

Supplementary Material: Effect of Process Conditions on the Properties of Resorcinol-Formaldehyde Aerogel Microparticles Produced via Emulsion-Gelation Method

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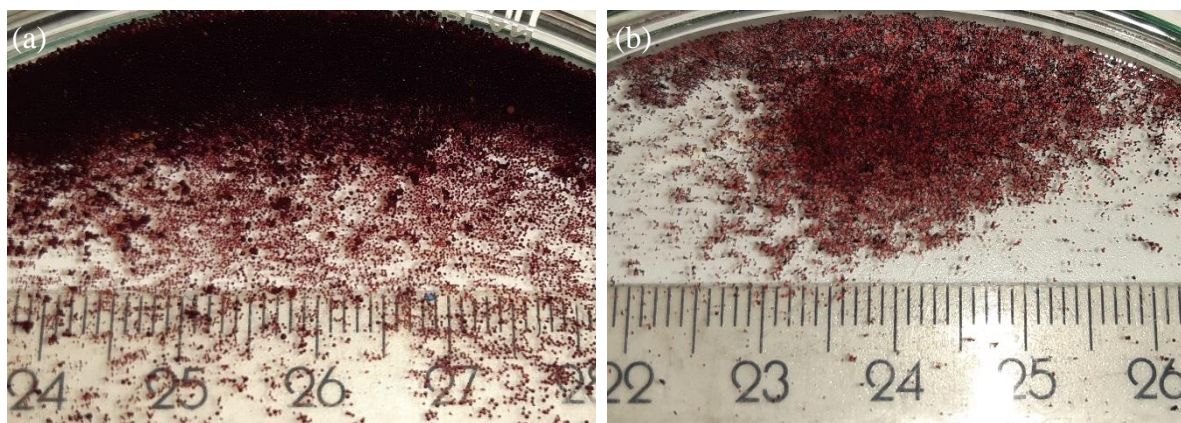


Figure S1. Pictures of the RF microparticles produced by emulsion-gelation method using (a) SCD and (b) APD, respectively.

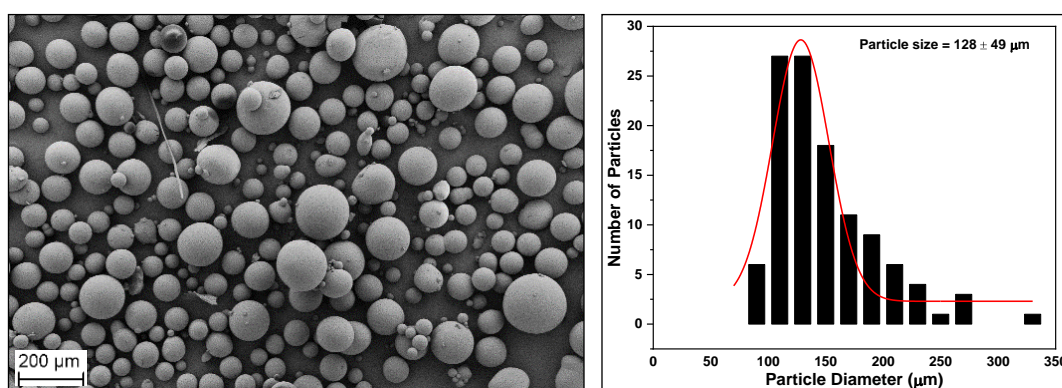


Figure S2. SEM image and its particle size distribution of S1-SCD, cured for 14 h.

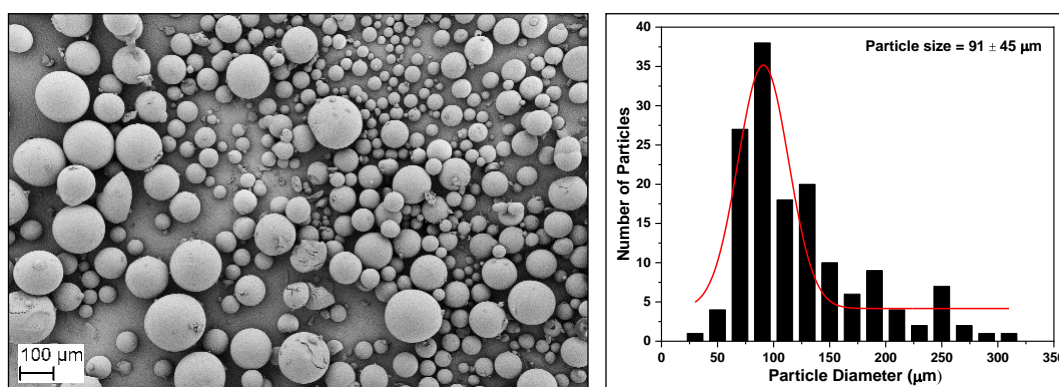


Figure S3. SEM image and its particle size distribution of S3-SCD, cured for 48 h.

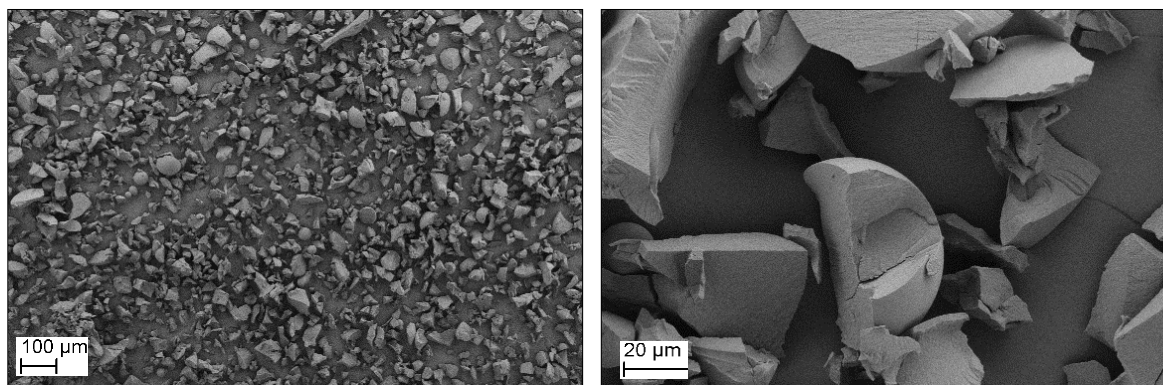


Figure S4. SEM images of RF microparticles cured for 72 h (S4-SCD).

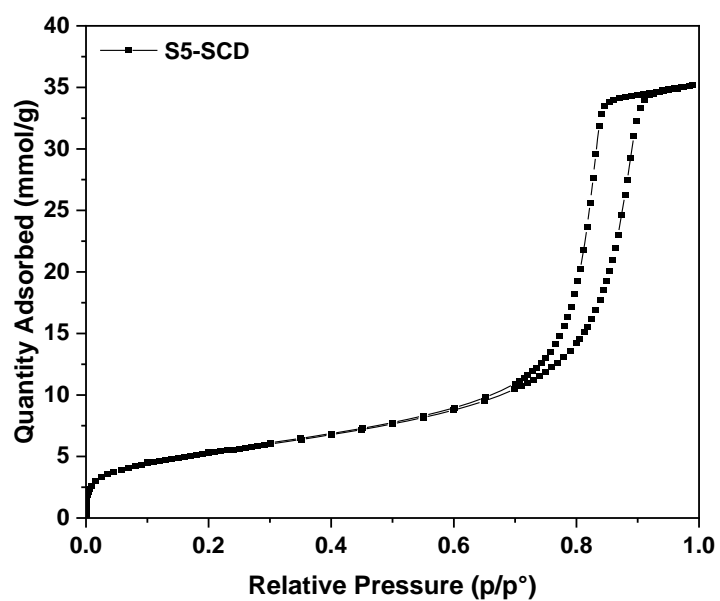


Figure S5. N₂ physisorption isotherm of RF microparticles (S5-SCD) prepared at 500 rpm.

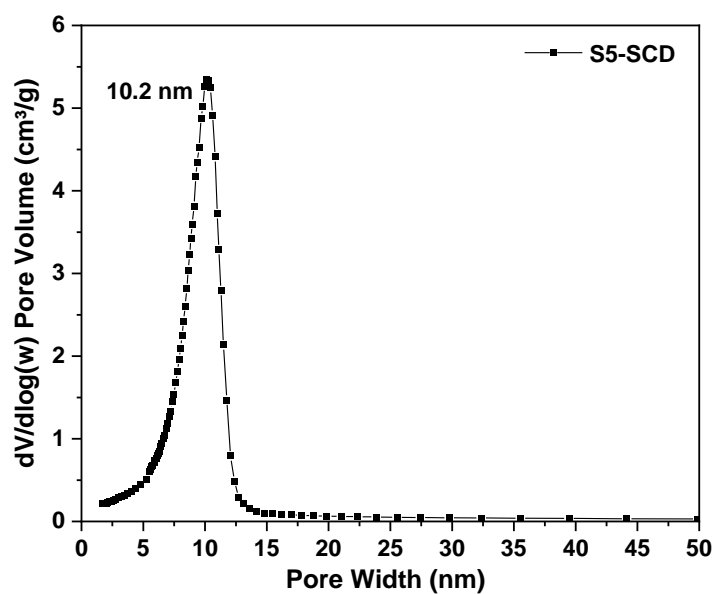


Figure S6. BJH pore size distribution of RF microparticles (S5-SCD) prepared at 500 rpm.

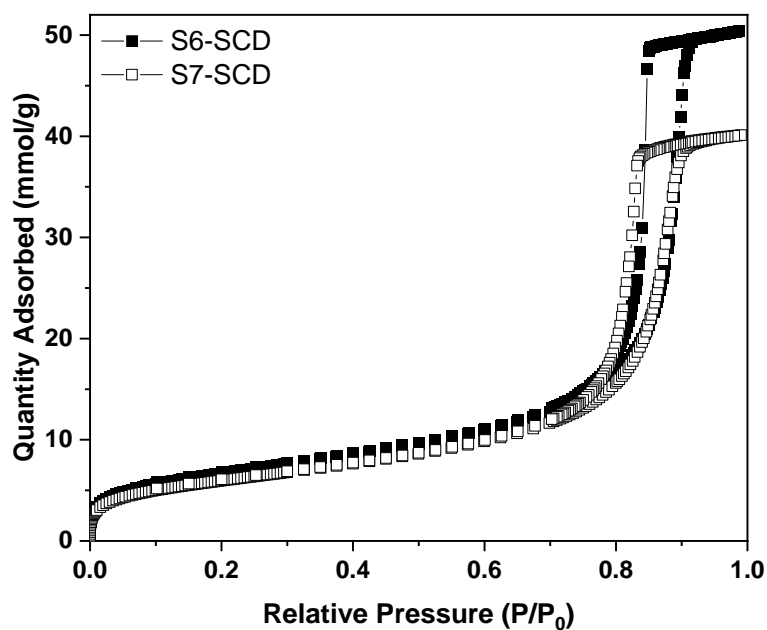


Figure S7. N₂ physisorption isotherms (77K) of the RF microparticles prepared with RF sol: oil ratios of 1:2 and 1:1.

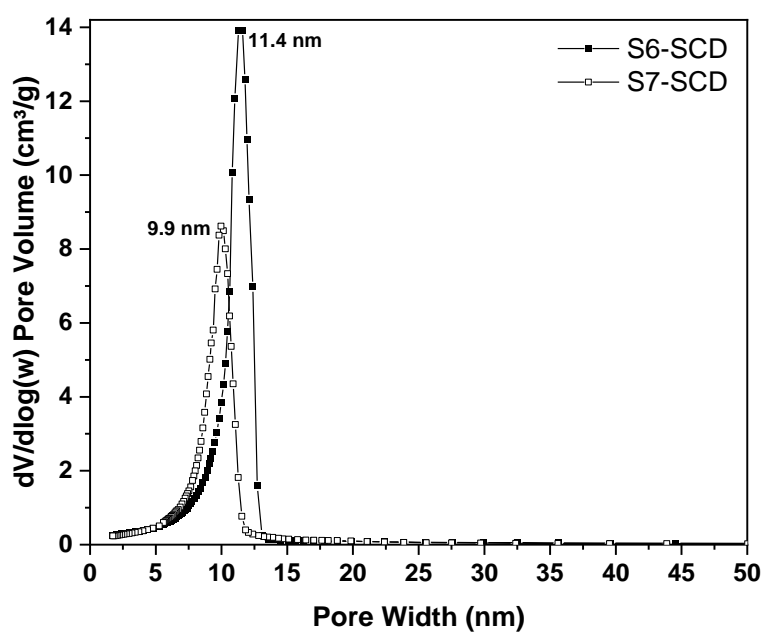


Figure S8. BJH Pore size distribution of RF microparticles prepared with RF sol: oil ratios of 1:2 and 1:1.

Table S1. Comparisons of the previously reported aerogel microparticles with present RF aerogel microparticles.

Sample Type	Oil phase	Size distribution (μm)	Surface area (m ² /g)	Pore volume (cm ³ /g)	Avg. Pore diameter (nm)
Alginate [1]	Paraffin oil	7.2-23	330-548	1.7-5.9	-
Cellulose [2]	Paraffin oil	5-20	250-350	-	-
Silica [3]	Edible oil	5	796	-	9.2
Starch [4]	Rapeseed oil	25-270	-	-	-
Starch [5]	Vegetable oil	215-1226	34-120	0.18-0.32	-

Polyimide[6]	Silicone oil	200-1000	360-484	-	-
Silica [7]	Hexane	300	853	2.15	16
RF [8]	Cyclohexane	10-80	-	-	-
RF [9]	Paraffin oil	77-158	16-78	-	-
MF* [10]	Dodecane	20-200	200	0.12-0.27	4-12
Carbon (from RF) [11]	Peanut oil	30-1000	250-650	0.1 to 0.4	3.1 to 4.7
Carbon (from RF) [12]	Hexamethylene	2-50	414-603	0.028-0.432	1.43
RF [#]	Rapeseed oil	50-425	400-526	1.3-1.75	10-14

*Melamine-Formaldehyde; [#]Current work.

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