**Supporting Information**

**Towards biowastes valorization. Peanut shell as resource for quality chemicals and activated biochar production.**

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**Figure S1.** XRD pattern of regenerated Ni(5)Z

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| **Table S1.** Main compounds detected in bio-oils by CG-MS analysis |
| Compounds |
| *Hydrocarbons* |
| Aliphatics |
| 3-methyl heptane |
| Aromatics |
| cumene |
| indane |
| xylene |
| benzene, 1,3,5-trimethyl |
| toluene |
| Cyclics |
| β-caryophyllene |
| *Oxygenated compounds* |
| Acids |
| acetic acid |
| pentanoic acid |
| propanoic acid |
| formic acid |
| Alcohols |
| 1-vinylheptanol |
| 2-amino-3-metil-1-butanol C5H13NO |
| glycerol α-ethyl ether |
| methanol |
| 1,3-dihydroxybenzene |
| α-terpineol |
| Aldehydes |
| 2-hydroxy-3-methoxybenzaldehyde |
| Amines |
| N-methyl-tert-butylamine |
| N-nitrosodimethyl amine |
| pyrrolidine, 2,5-dimethyl-1-nitroso |
| Ketones |
| 1,2-cyclopentanodione |
| 1,2-cyclopentanodiona-3-methyl |
| 1-hydroxy-2-butanone |
| 2-(hydroxymethyl) cyclohexanone |
| 2-cyclopenten-1,4-dione |
| 2-cyclopenten-1-one, 3-ethyl-2-hydroxy |
| 2-cyclopenten-1-one-2,3-dimethyl |
| 2-cyclopenten-1-one-2-methyl |
| 2-pentanona-4-hydroxy-4-methyl |
| 2-propanone-1-(acetyloxy)- |
| 4,5-dihydro,2(1H)pentanelone |
| acetil propionil |
| etiliden acetone |
| guaiacyl acetone |
| Esters |
| phenyl carbamylate |
| glycine-N-methyl-N-methoxycarbonil, heptil ester |
| nitro ethyl propionate |
| Ethers |
| isoamyl nitrate |
| Phenols |
| phenol, 2-methoxy-4-propyl- |
| cis-isoeugenol |
| benzene, 1-ethoxy-2-methoxy |
| 4-allyl-2-methoxyphenol |
| 2-methoxyphenol |
| 2-methoxy-4-methylphenol |
| phenol, 4-methyl- |
| 2-methoxy-4-vinylphenol |
| phenol 2,6-dimethoxy |
| Furans |
| 2(5H)furanone |
| 2(5H)furanone-5-methyl |
| 2-furanmethanol |
| 3-furaldehyde |
| 4-methyl-2(5H)-furanone |
| 5-hydroxy methyl furfural |
| furfural |
| furfural-5-methyl |