

Supplementary Information for
Cryomilling for the fabrication of doxorubicin-containing-
silica nanoparticle/polycaprolactone nanocomposite film

Yu Gao^{a,b,#}, Jing Lim^{a,#}, Yiyuan Han^a, Lifeng, Wang^a, Mark Seow Khoon Chong^a,
Swee-Hin Teoh^a, Chenjie Xu^{a,c,*}

^a School of Chemical and Biomedical Engineering, Nanyang Technological University, Singapore

^b Key Laboratory for Organic Electronics & Information Displays (KLOEID), Institute of Advanced Materials (IAM), National Synergistic Innovation Center for Advanced Materials (SICAM), Nanjing University of Posts & Telecommunications, 9 Wenyuan Road, Nanjing 210023, China

^c NTU-Northwestern Institute of Nanomedicine, Nanyang Technological University, Singapore

[#] Contribute equally to this work.

*Corresponding to cjxu@ntu.edu.sg

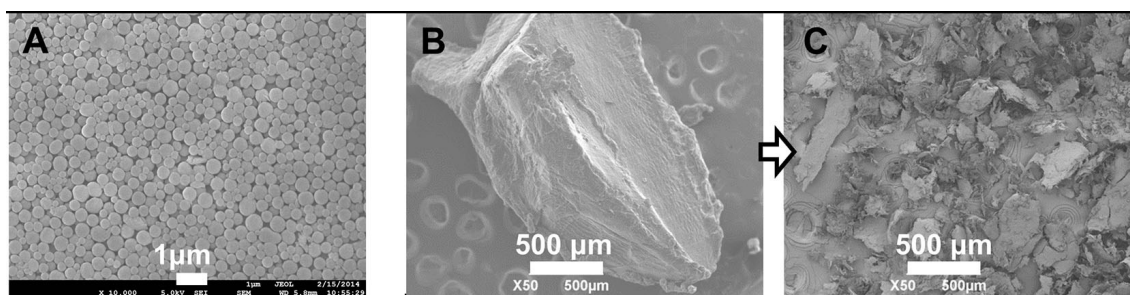


Figure S1. Representative scanning electron microscope image of (A) Mesoporous silica nanoparticles. PCL pellets (B) before and (C) after cryomilling.

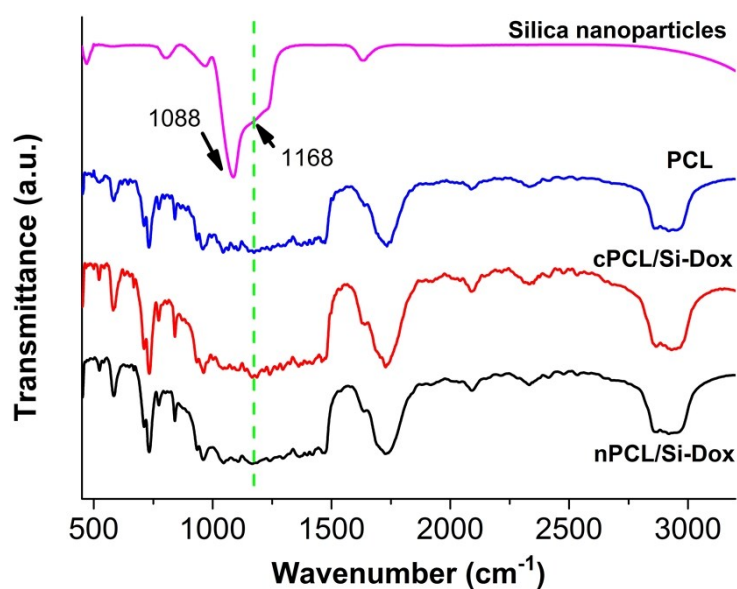


Figure S2. FTIR spectrum of SiO₂ nanoparticles, PCL, cPCL/Si-Dox (cryomilled), and nPCL/Si-Dox film (non-cryomilled). The IR bands at 1088 and 1168 cm⁻¹ are assigned to the TO and LO modes of Si-O-Si asymmetric stretching vibrations.

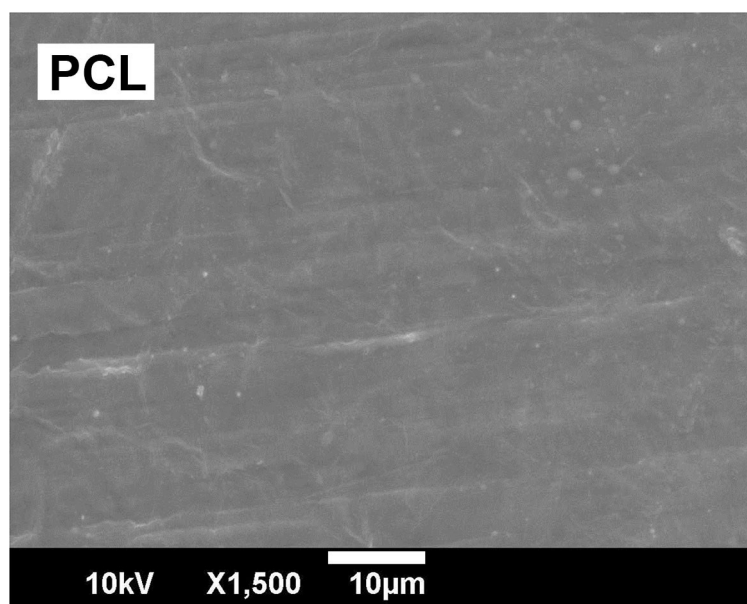


Figure S3. Representative scanning electron microscope image of PCL film fabricated by heat pressing of cryomilled PCL fine powder.

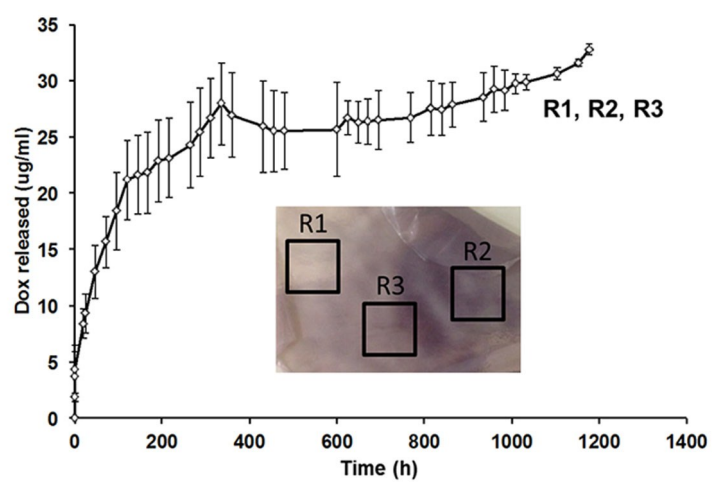


Figure S4. Cumulative release profile of doxorubicin from cPCL/Si-Dox film in 50 days. Release profile of cPCL/Si-Dox films averaged over three random areas on the film (R1, R2, R3).