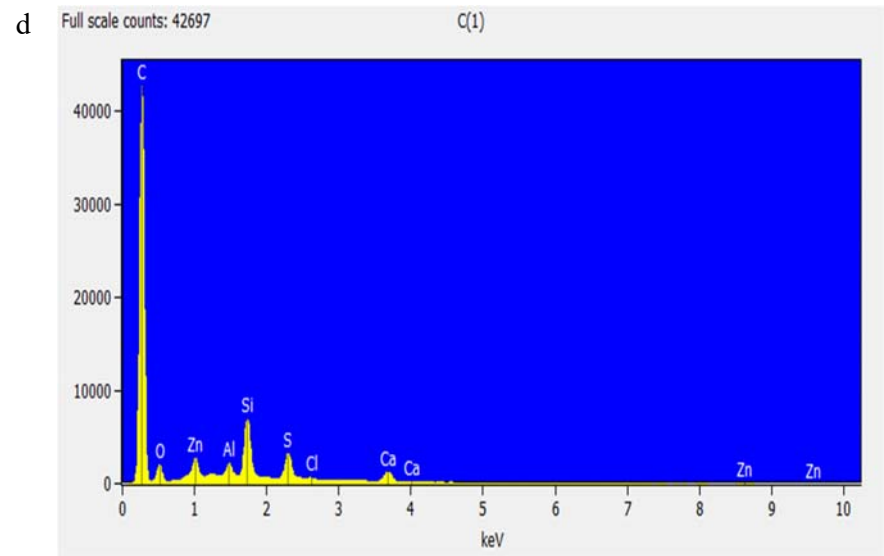
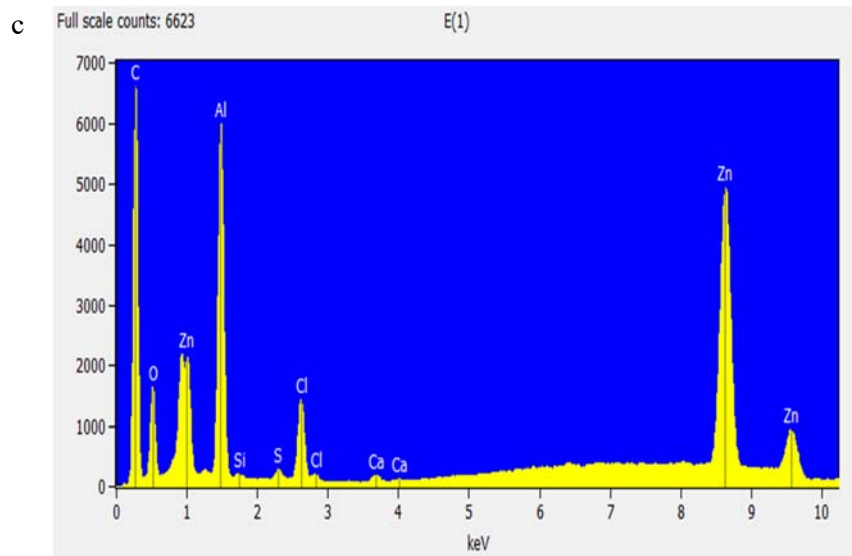
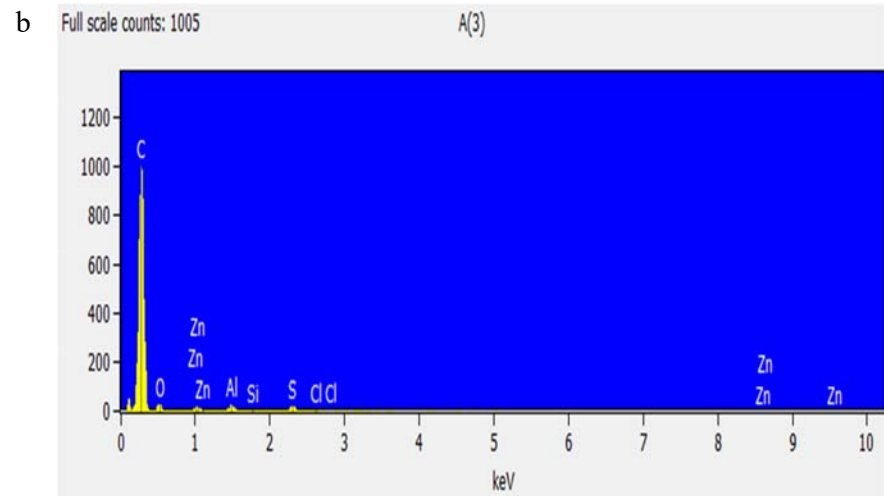
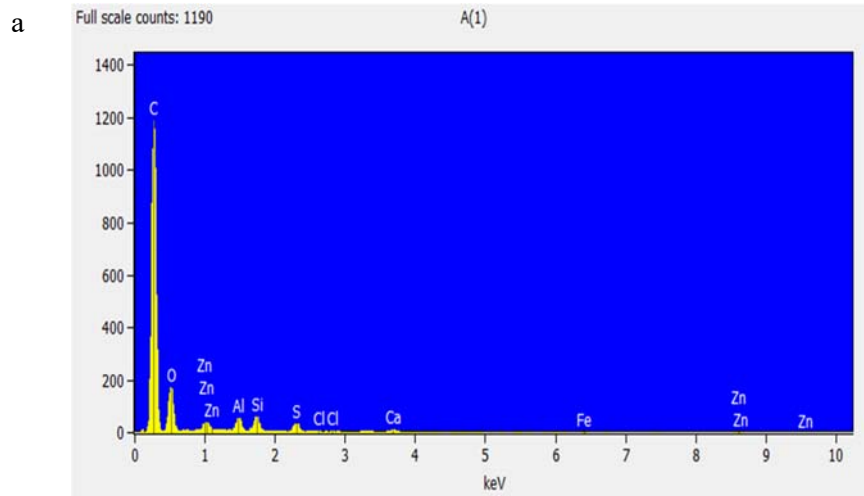


Fig. S1. A simplified schematic for the experimental set-up of the pyrolysis and co-pyrolysis of the scrap tires. 1: inert gas source. 2 and 4: control valves. 3: N₂ supply channel, 5: pyrolysis reactor unit, 6: furnace, 7: inert gas purging point, 8: condenser, 9, 10, and 11: water inlet and outlet openings, 12: liquid collection point and flue gas (non-condensable) exit



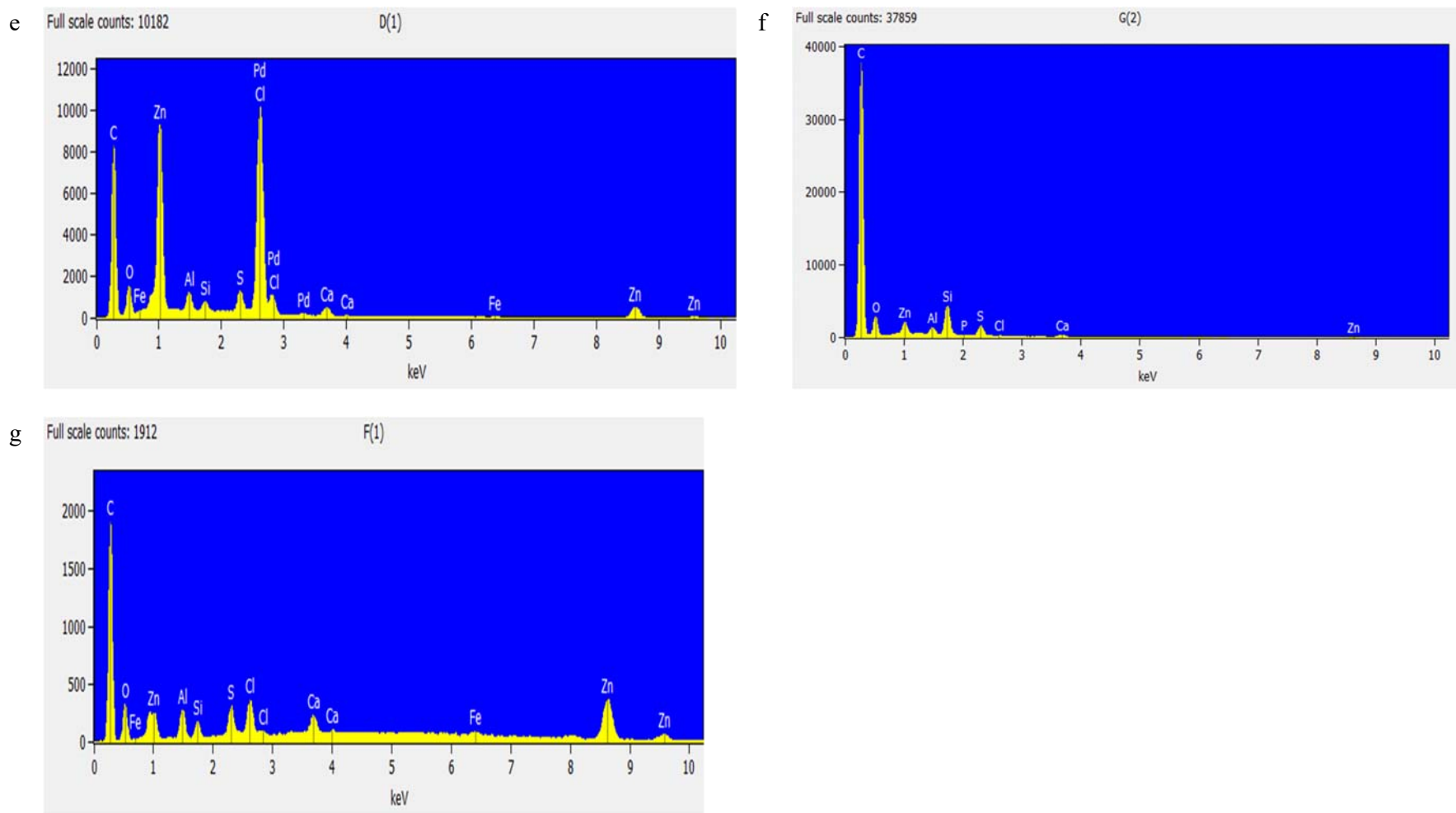


Fig. S2. EDX spectra for RS (a), S450 (b), SC450 (c), S500 (d), SC500 (e), S550 (f), and SC550 (g).

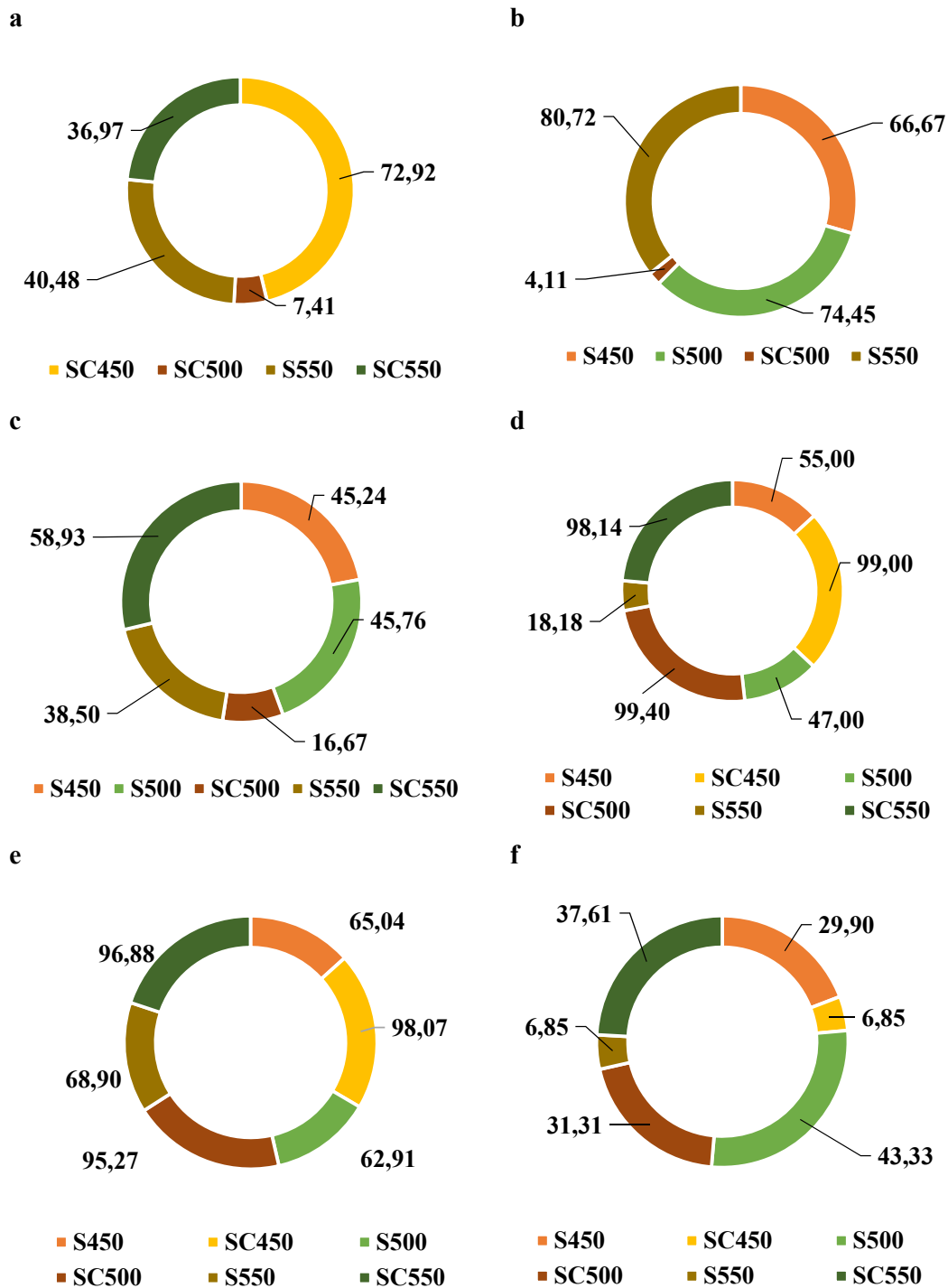


Fig. S3. Increase (%w/w) in elemental compositions (obtained from Table 2) of the produced chars after pyrolysis for (a) aluminium (b) silicon (c) sulphur (d) chlorine (e) zinc (f) calcium

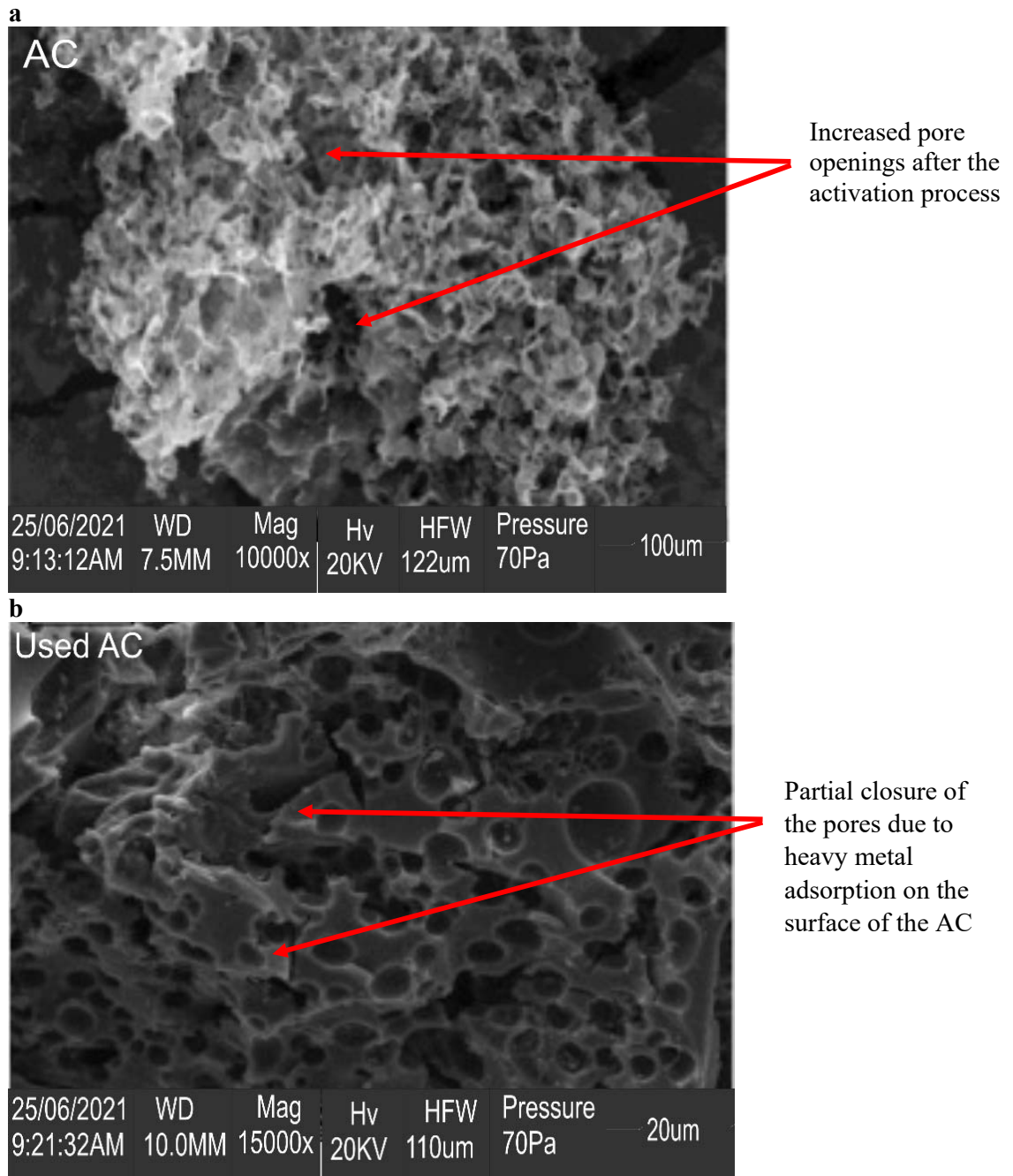


Fig. S4. SEM images for activated carbon (a) and the spent activated carbon after wastewater treatment (b)

Table S1. FTIR functional groups and classification of compounds in the char products of the thermochemical conversion processes

Functional groups	Wavelength (cm ⁻¹)	Classification
O-H stretching	3216 - 3364	alcohols, phenols carboxylic acid
C-H stretching	2970-3084	alkanes, aromatic compounds
C-H stretching	2790-2936	alkanes
C=O stretching C=C stretching C-C stretching	1476-1818	aldehydes or ketones, alkenes, and aromatic compounds
C-H bending	1302-1394	alkanes
C=C stretching	750-982	alkenes