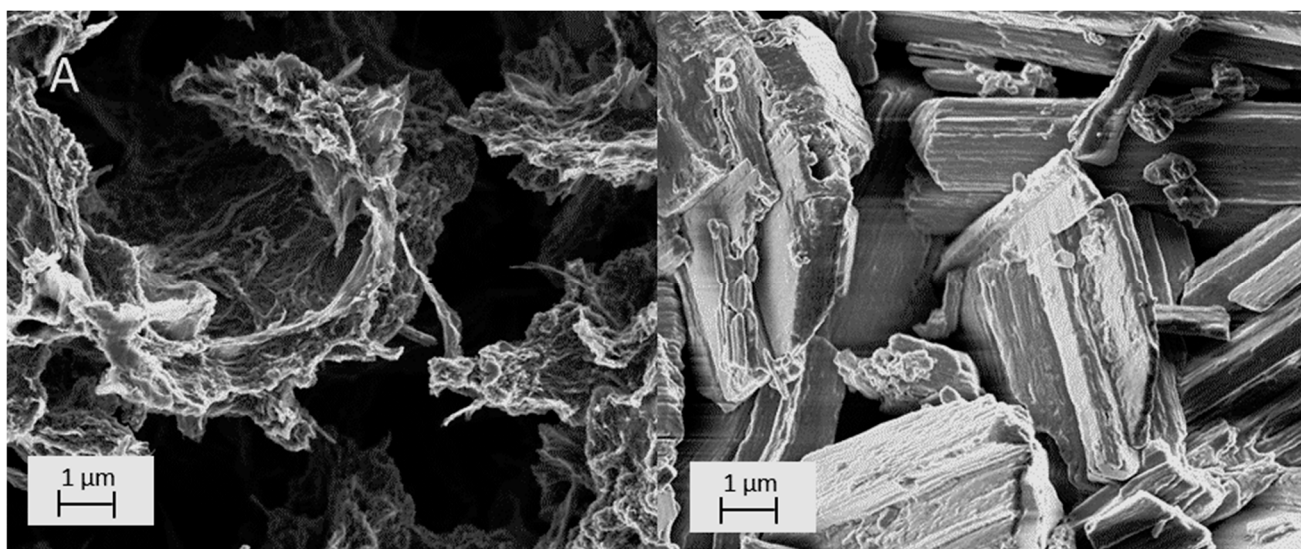


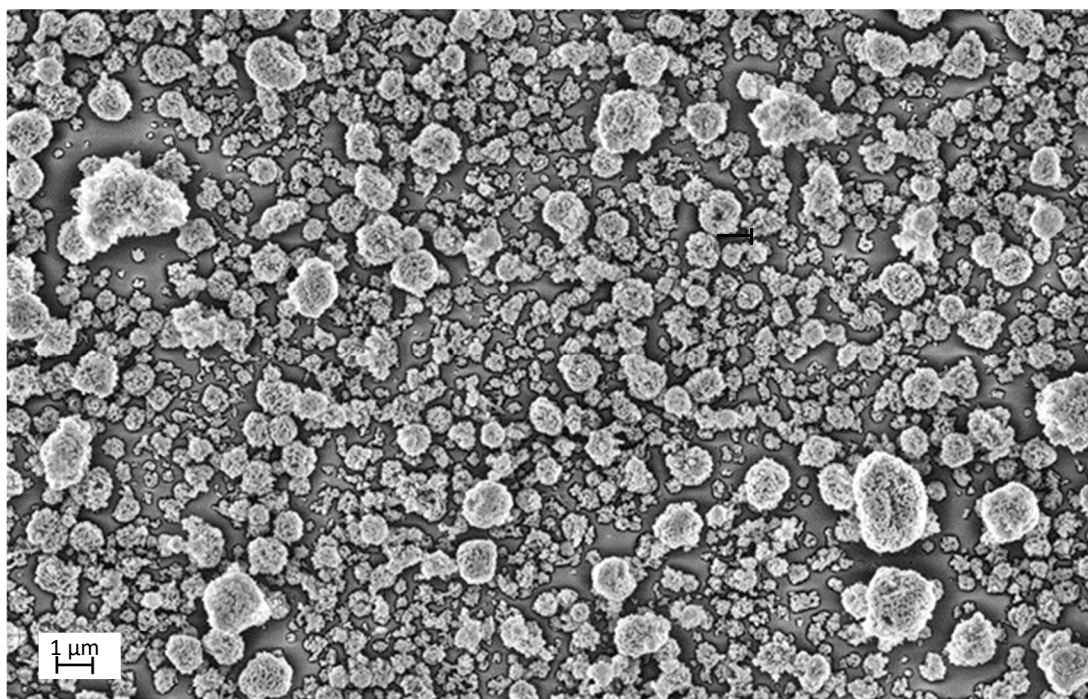
## Supporting Information

In Figure S1 SEM images are reported for rGO powder (A) and fullerene C<sub>60</sub> powder (B). In Figure S1A, rGO sheets can be observed, while in S1B, the microstructure of C<sub>60</sub> grains is displayed.



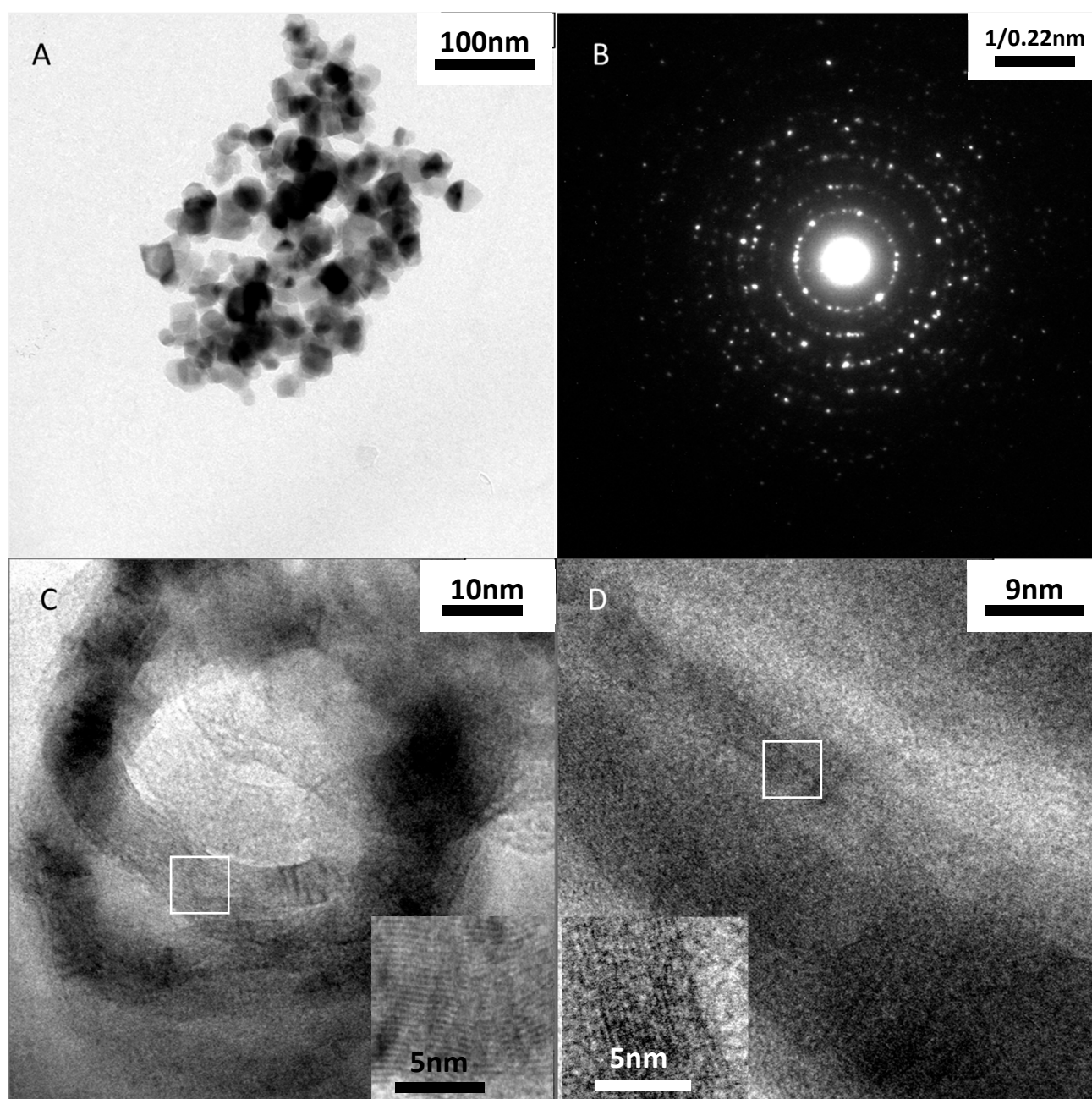
**Figure S1.** SEM images at 10kX of (A) rGO powder and (B) C<sub>60</sub> powder.

In Figure S2 the SEM image at 10kX of *ncTiO<sub>2</sub>* is reported. It is possible to distinguish the TiO<sub>2</sub> particles, of spherical shape, but none of the morphological features retrieved in the *ncTiO<sub>2</sub>\_rGO* and *ncTiO<sub>2</sub>\_C<sub>60</sub>* are observable.



**Figure S2.** SEM images of *ncTiO<sub>2</sub>* nanocomposite in siloxane matrix 10kX top.

In Figure S3 HR-TEM micrograph for TiO<sub>2</sub> nanoparticles in the nanocomposite *ncTiO<sub>2</sub>\_rGO* along with the diffraction images are reported (S3A-S3B). TiO<sub>2</sub> nanoparticles are well crystalized and from HR-TEM micrographs the atomic planes are clearly visible and present on the whole nanoparticle. The calculated TiO<sub>2</sub> phase is anatase. In HR-TEM image for rGO (S3C), the atomic planes associated to the c axis can be observed, along with (002) planes (d=0.34nm), thus confirming the chemical nature of the structures in the micrographs. Eventually, in HR-TEM image (S3D), the atomic planes associated to the crystalline structure of buckminsterfullerene can be observed, confirming the presence of C<sub>60</sub> in the nanocomposite.



**Figure S3.** (A) Bright field TEM image of TiO<sub>2</sub> nanoparticles in the nanocomposite *ncTiO<sub>2</sub>\_rGO*; (B) corresponding selected area electron diffraction (SAED) pattern, all the diffraction spots can be

associated to the  $\text{TiO}_2$  anatase phase; **(C)** High Resolution TEM micrograph of rGO sheets in the nanocomposite ncTiO<sub>2</sub>\_rGO (atomic planes are visible and univocally associated to rGO, inset); **(D)** High Resolution TEM micrograph of C<sub>60</sub> structure in the nanocomposite ncTiO<sub>2</sub>\_C<sub>60</sub> (atomic planes are visible and univocally associated to C<sub>60</sub> structure, inset).