

Supplementary Material

Preparation and Characterisation of Ultra-Fast Dissolving Oral Mats for Treating and Preventing Iodine Deficiency in the Pediatric Population

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Figure 1 shows the presence of nanocrystals of KIO₃ in the nanofibers with loadings from 3-43% (w/w). With increasing the KIO₃ loading, the crystal size and density increase. As seen in Figure 1b, more nanocrystals can be seen in the fibers with 13% KIO₃ than the fibers with 3% KIO₃ loading. With 43% KIO₃ loading (Figure 1c), the sizes of the nanocrystals approach the diameter of the fibers.

Table S1 summarises the assignments of all detectable ATR-FTIR peaks of PEO as received, electrospun PEO placebo fibers, PEO-KIO₃ fibers with different loadings. No significant change of PEO related peaks can be observed after the materials were processed by electrospinning. Table S2 compares the KIO₃ related peaks before and after electrospinning. Again no significant change is observed, indicating good compatibility of PEO and KIO₃.

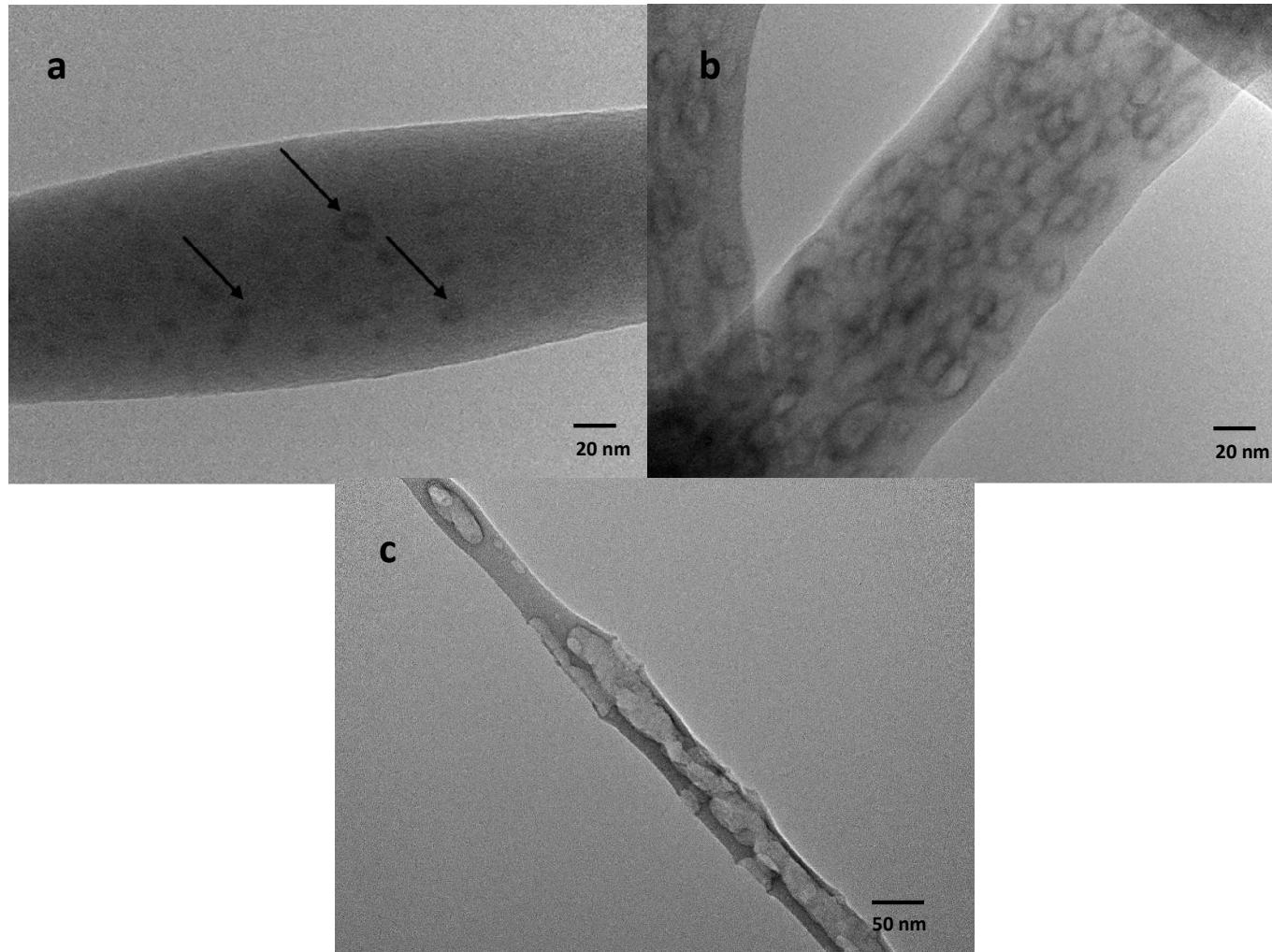


Figure S1. TEM images of the nanofibers with different KIO_3 loading: a) 3 % of KIO_3 (KIO_3 crystals - black arrows); b) 13 % of KIO_3 , c) 43% of KIO_3 .

Table S1. Detailed assignments of all detectable ATR-FTIR peaks of the PEO, electrospun PEO and KIO₃ loaded PEO fibers.

PEO reported by Yoshihara. ^[1]	PEO alone	PEO Electrospun	PEO/KIO ₃ 96/4%	PEO/KIO ₃ 79/21%	PEO/KIO ₃ 57/43%	Assignment
1466 ⊥ m	1466.47	1466.68	1466.76	1466.85	1466.85	CH ₂ bending
1453 II m	1454.25	1454.91	1454.91	1455.08	1455.06	CH ₂ bending
1358 ⊥ m	1359.44	1359.59	1359.64	1359.71	1359.73	CH ₂ wagging CC stretching (H)
1342 II s	1341.42	1341.68	1341.64	1341.67	1341.66	CH ₂ wagging (T)
1278 ⊥ m	1278.97	1279.38	1279.66	1279.75	1279.79	CH ₂ twisting (H)
1240 II s	1240.86	1241.38	1241.34	1241.38	1241.40	CH ₂ twisting (T)
1147 ⊥ s	1144.53	1145.12	1147.39	1147.57	1147.92	CC stretching COC stretching
1103 II vs	1094.65	1097.08	1098.25	1098.62	1098.72	COC stretching
1060 ⊥ m	1059.14	1060.15	1060.64	1060.75	1060.78	CH ₂ rocking (H) COC stretching
958 II s	960.76	961.53	961.61	961.74	961.78	CH ₂ rocking (T)
947 ⊥ m	946.53	946.97	947.66	947.72	947.91	CH ₂ rocking (H)

844 ± s	841.09	841.48	841.91	842.10	842.30	CH ₂ rocking (H)
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Table S2. Detailed assignments of all detectable ATR-FTIR peaks of the KIO₃ and KIO₃ loaded fibers.

KIO ₃ reported by Nakamoto. ^[2]	KIO ₃ reported by Miller and Wilkins. ^[3]	PEO/KIO ₃ 96 %/4 %	PEO/KIO ₃ 79 %/21 %	PEO/KIO ₃ 57 %/43 %
796 (A₁)	800 (w)	799.43	798.35	798.27
745 (E)	755 (s)	763.57	760.87	756.43
	738 (vs)			738.88

Reference

- [1] T. Yoshihara, H. Tadokoro, S. Murahashi, J. Chem. Phys. **1964**, *41*, 2902-2911.
- [2] K. Nakamoto, *Infrared and Raman spectra of inorganic and coordination compounds*, Wiley Online Library, USA **1986**, pp. 115-121.
- [3] F. A. Miller, C. H. Wilkins, Anal. Chem. **1952**, *24*, 1253-1294.