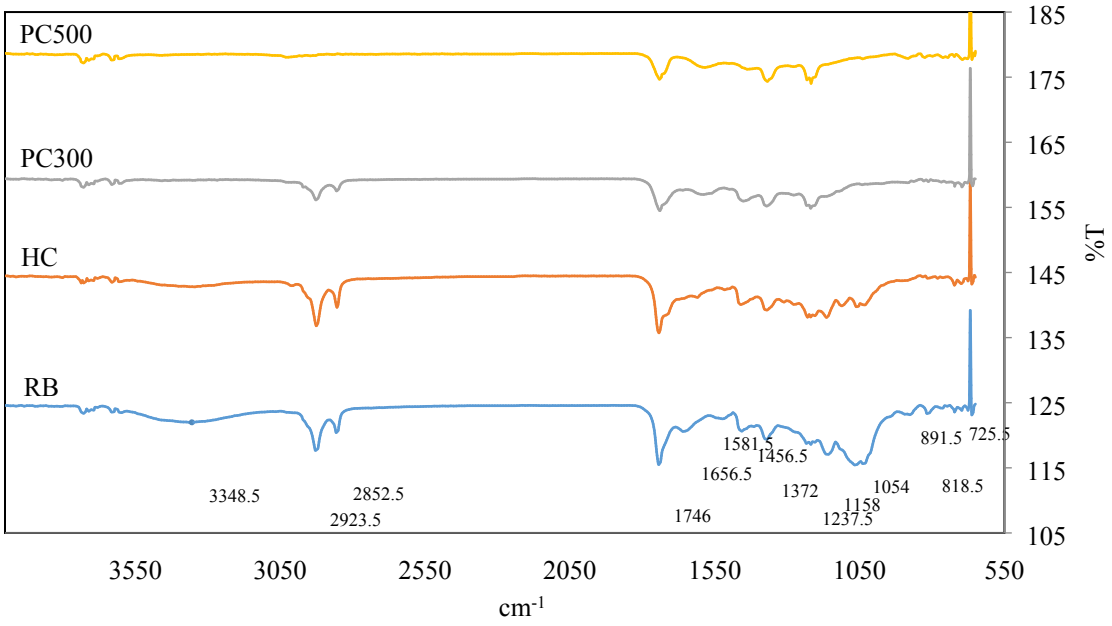
FTIR spectra of Spent coffee residue and its biochars



The intensity of two peaks between 2930-2850 cm^{-1} resulting from C-H stretching vibration in cellulose and lignin decreased in PC300 and they disappeared in PC500. The peak at 1746 cm^{-1} representing the C=O stretching of unconjugated ketone of lignin and/or cellulose are observed in all feedstocks. Similarly, the peak at 1456 cm^{-1} representing CH_2 deformation stretching (lignin) and the peak at 1372 cm^{-1} representing aliphatic C-H stretching in methyl and phenol OH are observed in all feedstocks. The peaks at 1158 and 1054 cm^{-1} represent C-O-C asymmetric stretching (in cellulose) and C-O stretching vibration (cellulose and hemicellulose) disappered in PC300 and PC500 (39). C-H bending aromatic out-of-plane deformation of lignin observed at all samples at 818.5cm^{-1} between 725 cm^{-1}. The peak at 1581cm^{-1} representing conjugated C=O stretching and aromatic C=C vibration was only observed only in PC300 and PC500.