Supplementary materials for

Enhanced osteogenic and selective antibacterial activities on micro-/nano-structured carbon fiber reinforced polyetheretherketone

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Supplemental Content:

Captions and descriptions of the supplemental figures.

**Supplementary Fig. S1.** SEM morphology of the *MRSA* bacterial cells on the CFRPEEK (a-1 and a-2) and Zn-O (b-1 and b-2) samples after culturing for 24 h.
**Supplementary Fig. S2.** SEM morphology of the surface (a) and cross-sectional (b) morphology of single Zn implanted CFRPEEK sample.

**Supplementary Fig. S3.** Zn concentrations of the PBS buffer solution with immersion of the Zn-O and Zn-O-HCl samples for 4 weeks.
Supplementary Fig. S4. Re-cultivated bacterial colonies on agar: biofilm-positive *S. epidermidis* (ATCC 35984) and biofilm-negative *S. epidermidis* (ATCC 12228) colonies are previously dissociated from CFRPEEK, Zn-O and Zn-O-HCl samples. The *S. epidermidis* (ATCC 35984) and *S. epidermidis* (ATCC 12228) bacteria concentration seeded on the samples is $10^7$ cfu/mL.