

Electronic Supplementary Information for the Manuscript:

Investigation on [OH⁻]-responsive System Subjects to Construction of One-dimensional Hydroxyapatite *via* Solvothermal Method

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†Electronic supplementary information available: A table (Table. S1) of comparison of different synthesis methods of 1D HA crystals. XRD patterns (Fig. S1) and FESEM photographs (Fig. S2) of HA synthesized with different concentrations of NaOH. Digital photographs (Fig. S3) of the highly flexible paper prepared by the sample NF4.

Table S1. Comparison of different synthesis methods of 1D HA crystals.

Synthesis Method	ipH	additive	Phases	Morphology of HA in literature	Approx. length or diameter	Ref.
hydrothermal method	~3	citric acid, urea	HA	whisker, plate, prism, needles	10-30 μm	1, 2
	4	trisodium citrate, <i>NO</i>	HA, DCPA, DCPD, OCP	fibrous microparticles, microsheet	0.9 μm , 7-8 μm	3, 4
	~5	trisodium citrate, <i>NO</i>	HA	whisker, microflower, microsphere, nano-/microeire	30-50 μm , ~10 μm , 0.5-5 μm	4-7
	6	<i>NO</i>	HA, DCPA, OCP	whisker, plate-like nanoparticle, nanorod	20 μm , ~80nm,	3, 8
	~7	trisodium citrate, Ca-EDTA, <i>NO</i>	HA	nanorod, whisker	100-300 nm, 0.7-1 μm , 5-10 μm	4, 6, 9, 10
	~8	<i>NO</i>	HA	nano-/microwire	0.5-5 μm	6
	9	CTAB, trisodium citrate, Ca-EDTA, <i>NO</i>	HA	fiber, whisker, nanorod, spherical nanoparticle	~2 μm , ~60 nm, ~12 μm , ~200 nm	3, 4, 7, 8, 10-12
	~10	Na ₂ EDTA, dodecylamine, P123	HA	nanorod, plate-like	~15 μm , ~70 nm, 120-600 nm	13-15
	11	Na ₂ EDTA, P123	HA	dumbbell	~15 μm , 120-600 nm	13, 15
	~12	Na ₂ EDTA, <i>NO</i>	HA	microsphere, nanobelt, nanorod	~10.7 μm , ~1.5 μm , 150-300 μm	13, 16, 17
	13	CTAB	HA, β -TCP	spheroidal particle	~27 nm	11
	~14	<i>NO</i>	HA, Ca(OH) ₂	particle, nano-/microwires	150 nm, 0.5-5 μm	6, 8
	homogeneous precipitation method	6-10	Ca-EDTA	HA	fiber	10-20 μm
hydrothermal homogeneous precipitation method	~3	urea, acetamide, propanmide	HA	whisker, plate- or branch-like particle	60-300 μm ,	19-21
precipitation method	4.1-4.7	<i>NO</i>	HA, DCPA	whisker	~100 μm	22
	4.8-5.0	<i>NO</i>	HA	whisker	100-300 μm	22
dissolution-precipitation process	12	Schiff bases	HA	nanorods, nanoparticle	35-200 nm, 10-18 nm	23
	7, 9	EDTA	HA	whisker	3 μm	24

Note: 1. hydroxyapatite: HA, dicalcium phosphate anhydrous: DCPA, dicalcium phosphate dehydrate: DCDP, octacalcium phosphate: OCP, β -TCP: β -tricalcium

phosphate; cetyltrimethylammonium bromide: CTAB, ethylene diamine tetraacetic acid: EDTA, disodium ethylene diamine tetraacetate: Na₂EDTA; PEO20-PPO70-PEO20: P123.

2. “*NO*” represents that the products reported in some literatures are synthesized without the use of additives.

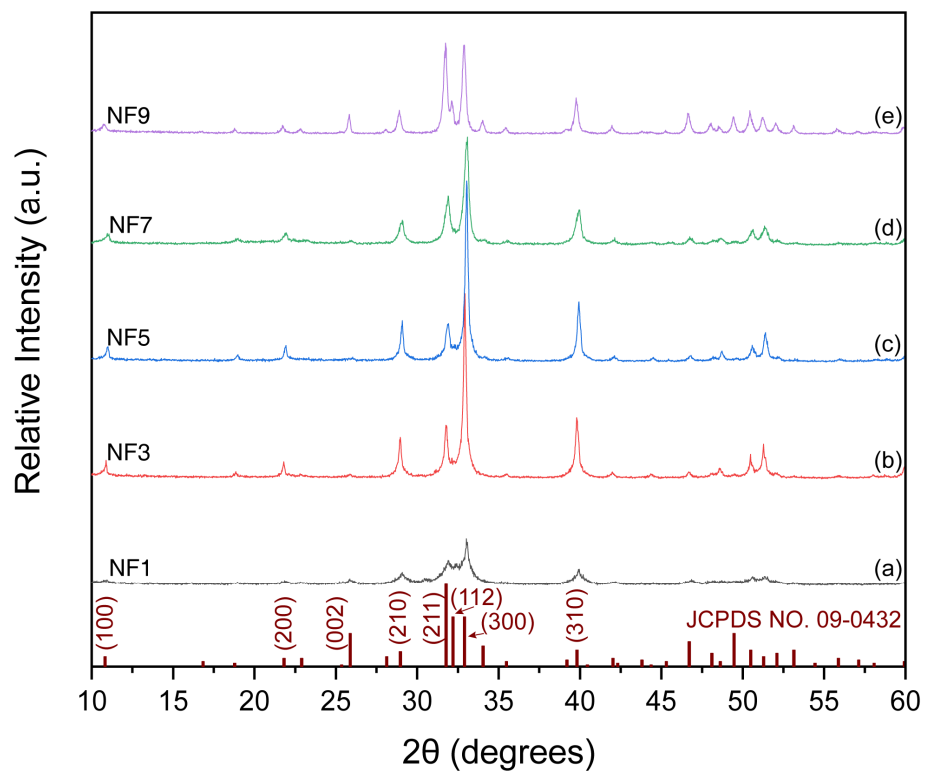


Fig. S1. XRD patterns of HA synthesized with different concentrations of NaOH. (a) 1.00 M; (b) 1.25 M; (c) 1.50 M; (d) 1.75 M; (e) 2.00 M.

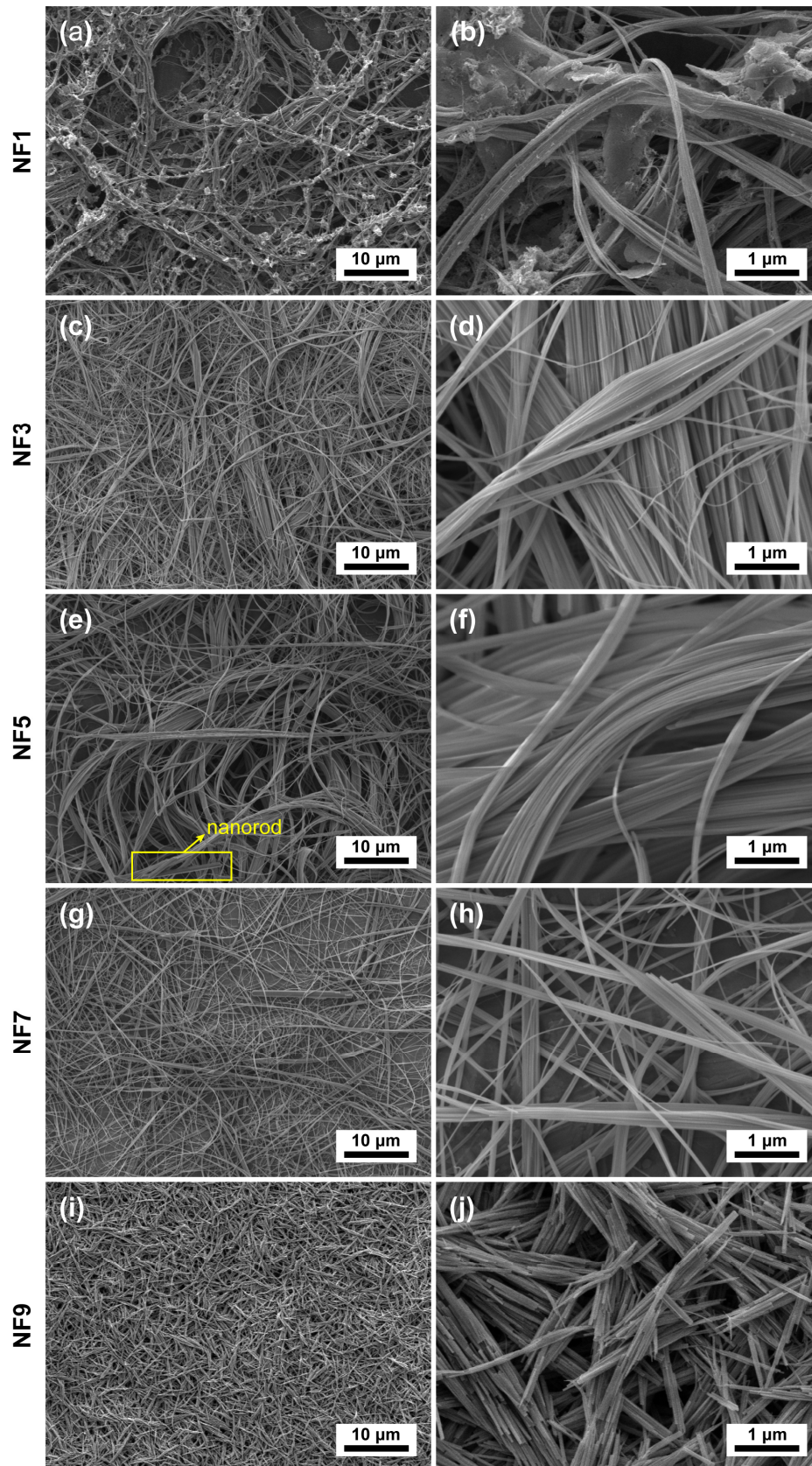


Fig. S2. FESEM photographs of HA synthesized with different concentrations of NaOH. (a-b) 1.00 M; (c-d) 1.25 M; (e-f) 1.50 M; (g-h) 1.75 M; (i-j) 2.00 M.

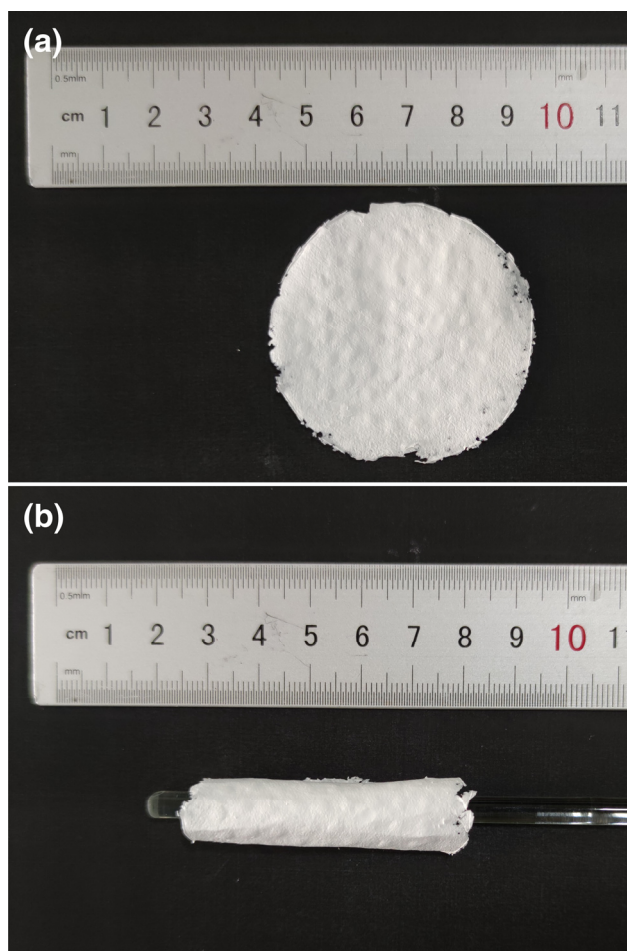


Fig. S3. Digital photographs of the highly flexible paper prepared by the sample NF4. The paper forms through a simple process of suction filtration and can be bent without breaking.

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