

Figure 1. Bench scale 300 g h⁻¹ fluidised bed fast pyrolysis rig set-up.

Key: 1 - feed hopper with twin screw feeder, 2 – fast screw, 3 – nitrogen preheater, 4 – fluidised bed reactor, 5 – cyclone, 6 – charpot, 7 – metal transition pipe, 8 – glass transition pipe, 9 – water cooled condenser, 10 – dry ice acetone condenser, 11 – rubber transition pipe, 12 – cotton wool filter, 13 – gas meter, 14 – micro-gc, 15 – gas vent

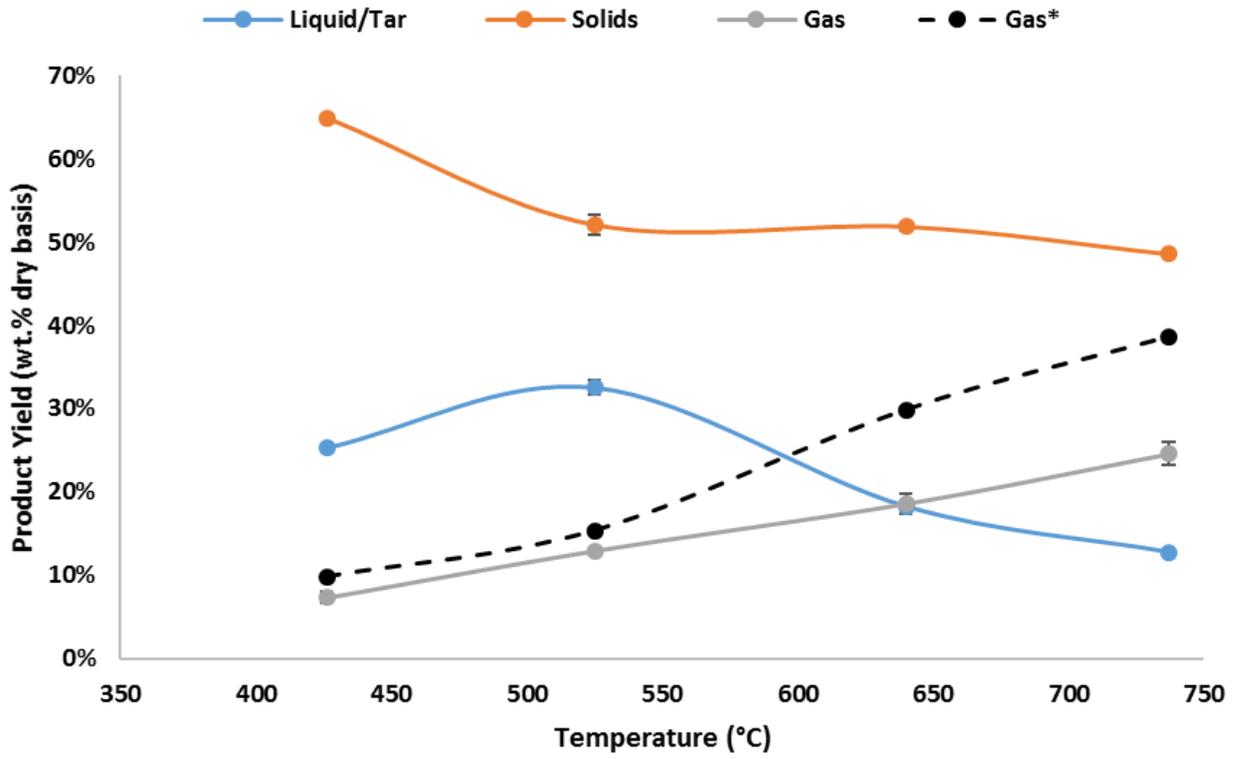


Figure 2: Yield of products from pre-treated trommel fines in relation to fast pyrolysis temperature
 Gas* - Gas calculated by difference

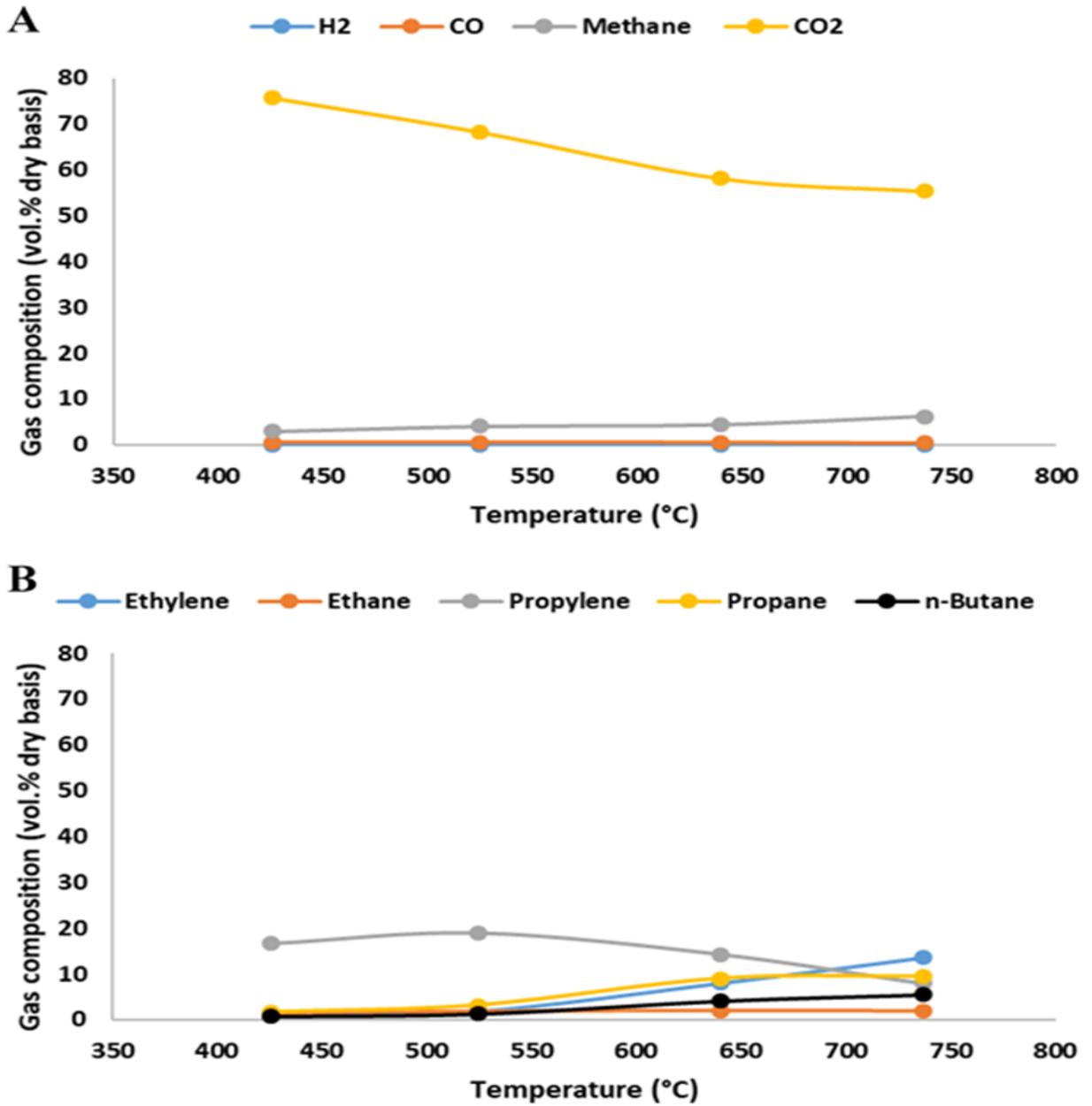


Figure 3: Composition of gaseous products from [re-treated trommel fines in relation to fast pyrolysis temperature. A – permanent gases; B - C₂-C₄ hydrocarbons.

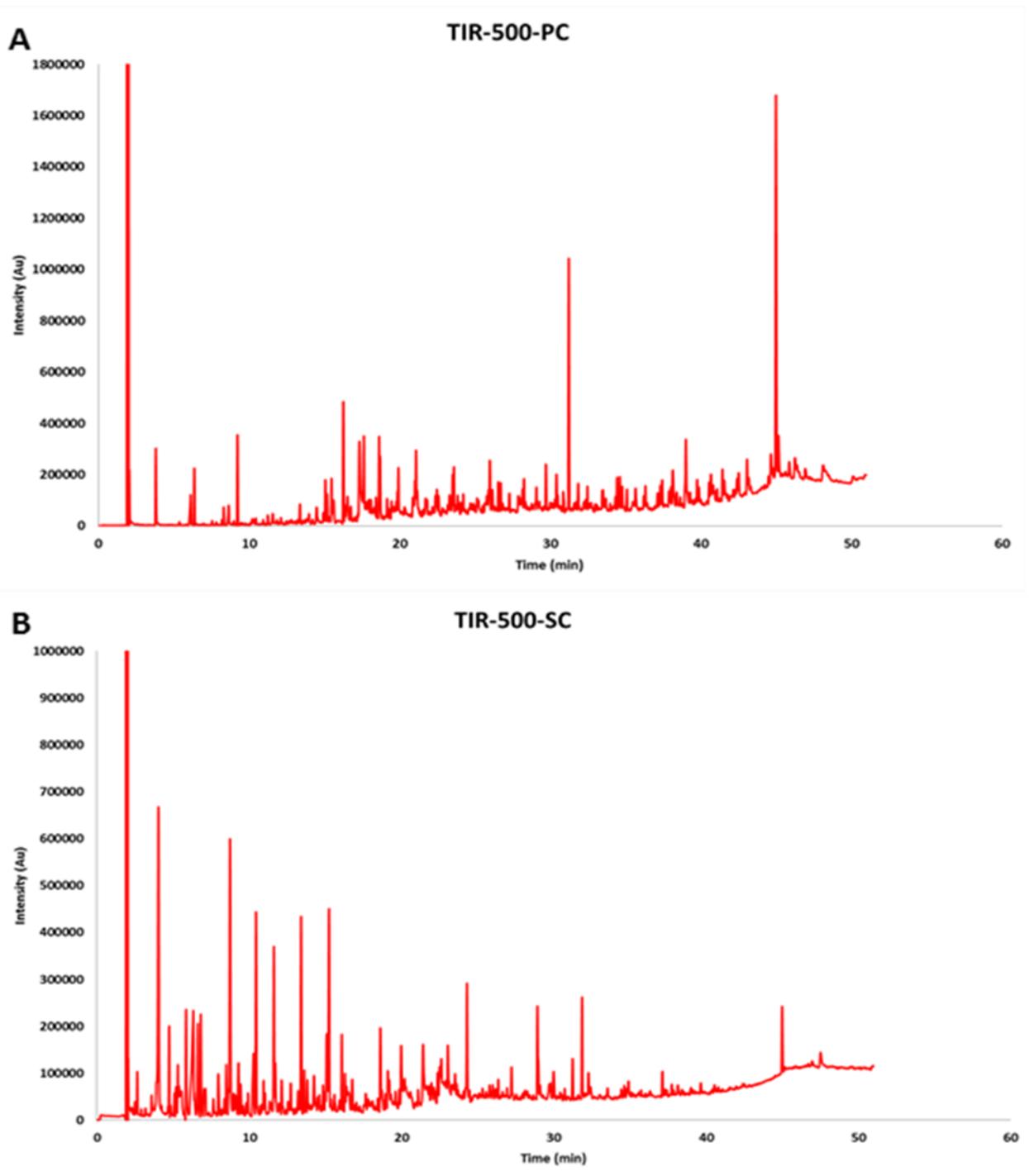


Figure 4. GC-MS spectra of the primary and secondary condensates from trommel fines' pyrolysis at 500 °C. TIR- Temperature Investigation Run; PC – Primary condensate; SC – Secondary condensate

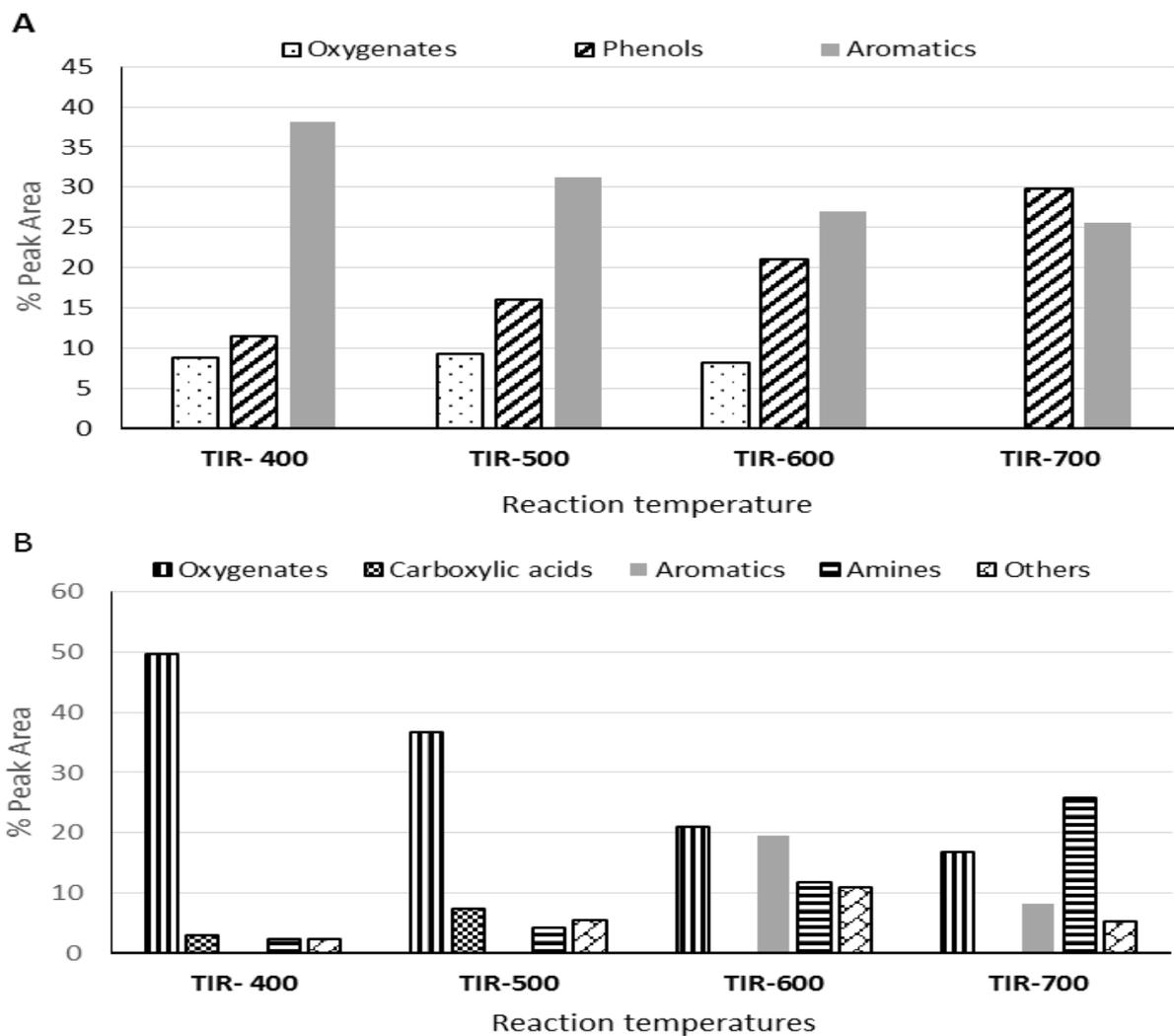


Figure 5. Compositions of the primary and secondary condensates from trommel fines in relation to fast pyrolysis temperature. TIR- Temperature Investigation Run; A – Primary condensate; B – Secondary condensate

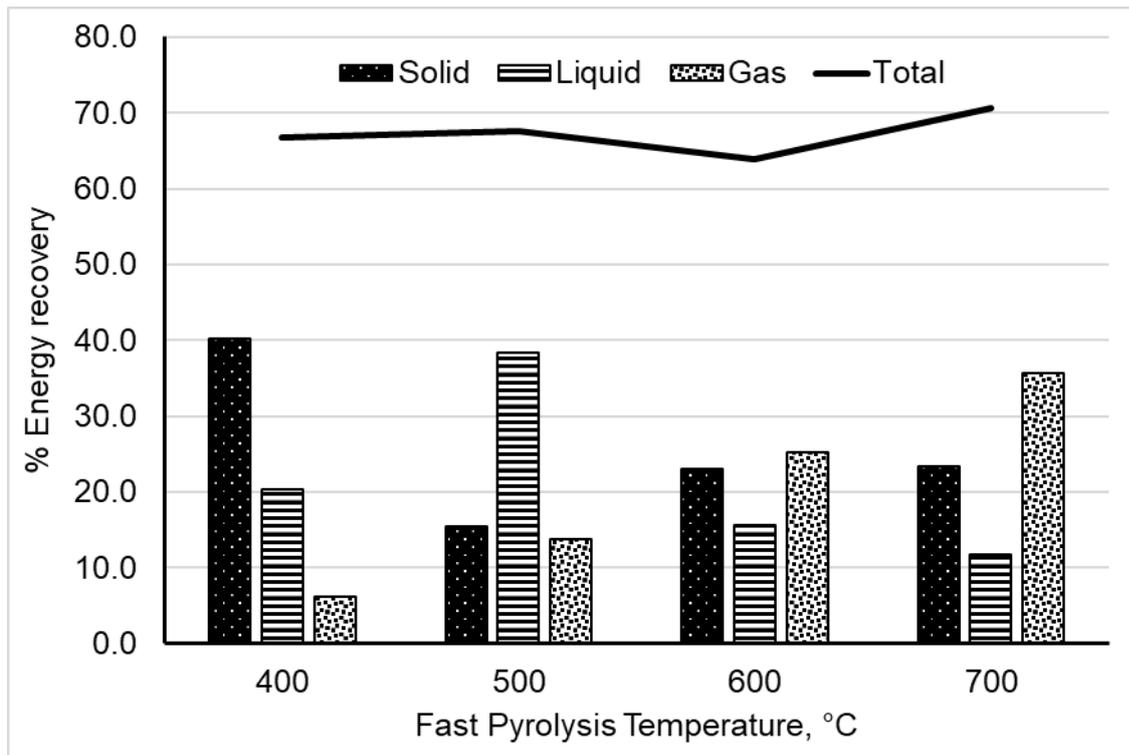


Figure 6. Energy recovery efficiency from fast pyrolysis process conversion efficiency in relation to temperature