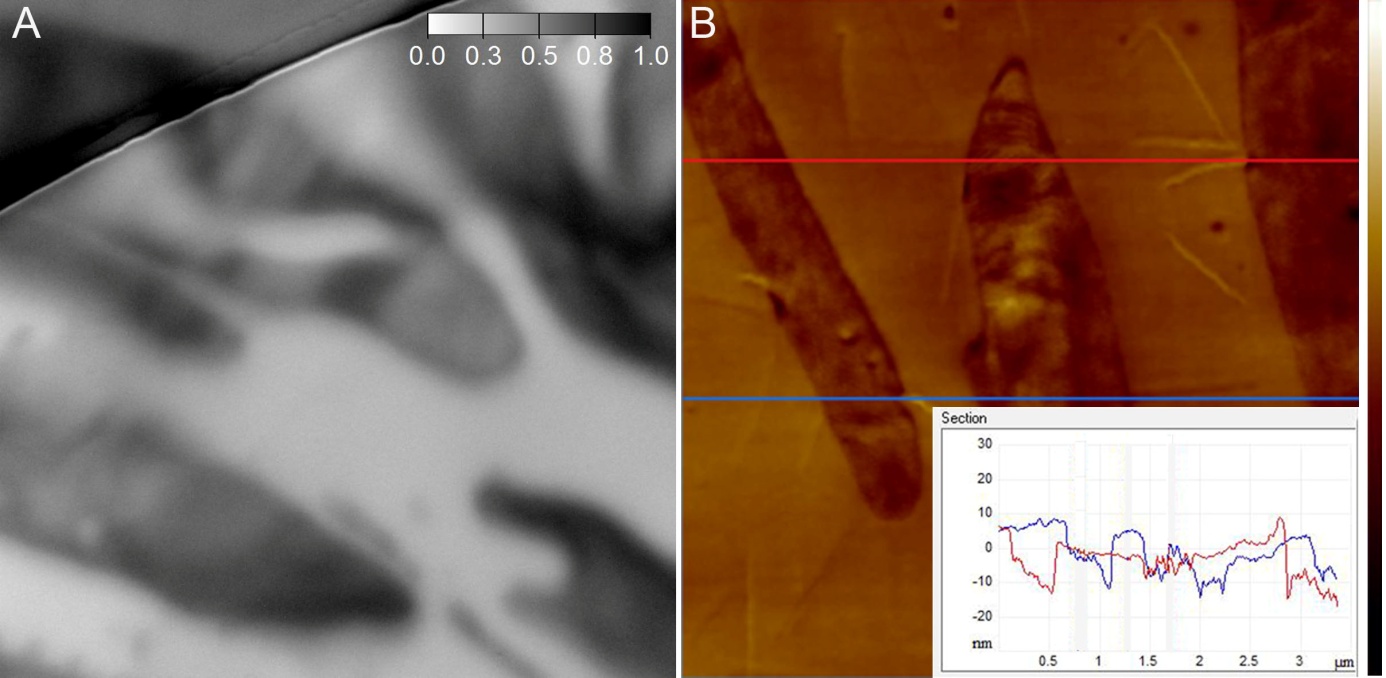
*****In situ* determination and imaging of physical properties of soft organic materials by ATEM****

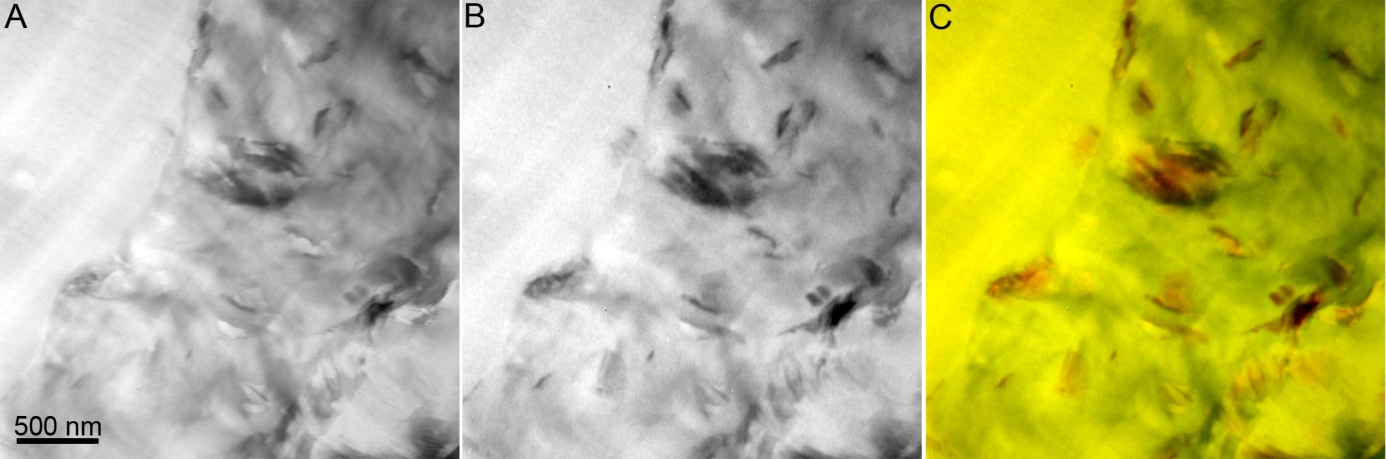
Supporting Information

## Fig.SI1.jpg

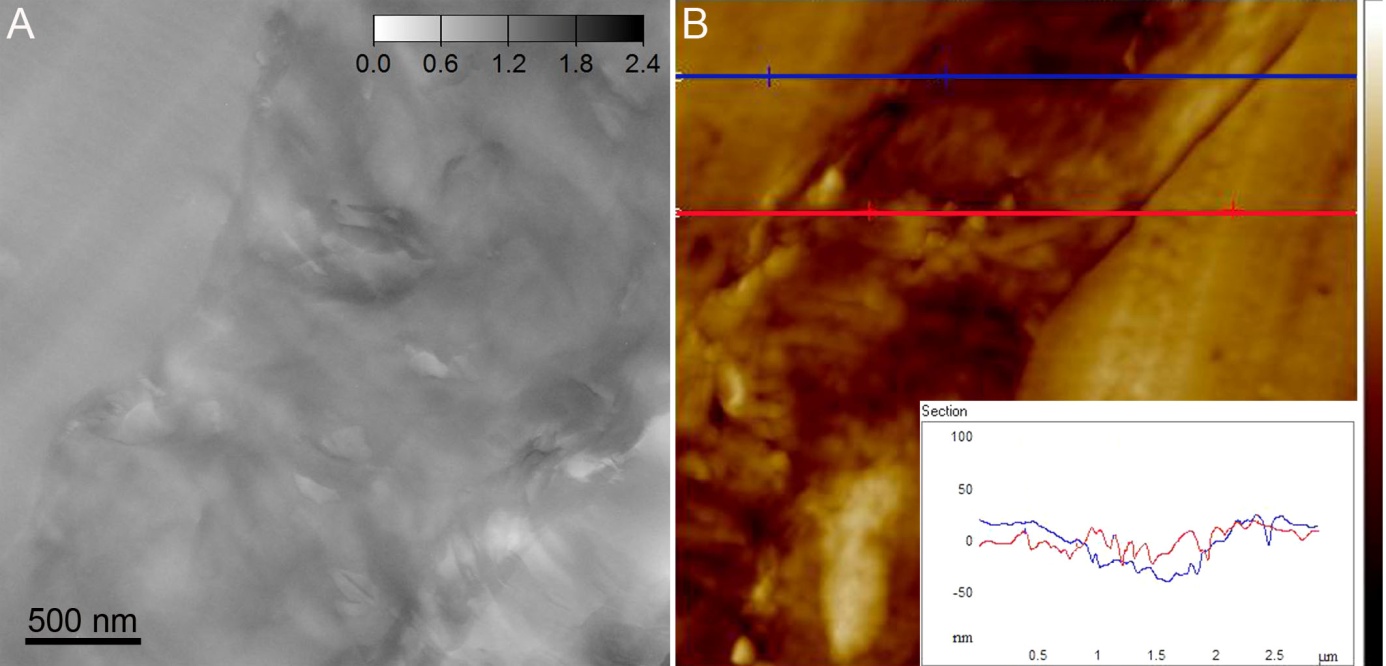
**Figure ES 1.** The quality of the drift correction between plasmon image and carbon elemental map of Polycaprolactone - Polylactid (PCL-PLA) polymer blend. (A) EFTEM bulk plasmon image recorded using 10 eV integration window centered on 21 eV*;* **(**B**)** conventional three window carbon elemental map (C K); (C) superimposed bulk plasmon image (red) and carbon map (green) after drift correction procedure.



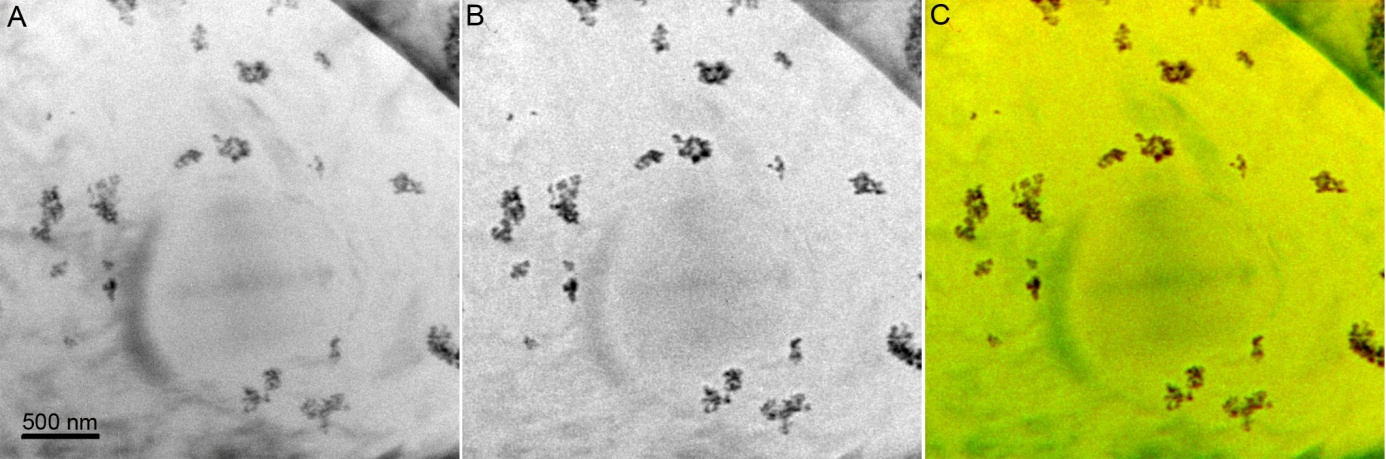
**Figure ES 2.** TEM relative thickness map with t/λ scales (A) versus AFM topographical profile (B) of Polycaprolactone - Polylactid (PCL-PLA) polymer blend. The insert in Figure (B) represents randomly selected sections of the surface profiles. Height variation: 0-100 nm in (B).



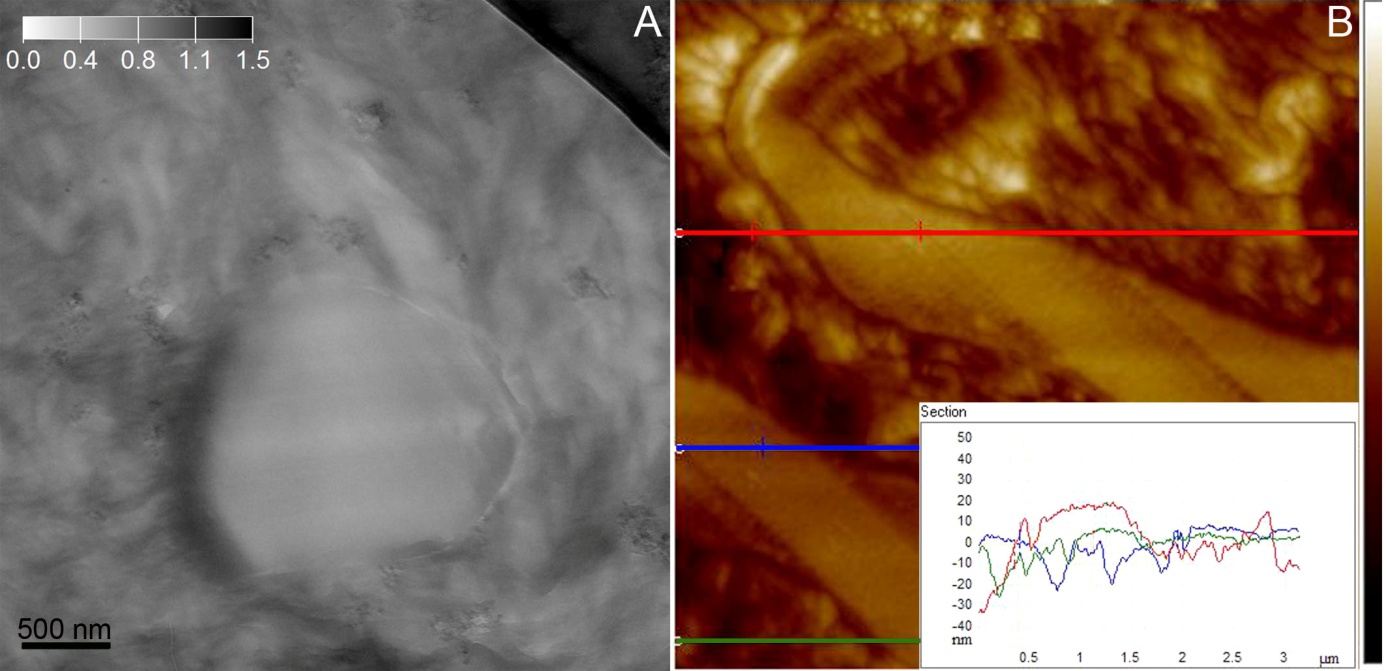
**Figure ES 3.** The quality of the drift correction between plasmon image and carbon elemental map of polyethylene – polystyrene - graphite nanocomposite. (A) EFTEM bulk plasmon image recorded using 10 eV integration window centered on 21 eV; **(**B**)** conventional three window carbon elemental map (C K); (C) superimposed bulk plasmon image (red) and carbon map (green) after drift correction procedure.



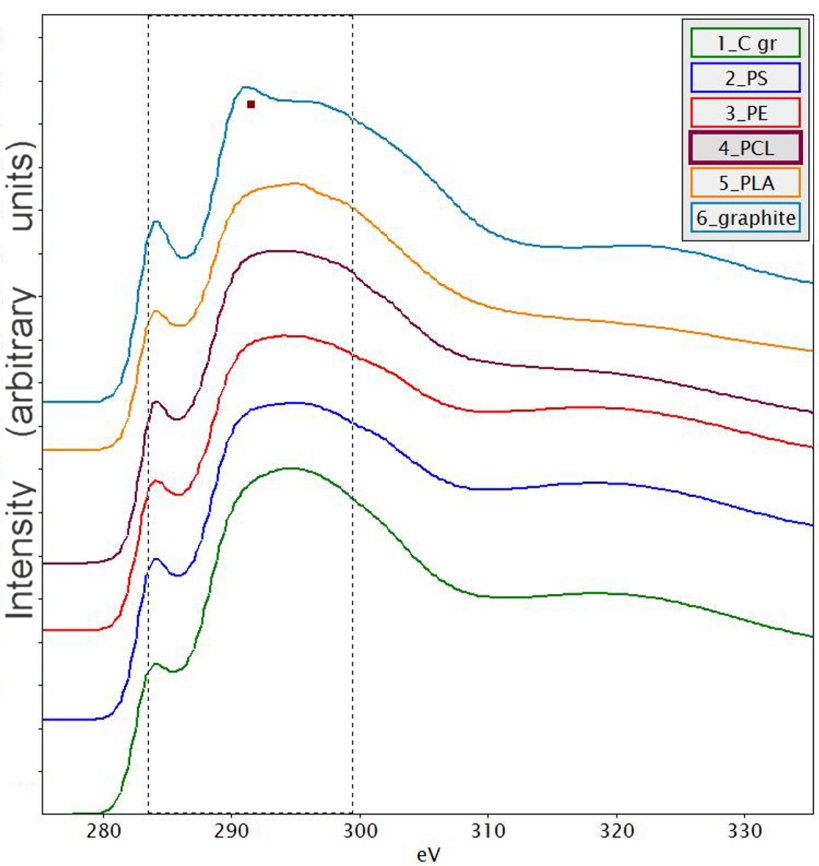
**Figure ES 4.** TEM relative thickness map with t/λ scales (A) versus AFM topographical profile (B) of polyethylene – polystyrene - graphite nanocomposite. The insert in Figure (B) represents randomly selected sections of the surface profiles. Height variation: 0-150 nm in (B).



**Figure ES 5.** The quality of the drift correction between plasmon image and carbon elemental map of polyethylene – polystyrene - silica nanocomposite. (A) EFTEM bulk plasmon image recorded using 10 eV integration window centered on 25 eV*;* **(**B**)** conventional three window carbon elemental map (C K); (C) superimposed bulk plasmon image (red) and carbon map (green) after drift correction procedure.



**Figure ES 6.** TEM relative thickness map with t/λ scales (A) versus AFM topographical profile (B) of polyethylene – polystyrene - silica nanocomposite. The insert in Figure (B) represents randomly selected sections of the surface profiles. Height variation: 0-150 nm in (B).



**Figure ES 7.** EELS spectra from carbon K ionization edge, obtained from the each component of presented organic-inorganic samples. PE - polyethylene, PS - polystyrene, PCL - Polycaprolactone, PLA - Polylactid, C gr - holey carbon grid.