

Supplementary Material for

PLLA Nanosheets for Wound Healing: Embedding with Iron-Ion-Containing Nanoparticles

Aslan Mussin ¹, Ali A. AlJulaih ¹, Neli Mintcheva ^{1,2}, Delvin Aman ³, Satoru Iwamori ^{1,4}, Stanislav O. Gurbatov ⁵,
Abhishek K. Bhardwaj ⁶ and Sergei A. Kulinich ^{1,4,*}

¹ Department of Mechanical Engineering, Tokai University, Hiratsuka, Kanagawa 259-1292, Japan

² Department of Chemistry, University of Mining and Geology, 1700 Sofia, Bulgaria

³ Catalysis Division, Petroleum Refining Department, Egyptian Petroleum Research Institute, Cairo 11727, Egypt

⁴ Research Institute of Science and Technology, Tokai University, Hiratsuka, Kanagawa 259-1292, Japan

⁵ Institute of Automation and Control Processes, Far Eastern Branch, Russian Academy of Science, Vladivostok 690041, Russia

⁶ Department of Environmental Science, Amity University, Gwalior 474005, Madhya Pradesh, India

* Correspondence: skulinich@tokai-u.jp

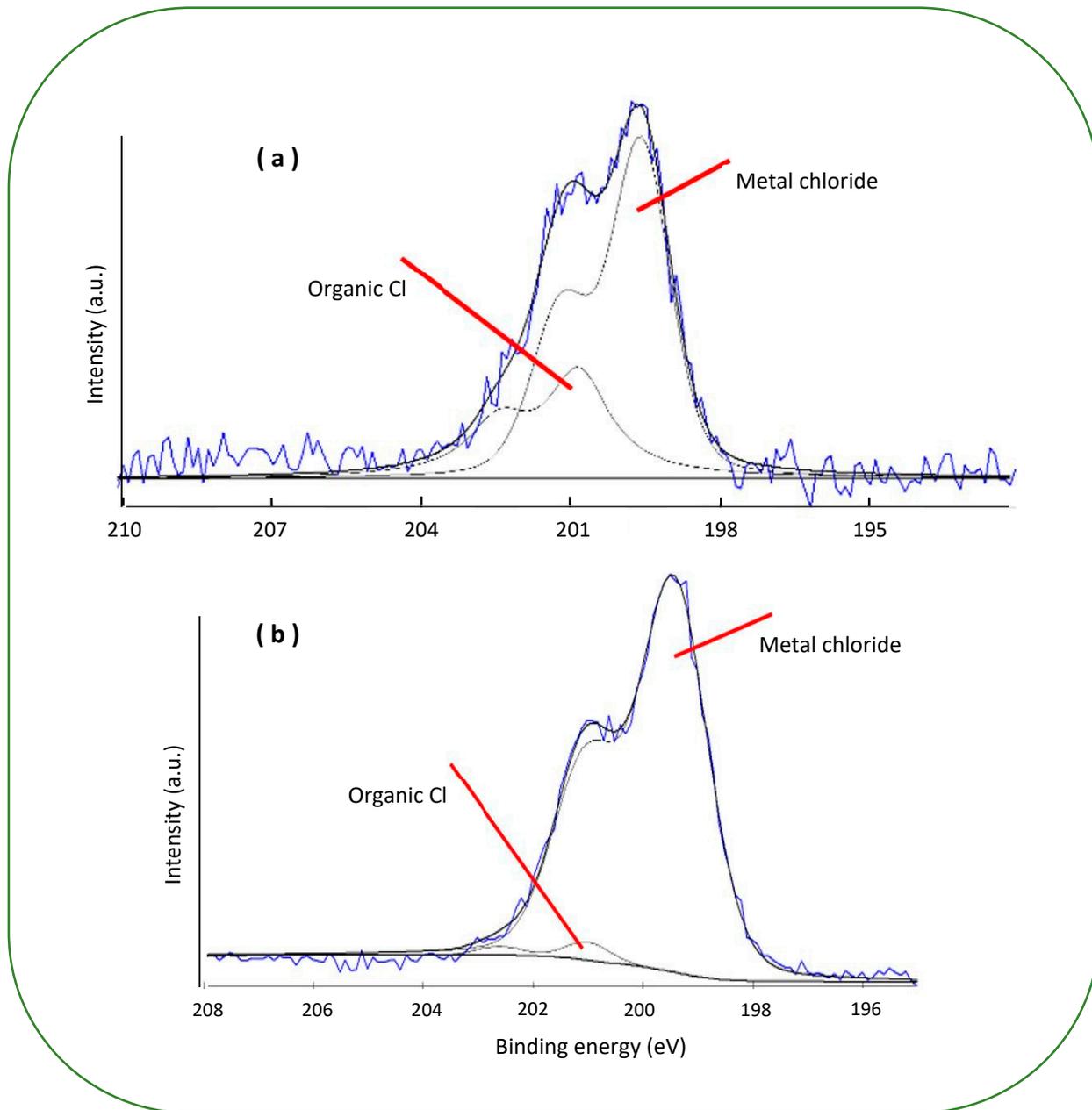


Figure S1. XPS Cl 2p spectra of Fe-containing NPs in Samples A (a) and B (b).

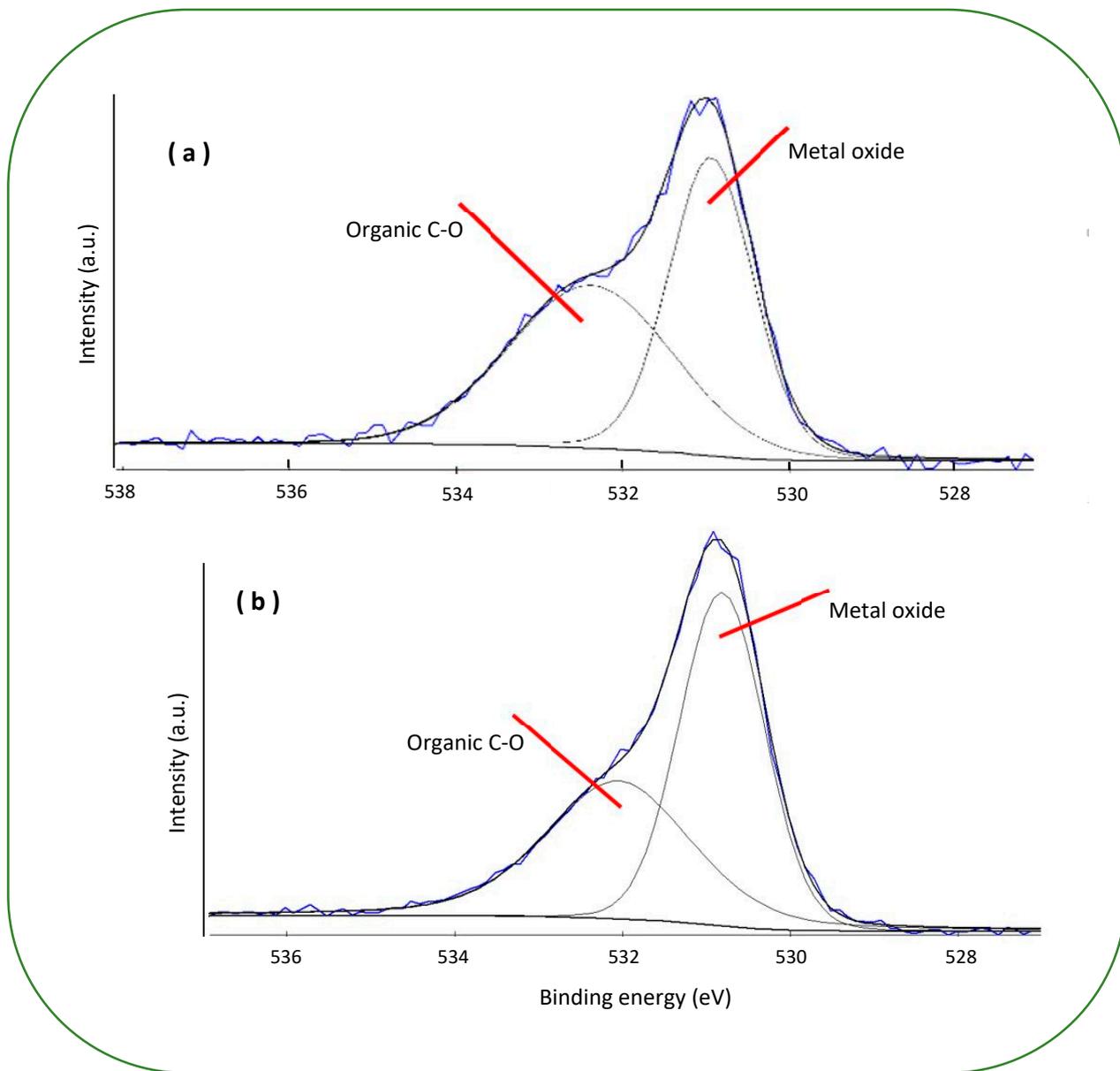


Figure S2. XPS O 1s spectra of Fe-containing NPs in Samples A (a) and B (b).

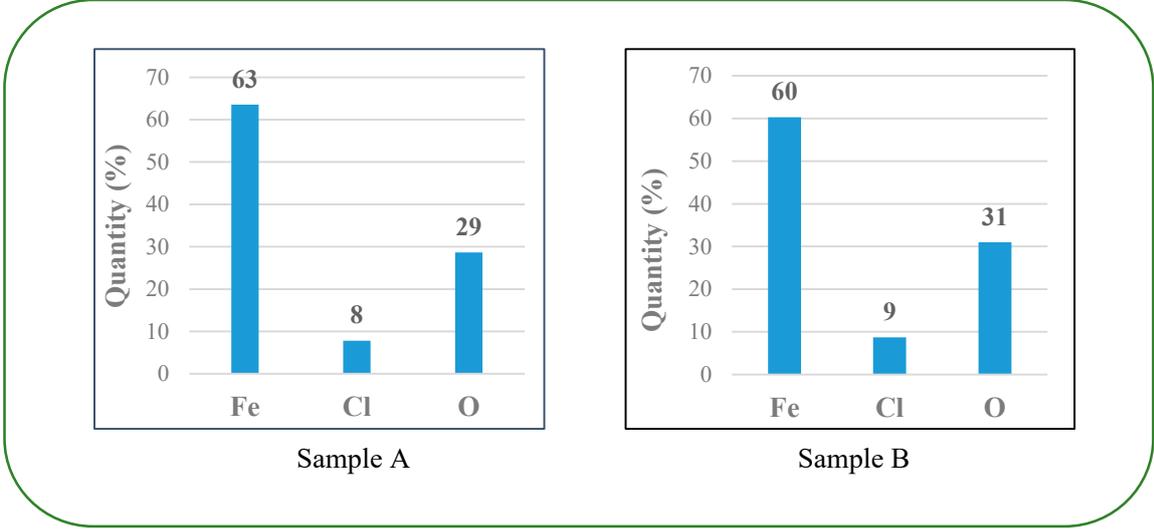


Figure S3. Elemental composition of Samples A and B prepared by LAL (as calculated based on XPS results).

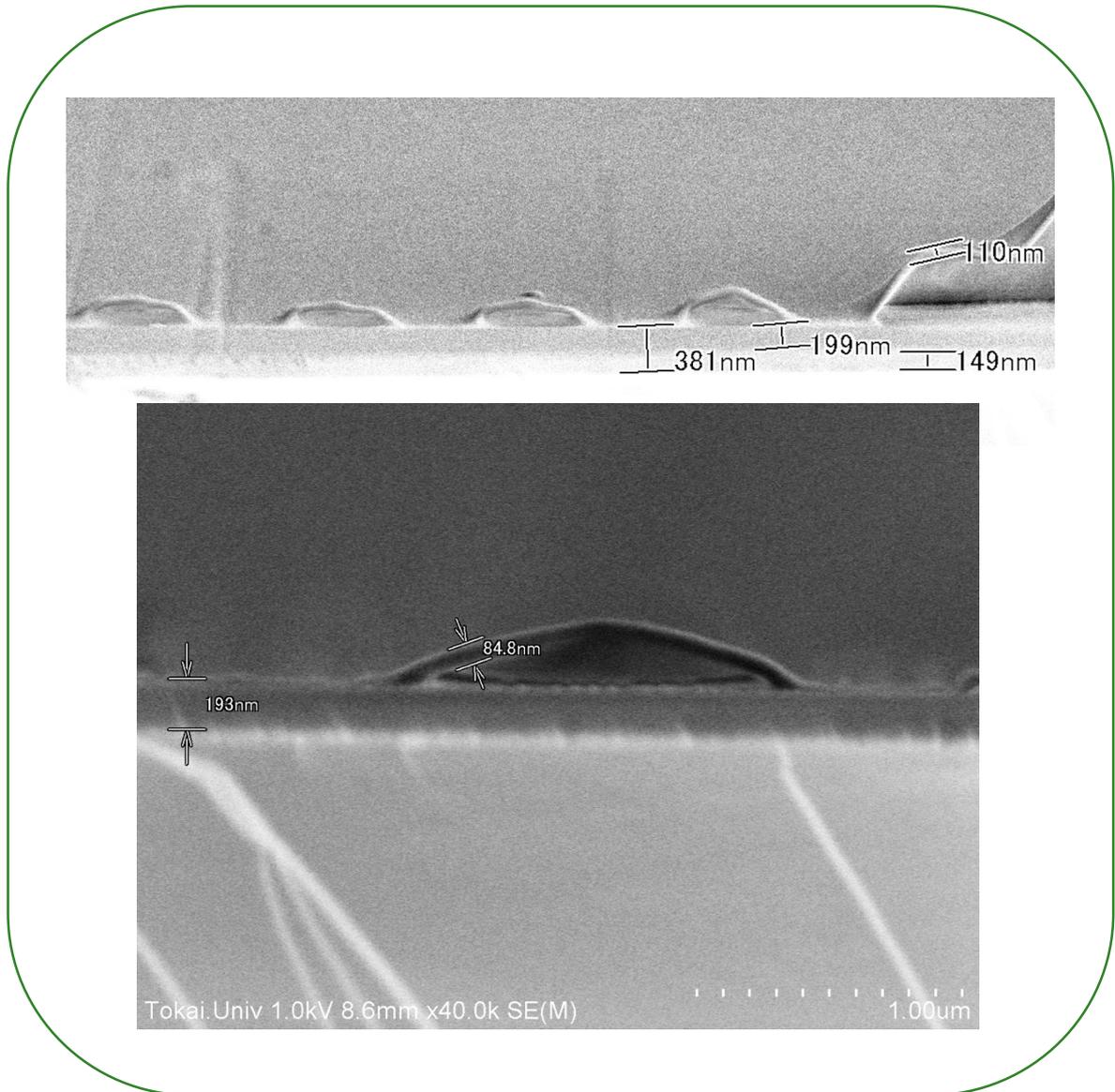


Figure S4. Cross-sectional SEM images of PLLA NSs incorporated with NSs. The nanosheets were spin-coated on Si substrate and have ~190-nm-thick PVA under-layer. In upper image: 110 nm shows cross-sectional thickness of PLLA sheet; 199 nm depicts thickness of PVA layer; 149 nm stands for strained Si wafer layer formed during breakage. In lower panel: 84.8 nm is thickness of PLLA sheet, while 193 nm depicts thickness of PVA layer plus PLLA layer on it.

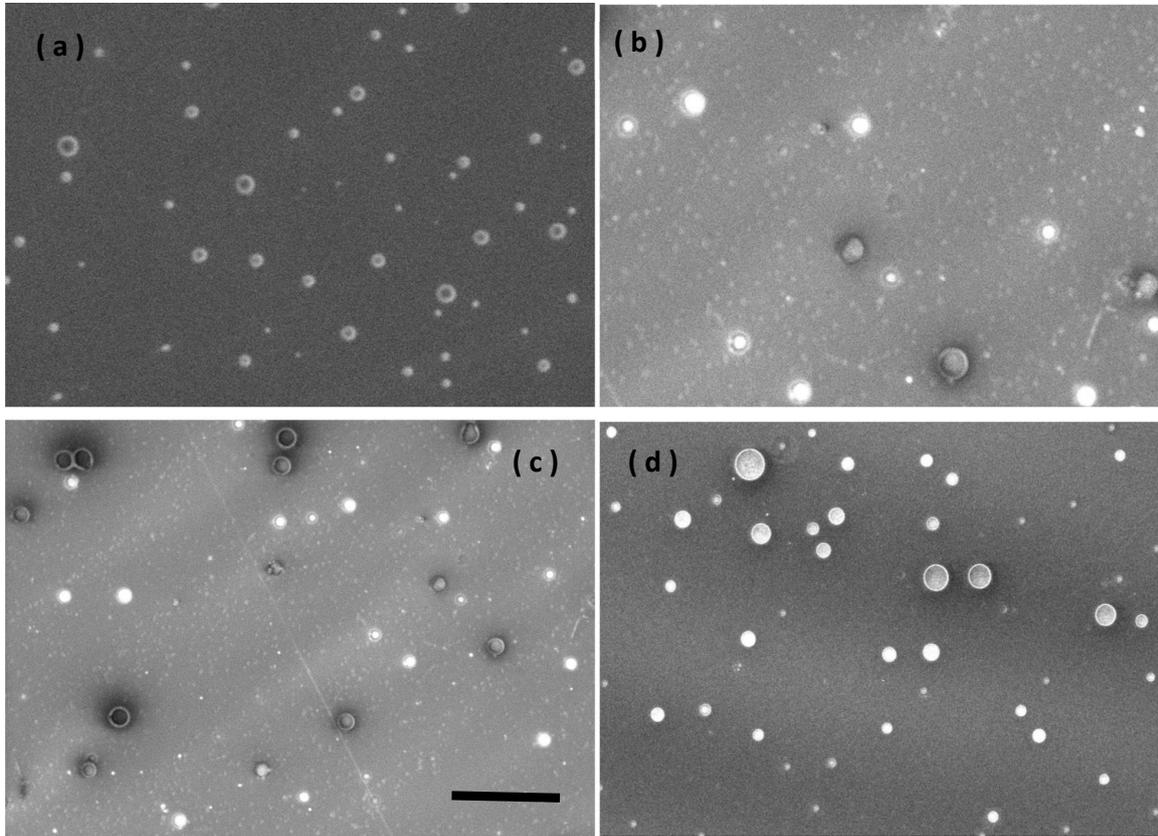


Figure S5. Surface images (SEM micrographs) of PLLA NSs loaded with Fe-containing (b,d) and with ZnO (a,c) NPs. Scale bar indicates 1 μm .