Supplementary information

Electrospun Nanofibers with Surface Oriented Lamellar Pattern and Potential Applications

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Electrospinning process details:

The electrospinning duration was 2 to 4 hours. The working distance was 14 cm, while the applied voltage was -3kV on the collector and 18-22 kV on the needle. The relative humidity inside the electrospinning enclosure was fixed in the range of 30-40%, using flowing nitrogen through a bubbler. At acetylacetonate/PVP weight ratio larger than 1.0, the needle voltage was 18 kV to ensure the nanofibers' drying before reaching the collector.
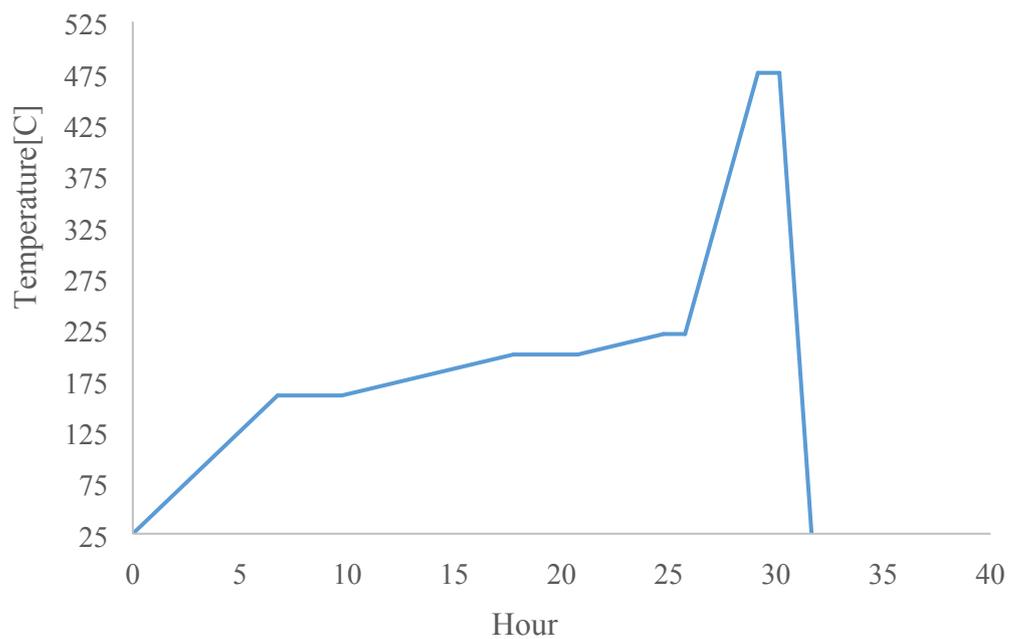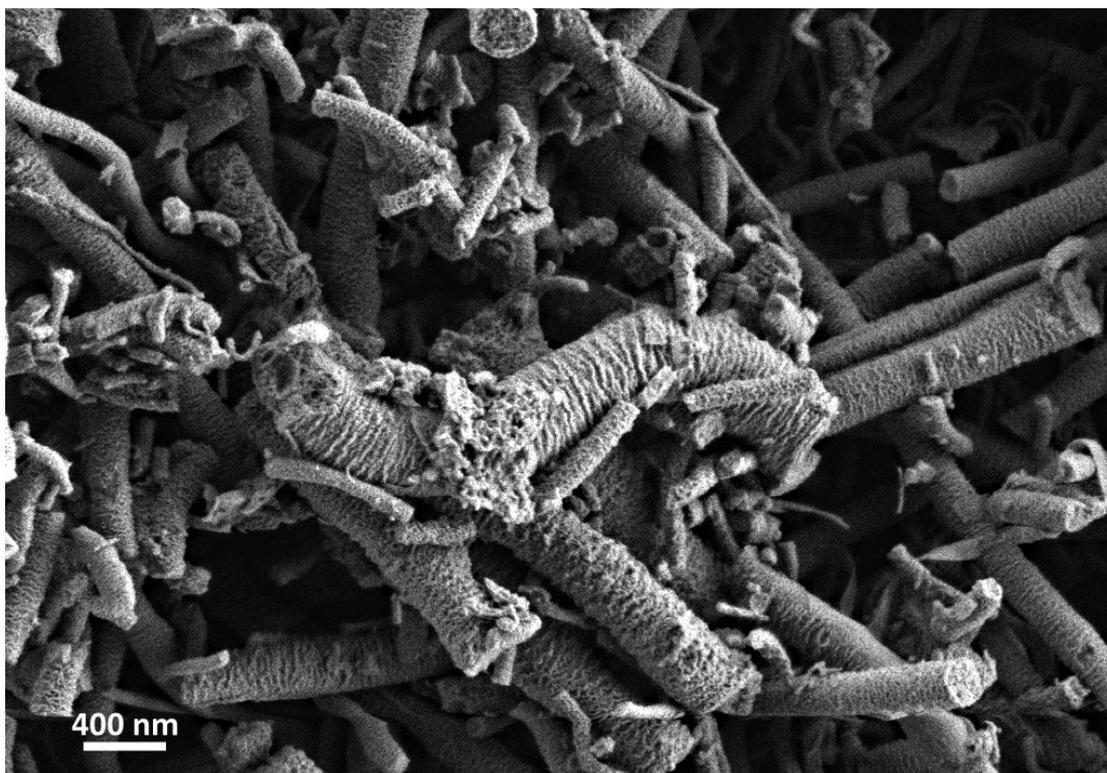
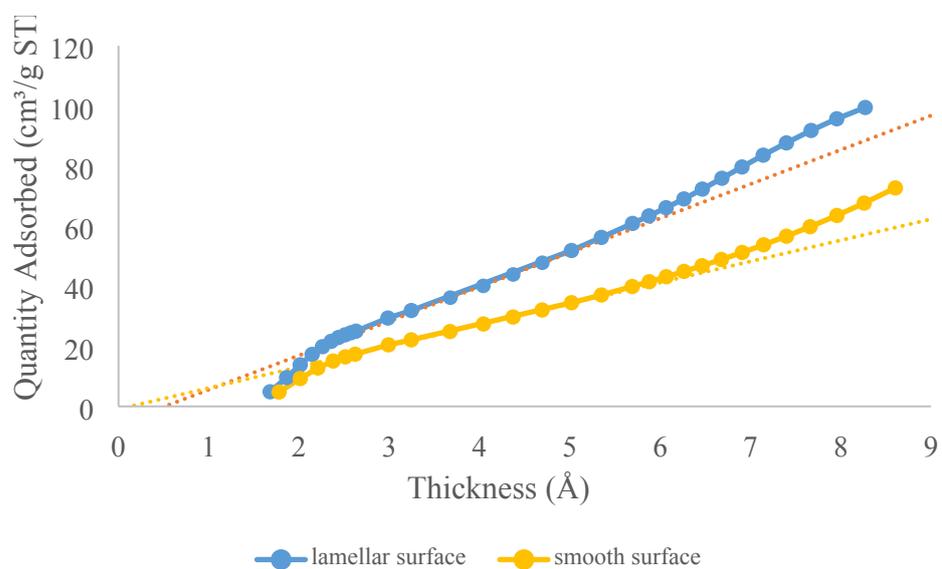**Figure S1.** Thermal treatment heating profile.
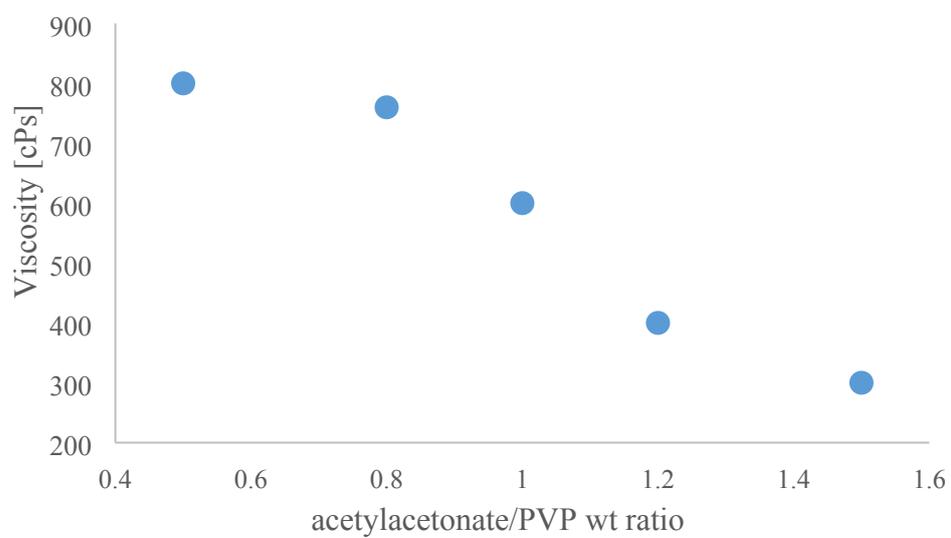
Figure S2. Precursor solutions' viscosity as a function of acac/PVP weight ratio
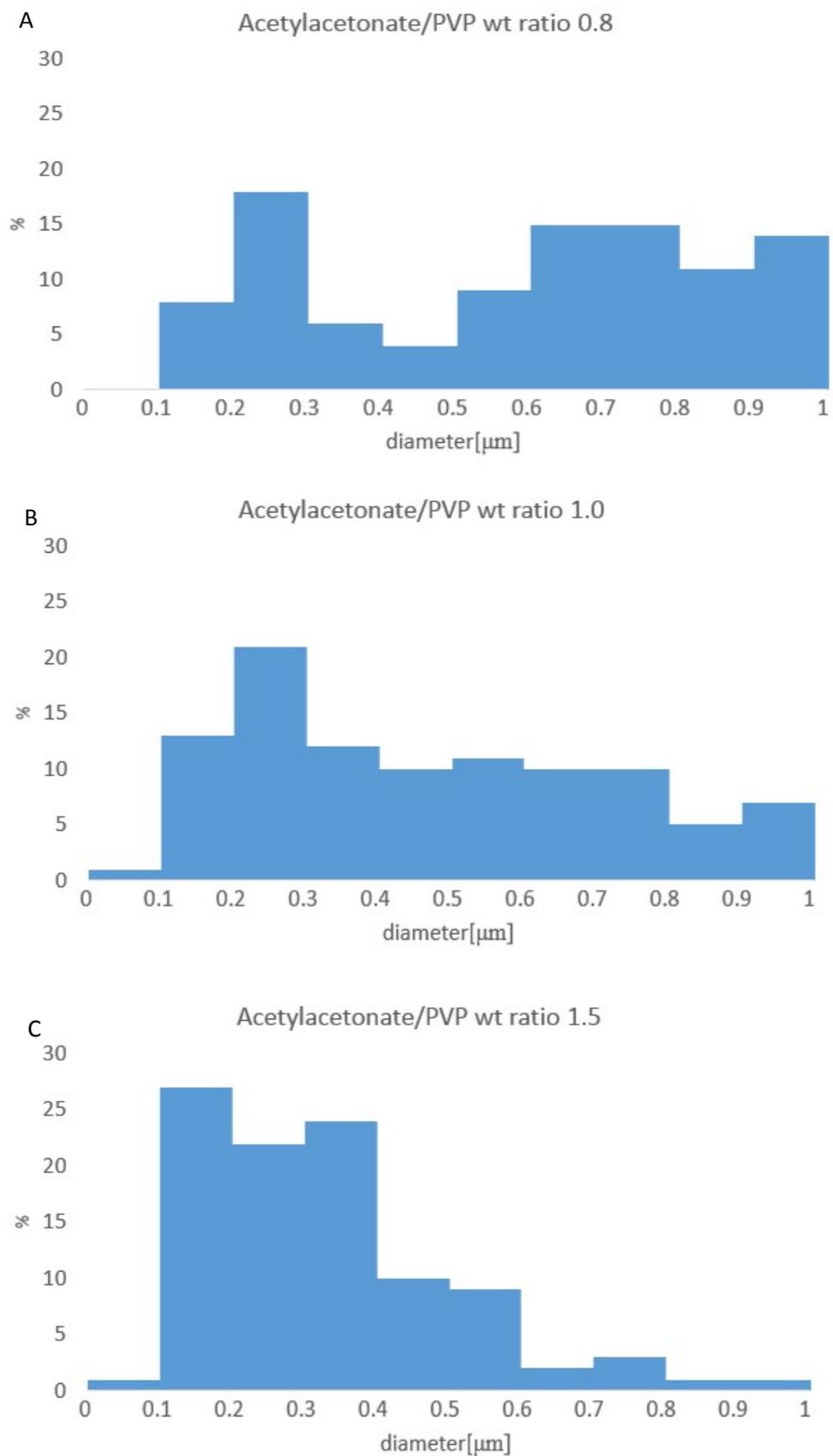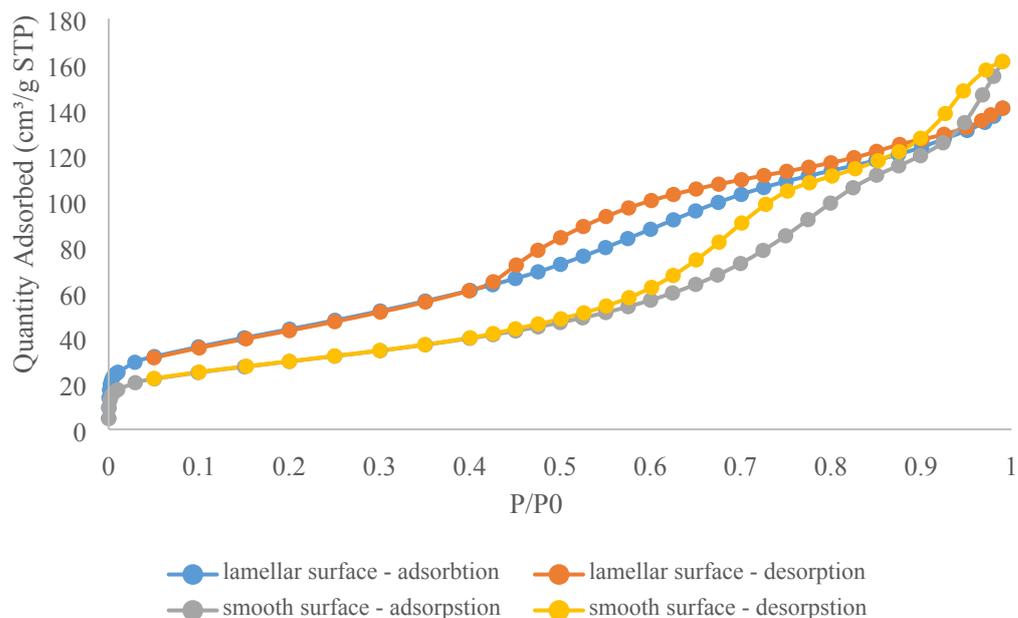
Figure S3. Nanofibers' diameters distribution before thermal treatment at different acac/PVP

ratio: a) 0.8. b) 1.0 c) 1.5

Figure S4. Nanofibers after thermal treatment in inert atmosphere up to 220ºC and in air from 220ºC to 475ºC.

Figure S5. t-plot comparison between lamellar and smooth surface Fe-Al-O nanofibers.

Figure S6. Isotherm linear plot of smooth and lamellar surface nanofibers

Table S1. Precursor composition for electrospun nanofiber (all values are in % wt.)

Material	Al-O	Ni-O	Fe-O	Ti-Al-O	Ni-Al-O	Ti-Fe-O
PVP	9	16	14	9	16	8
$M_1(acac)_x$	14	24	20	0	18	0
$M_2(acac)_x$	0	0	0	4	6	4
TTIP	0	0	0	9	0	9
AcAc	0	0	0	6	0	6
Acetic acid	55	0	47	52	0	52
Ethanol	22	0	19	20	0	21
DMF	0	60	0	0	60	0

$M_y(acac)_x$- metal acetylacetonate complex

TTIP- Titanium isopropoxide

AcAc- Acetyl acetate

DMF- Dimethylformamide