

## **Physico-chemical properties and toxicological effects on plant and algal models of carbon nanosheets from a nettle fibre clone**

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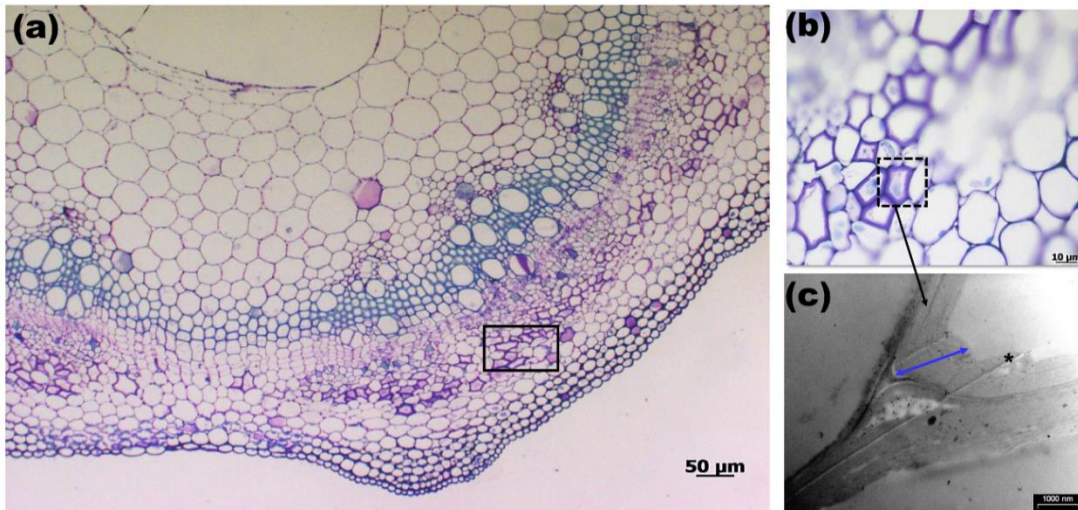
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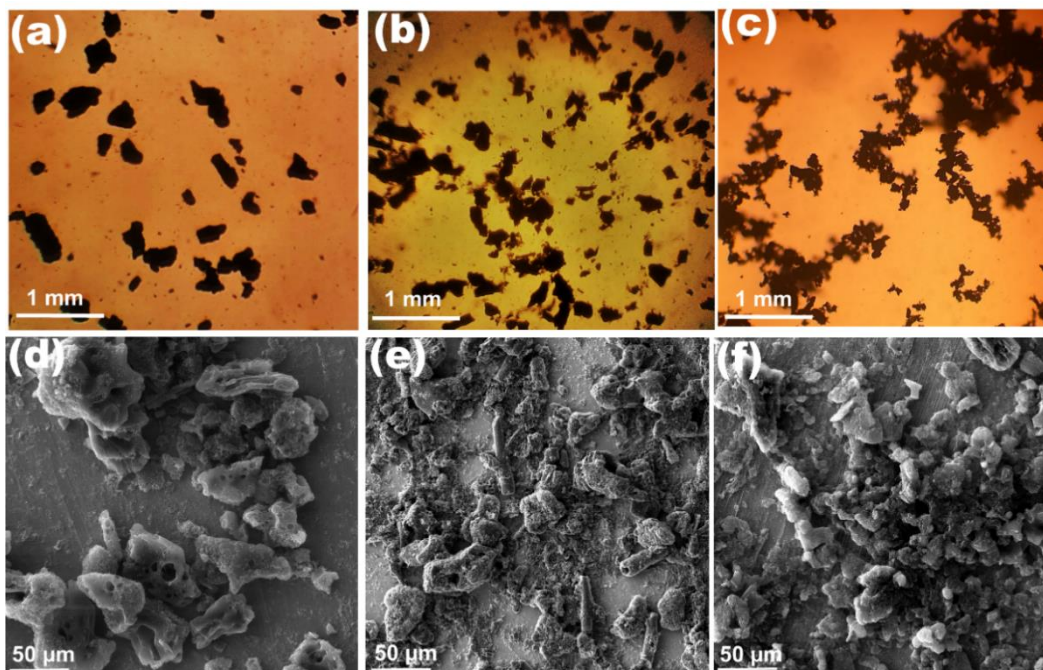
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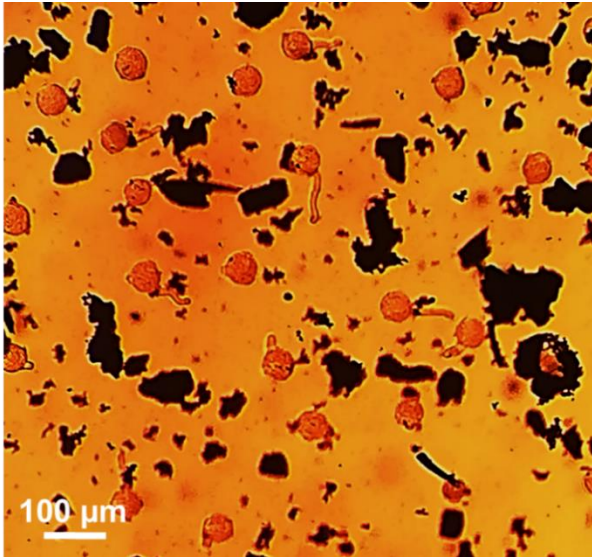
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**Supplementary Figure 1:** Anatomy of the nettle stem. (a): Toluidine Blue O staining of a stem cross section (the square indicates bast fibres); (b): Magnified image showing a small cluster of three adjacent bast fibres (the dotted square indicates one bast fibre in transversal cross section); (c): immunoTEM image showing the gelatinous wall of nettle bast fibre (blue double-headed arrow) with gold nanoparticles denoting the presence of crystalline cellulose. The G-layer of nettle fibres shows a region with loose appearance (asterisk).



**Supplementary Figure 2:** Aggregates formed by the nettle CNS. (a) Stem-derived CNS, (b, c) leaf-derived CNS in BK<sub>SUC</sub> medium observed with an inverted microscope. FESEM images at low magnification of CNS prepared at 650 °C from nettle stem (d), leaves (e, f) and using NaHCO<sub>3</sub> as an activating agent. The ratio of nettle powder and NaHCO<sub>3</sub> is 1:1 (a, d and b, e) and 1:2 (c and f).



**Supplementary Figure 3:** Representative inverted microscopy image showing adhesion of CNS (in this case leaf CNS1:2 at 100  $\mu\text{g}/\text{mL}$ ) to the pollen grains.