Supporting Information

Radical Initiator Modified-Cerium Oxide Nanoparticles for Polymer Encapsulation via Grafting

From the Surface

Eric Johansson Salazar-Sandoval^{a,b}, Miren Aguirre^c, María Paulis^c, José R. Leiza^c, Mats Johansson^b, Anwar Ahniyaz^{a,*}

^aSP Technical Research Institute of Sweden, Chemistry, Materials and Surfaces, Box 5607, SE-114 86 Stockholm, Sweden

^bDepartment of Fibre and Polymer Technology, School of Chemical Science and Engineering, KTH Royal Institute of Technology, SE-100 44 Stockholm, Sweden

^cInstitute for Polymer Materials (POLYMAT) and Kimika Aplikatua saila, University of the Basque Country UPV/EHU, Joxe Mari Korta Zentroa, Tolosa Hiribidea 72, 20018 Donostia-San Sebastián, Spain



Figure S1. Zoom-out respect to Figure 4 in main text, showing a more representative image of different polymer particles, both empty and encapsulating ceria nanoparticles. (Note that ceria is shown in black). Approximately two-thirds of the total polymer particles do not encapsulate ceria nanoparticles.



Figure S1. The image on the left hand size corresponds with Figure 4b in main text. On its right, a zoom-in highlights the presence of empty polymer particles.



Figure S2. Several aggregated polymer particles, one containing spherical ceria nanoparticles and a nanorod, left image. On the right hand side, an image magnifying the area where the ceria nanoparticles are encapsulated.



Figure S3. Two polymer particles, one encapsulating spherical ceria nanoparticles, left hand side image. A magnification to better visualize the ceria nanoparticles aggregate it is shown on the right hand side image.



Figure S4. Left hand side micrograph, three entities: a polymer particle aggregate that does not contain encapsulated ceria (upper left); an aggregate of polymer particles where one polymer particle encapsulates ceria (upper right); a polymer particle of rugby ball shape (ovoid) that encapsulates ceria nanorods and nanoparticles (lower left). On the right hand side, a zoom-in enhances the contrast of the spherical ceria nanoparticles and ceria nanorods.