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Supplementary Material

Improved Bacteriostatic and Anticorrosion Effects of Polycaprolactone/Chitosan Coated Magnesium via Incorporation of Zinc Oxide

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1. Casting Procedure

For preparation of as-cast Mg substrates, pure Mg ingot (99.9% Mg) was used as starting materials. The materials were melted under argon gas in a mild steel crucible at a temperature of 740 °C for 45 min holding time. Following melting, the molten metal was poured into a pre-heated mild steel mold to attain ingots. The surface morphology of the uncoated specimens, as cast magnesium substrate was observed using optical microscope is shown in Figure S1. It shows the presence of grain boundaries.

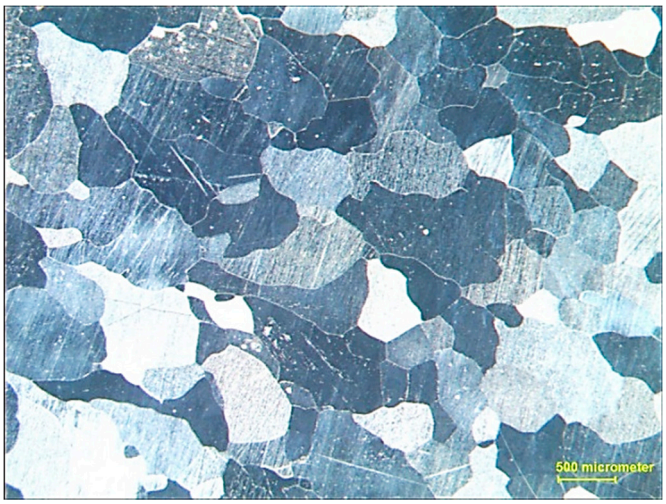

Figure S1. Optical Micrograph of as-cast Mg.

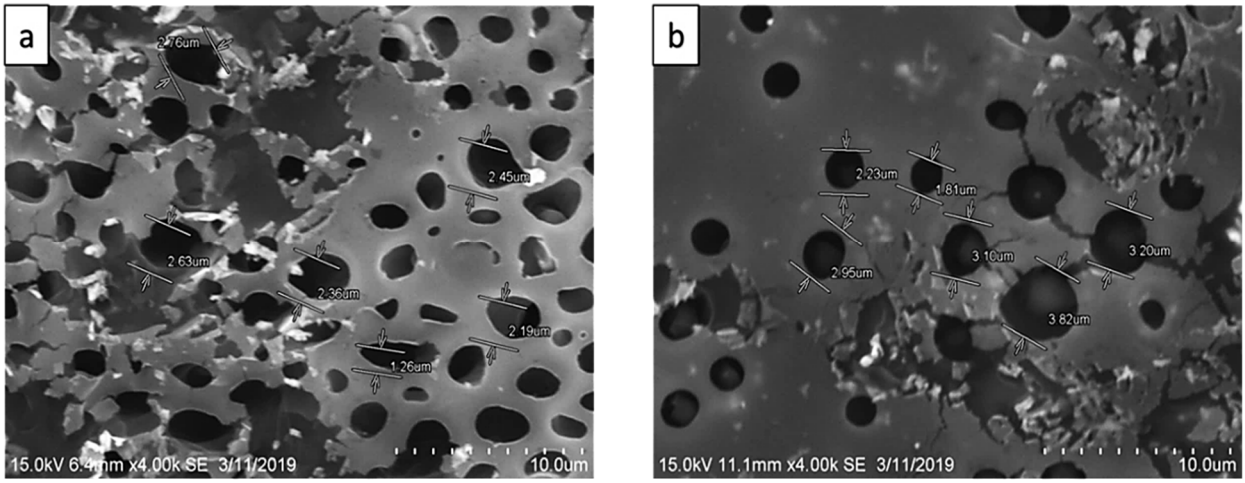

Figure S2. SEM images of (**a**) Mg coated with PCL/CS, (**b**) Mg coated with PCL/CS/ZnO.

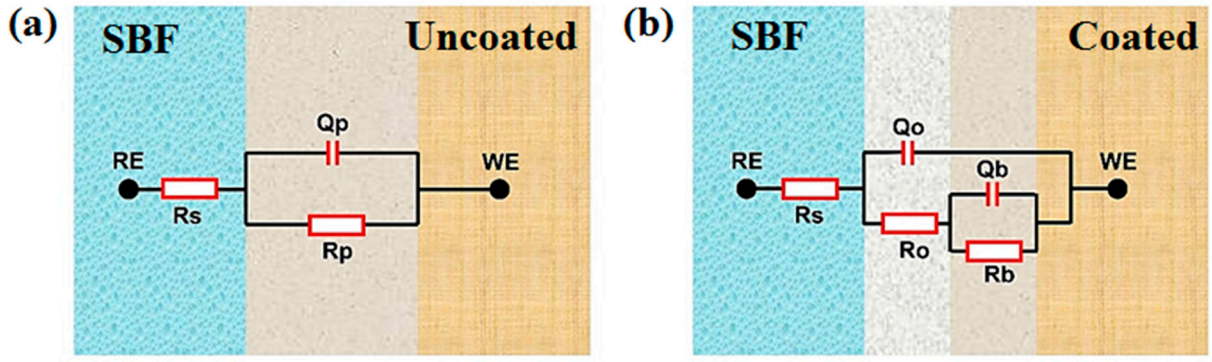

Figure S3. Equivalent circuits used to fit the EIS diagrams for the (**a**) uncoated and (**b**) PCL/CS/ZnO coated samples in SBF solution in ambient conditions.

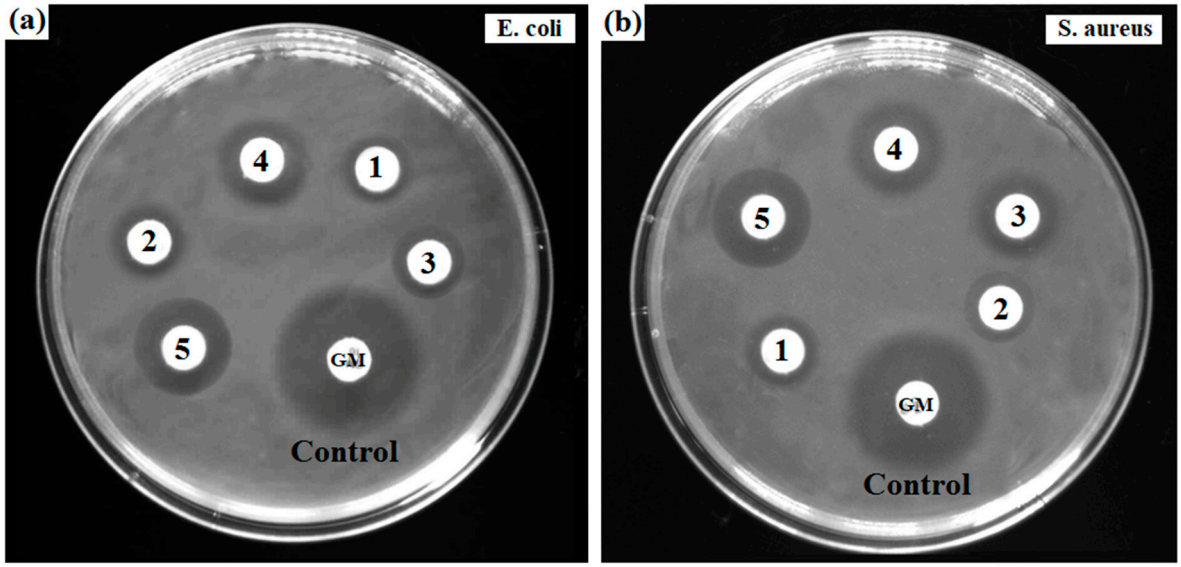

Figure S4. Images of inhibition zones of the uncoated, PCL/CS, and PCL/CS/ZnO coated samples after 24 h against (**a**) Gram-negative (*E. coli*) and (**b**) Gram-positive (*S. aureus*). Note: (1): uncoated; (2): PCL/CS; (3): PCL/CS/2ZnO; (4): PCL/CS/4ZnO; (5): PCL/CS/6ZnO and (Control): Gentamicin.