

## SUPPLEMENTARY MATERIALS

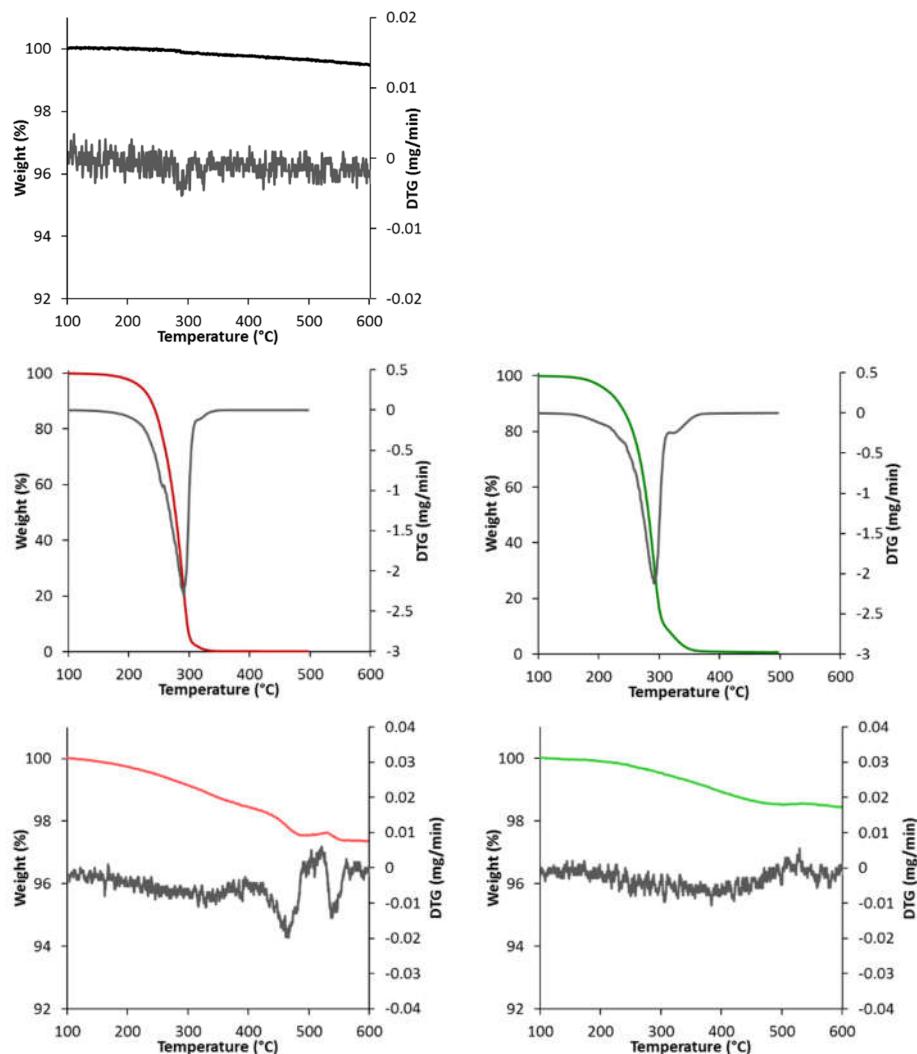
### Poly(lactic acid)/plasticizer/nano-silica ternary systems: properties evolution and effects on degradation rate

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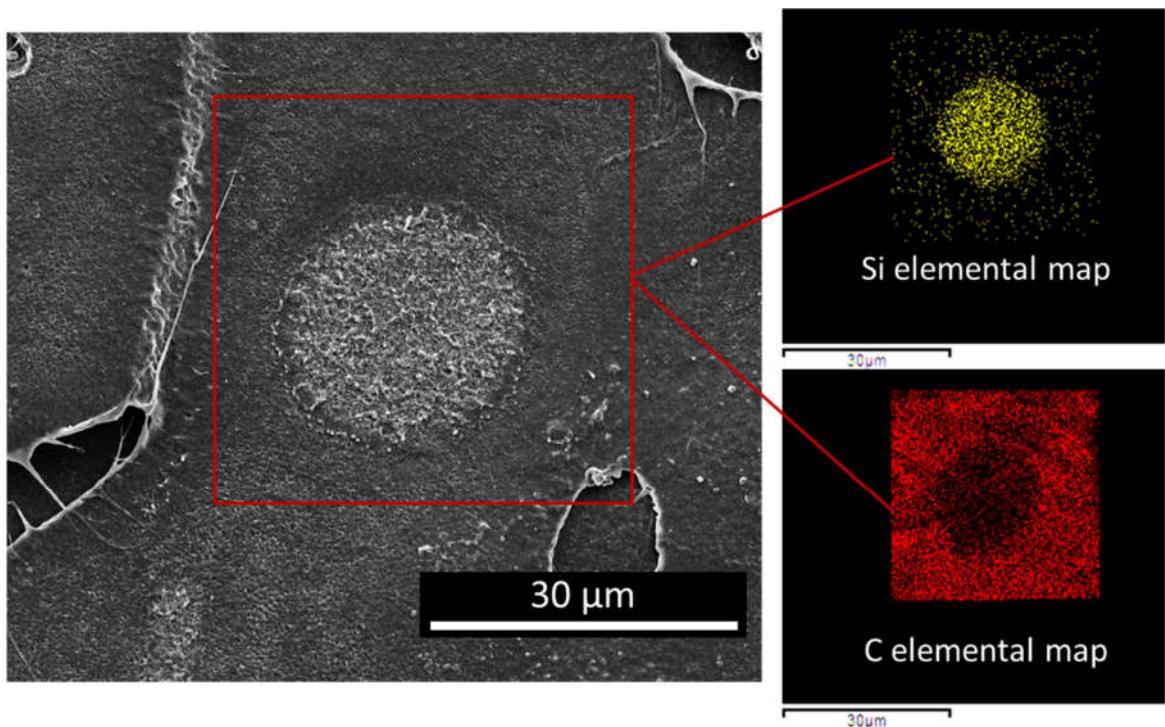
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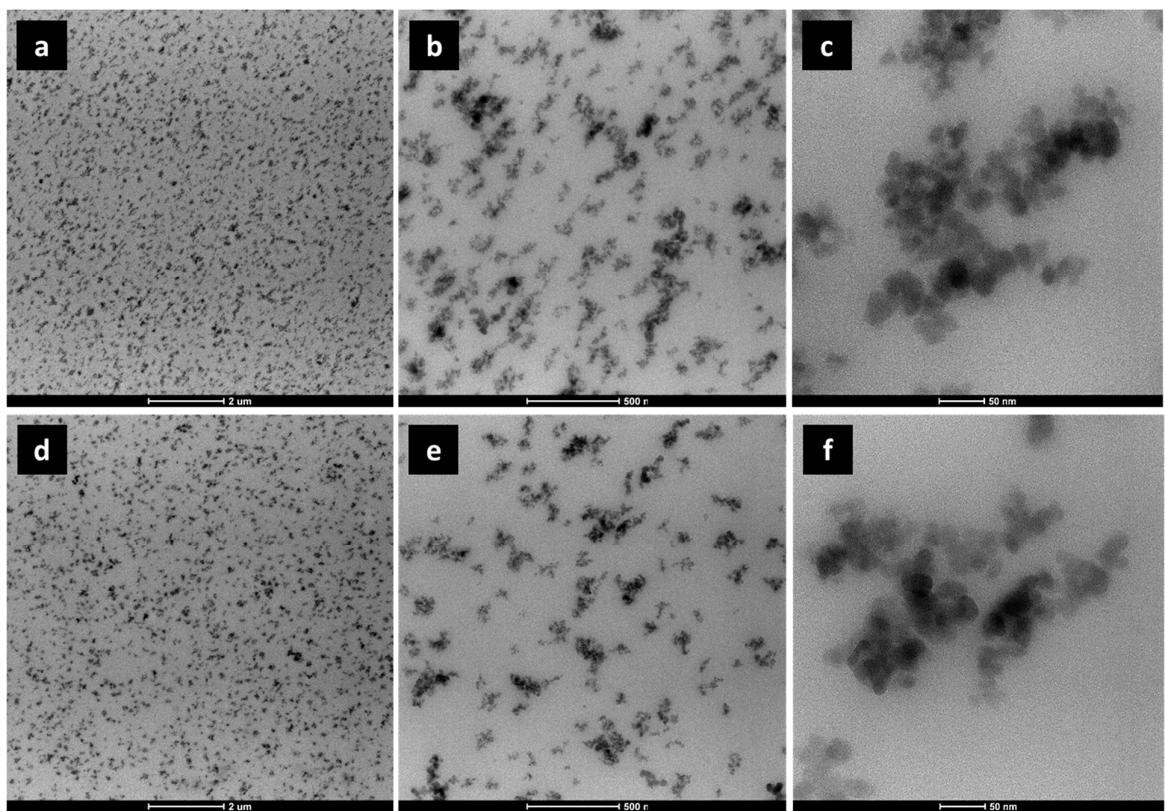
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**Figure S1.** TGA and their derivative (DTG) curves of neat SiNP, neat OLA\_OH and OLA\_COOH, compared to the curves recorded on the insoluble fraction recovered from OLA\_SiNP masterbatches after solvent extraction.



**Figure S2.** SEM micrograph of the fracture surface of a representative sample, with EDX elemental map showing the distribution of carbon and silicon atoms.



**Figure S3.** TEM micrographs at different magnification of samples S3\_OH (a, b, c) and S3\_COOH (d, e, f)