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**Supporting information for article:**

# Three-dimensional fast elemental mapping by soft X-ray dual-energy focal stacks imaging

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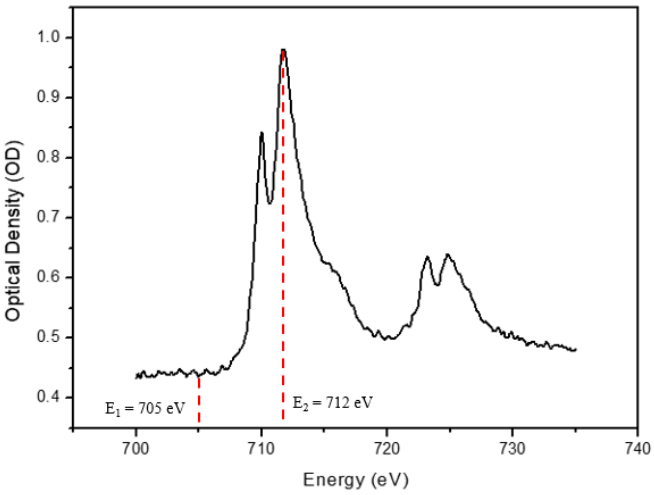


**Figure S1** Figure S1 Chemical species of Fe(acac)3 measured by line scan in the PS@Fe(acac)3 samples.

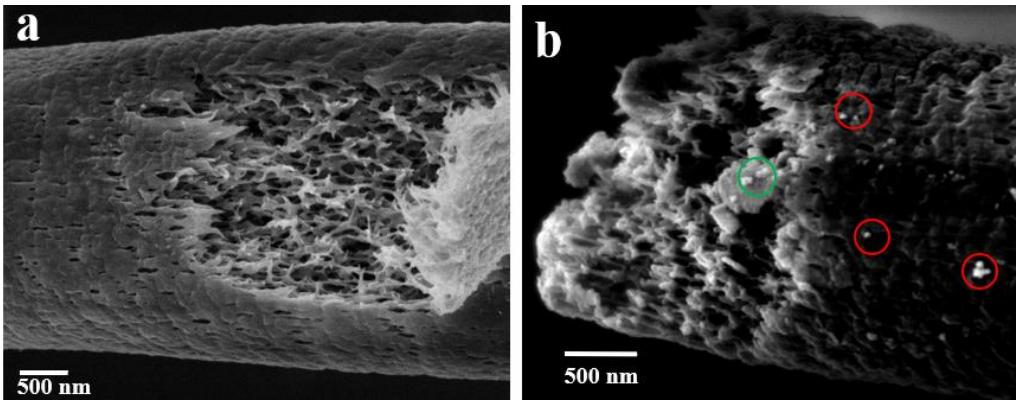


**Figure S2** Figure S2 (a) SEM image of pure PS fibers. (b) Cross-sectional SEM image of the PS@Fe(acac)3 composite nanofibers. As the white bulks shown in red circles, the Fe(acac)3 particles are randomly located on fiber surface and some are distributed in the internal fiber as the cross-section shown (green circle).

**S1. Radiation Dose estimation for the composite nanofibers.**

The radiation dose was calculated as follows:

$$Dose = (I_0 \Delta t)\frac{\mu}{\rho} E \quad (1)$$

where $I_0\Delta t$ is the incident X-ray photons per unit area in the image sequence, μ/ρ is the mass absorption coefficient, E is the incident energy.

In the experiment, $I_0\Delta t$ was calculated about $4.4\times10^9$ photons/μm$^2$, the assuming mass absorption coefficient was 14.4 cm$^2$/g for Fe at 712 eV, so the resulting dose was $7.2\times10^5$ Gy.