pyrolysis at 450W. In microwave-assisted pyrolysis conducted using different susceptors (without susceptor, biochar, graphite, and activated carbon granules) in the ratio 1:1. In traditional pyrolysis, the highest yields of bio-oil and biochar are 38 wt.% and 49.97 wt.%, respectively, at 400°C and the non-condensable gas output is 40.89 wt.% at 600°C. But microwave-assisted pyrolysis without susceptor gives the highest biochar yield of 87.46 wt.%, the highest bio-oil yield of 42.32 wt.% using activated carbon granules, and non-condensable gases of 65.83 wt.% by using graphite as a susceptor.