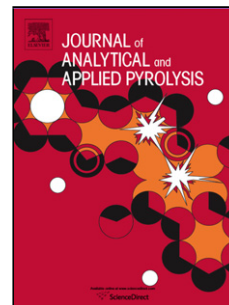


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Sludge as a Relinquishing Catalyst in Co-Pyrolysis with Palm Empty Fruit Bunch

Fiber

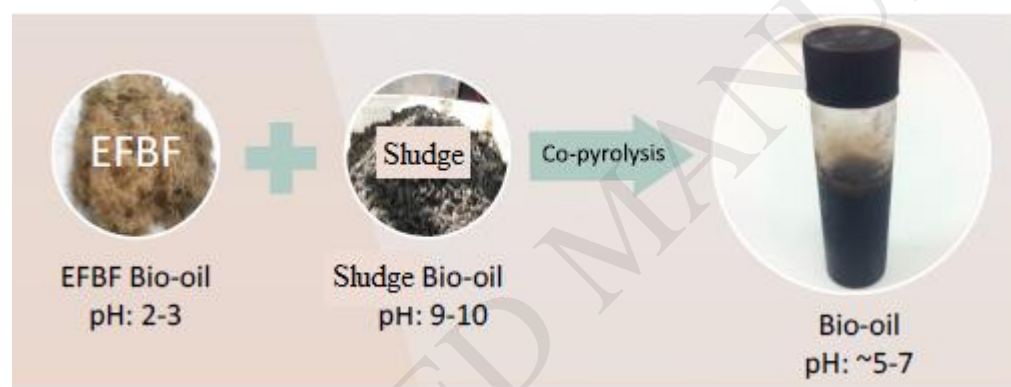
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Graphical abstract



Highlights:

- Negative synergic effect in bio-oil yield during co-pyrolysis of EFBF and sludge
- 50wt.% sludge in EFBF co-pyrolysis bio-oil has 7.2 pH
- Esterification between EFBF and sludge bio-oil compounds at higher sludge ratios
- 35wt.% sludge in EFBF as desired ratio for yield and properties of bio-oil

ABSTRACT

Bio-oil from the fast pyrolysis of biomass has the potential to be an effective and reliable renewable energy source. A common issue faced is the high acidity of bio-oil, which obstructs bio-oil storage and processing. This study utilized fast co-pyrolysis of oil palm Empty Fruit Bunch Fiber (EFBF) with Palm Oil Sludge (sludge) at different ratios (10, 20, 35 and 50

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