

## Supplementary Information

### **Eco-friendly and facile synthesis of size-controlled spherical silica particles from rice husk**

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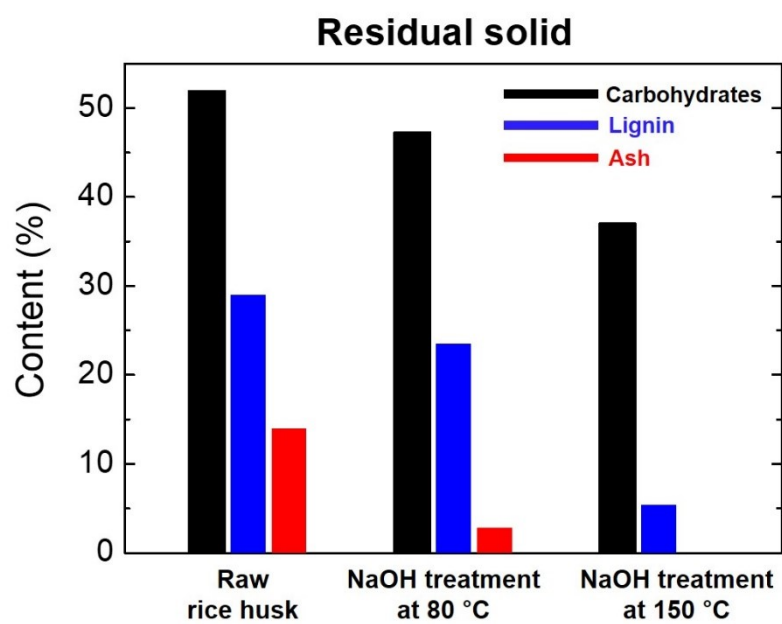
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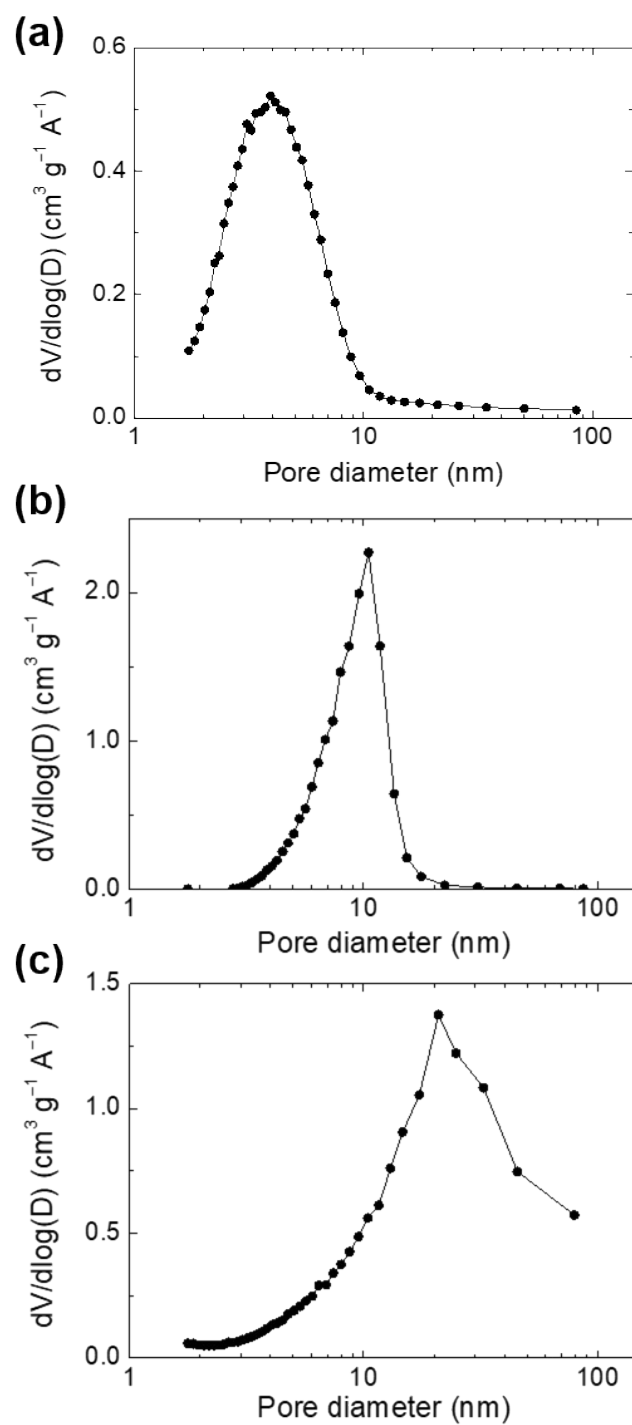
**Table S1.** Inorganic compositions of raw rice husk, SS-1, and SS-1A.

	<b>Components</b>	<b>Raw rice husk</b>	<b>SS-1</b>	<b>SS-1A (washing with diluted acetic acid)*</b>
<b>ICP-OES</b>	SiO <sub>2</sub>	94.70	97.76	99.95
	Na <sub>2</sub> O	0.09	2.000	0.001
	Al <sub>2</sub> O <sub>3</sub>	0.08	0.017	0.003
	Fe <sub>2</sub> O <sub>3</sub>	0.06	0.017	0.002
	CaO	1.42	0.039	0.006
	MgO	0.54	0.057	0.002
	K <sub>2</sub> O	1.70	0.067	0.001
	P <sub>2</sub> O <sub>5</sub>	1.14	–	–
	MnO	0.18	0.032	–

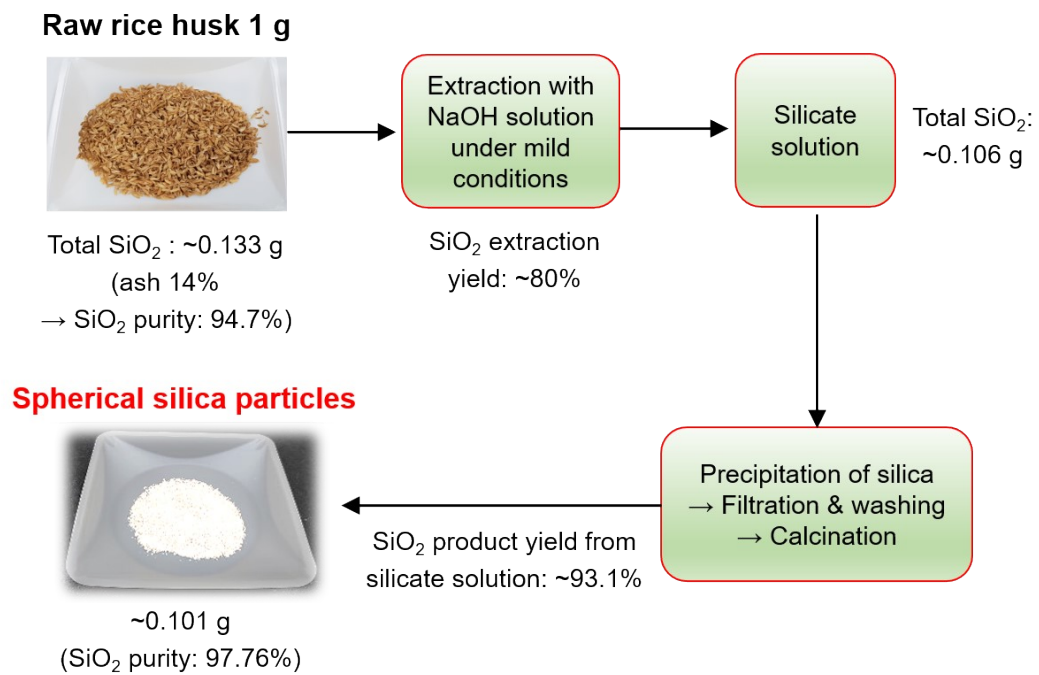
\*Washing of SS-1A with diluted acetic acid progressed before calcination. The acetic acid solution used in washing process was composed of 5 mL of acetic acid and 100 mL of distilled water, and the washing was carried out by simple stirring at room temperature (25 °C) for 5 min.



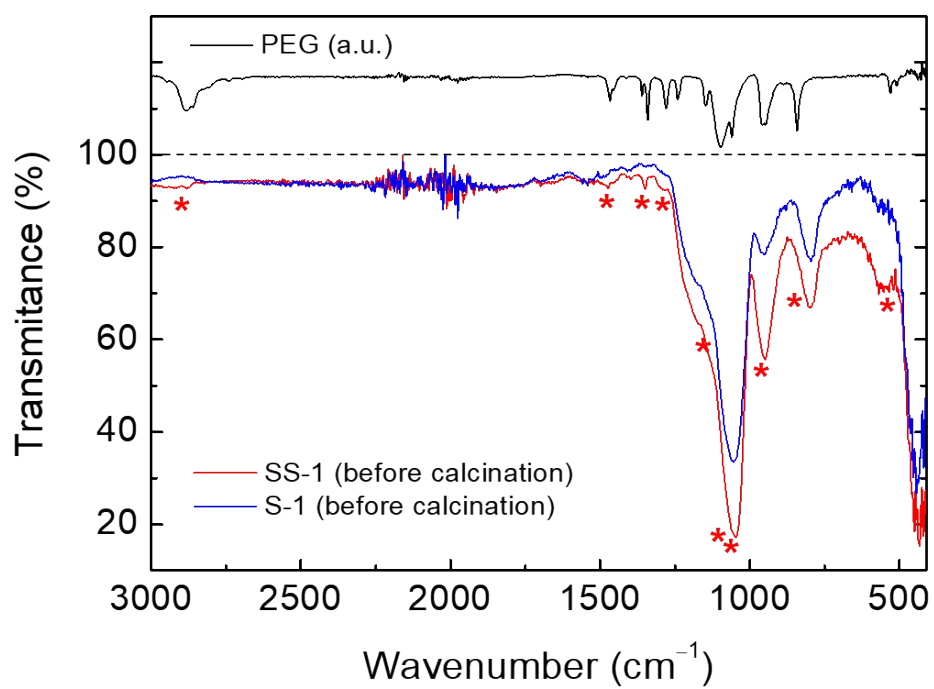
**Fig. S1.** Contents of carbohydrates, lignin, and ash in the raw rice husk and the residual solids after NaOH treatment under mild (80 °C) or harsh conditions (150 °C).



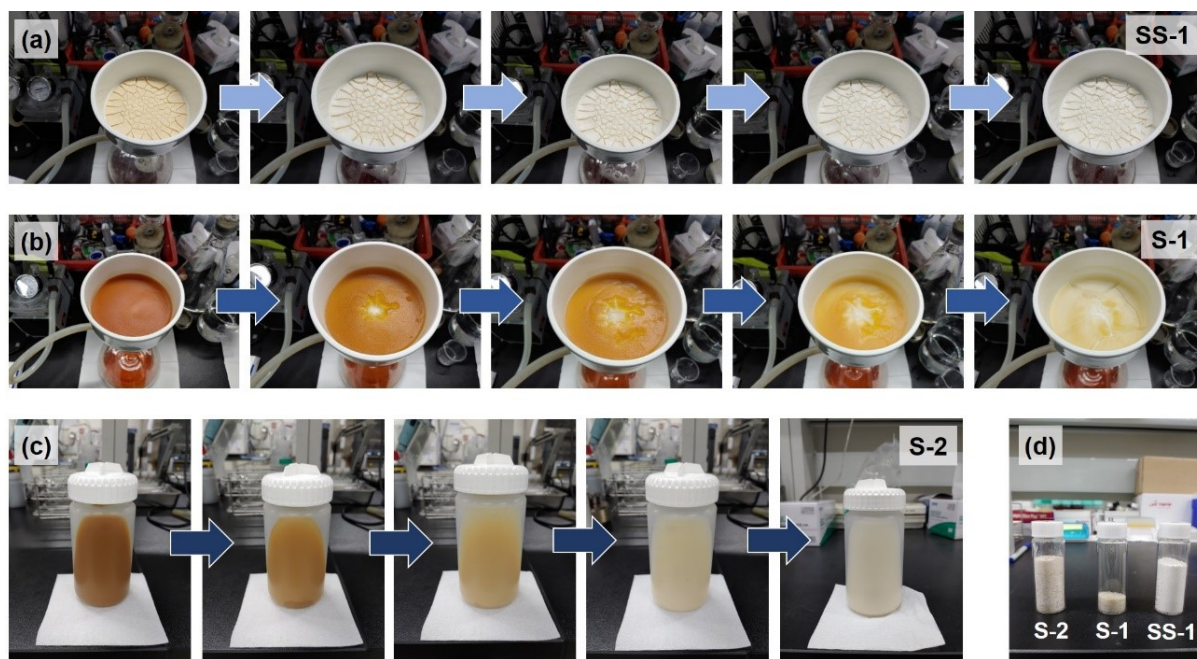
**Fig. S2.** Pore size distributions of (a) SS-1, (b) S-1, and (c) S-2.



**Fig. S3.** Flow chart showing the amount of spherical silica particles obtained per 1 g of raw rice husk and the percentage silica product yield from silicate solution.



**Fig. S4.** FT-IR spectra of PEG polymer (Mr: 2700–3300, Aldrich), SS-1 (before calcination), and S-1 (before calcination) particles.



**Fig. S5.** Photographs of the collection and systematic washing of (a) SS-1, (b) S-1, and (c) S-2. 100 mL of distilled water was used per washing cycle, and washing was performed four times. (d) Photograph of dried samples after washing.

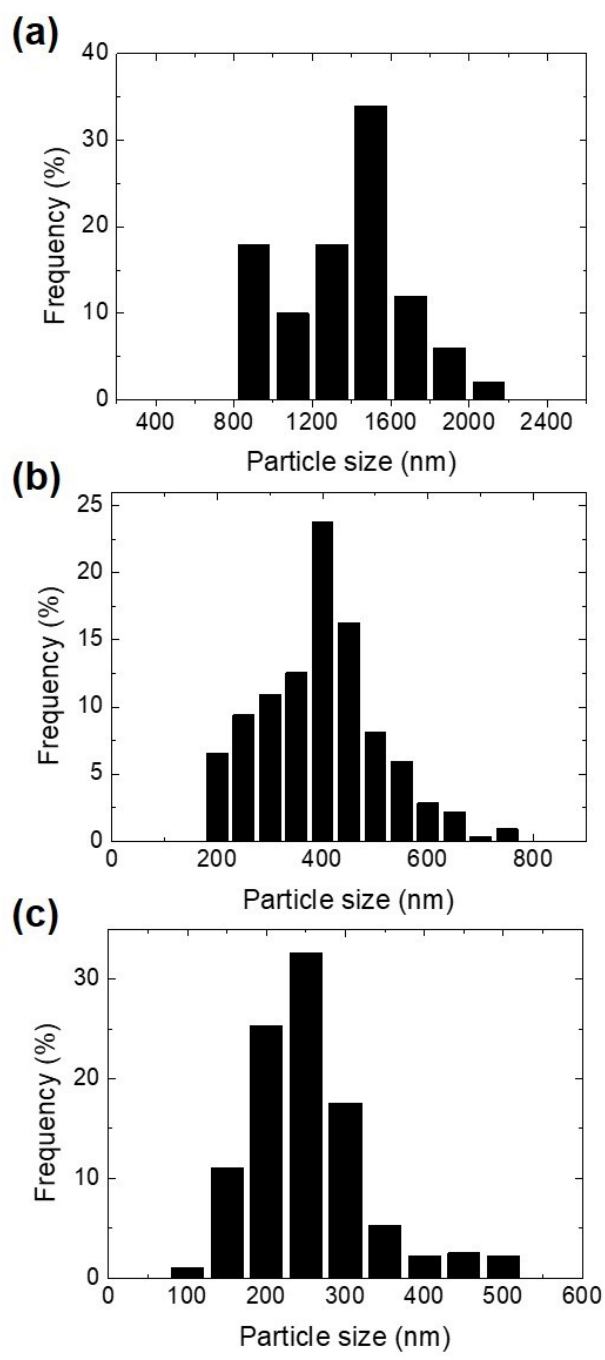


Fig. S6. Particle size distributions of (a) SS-2, (b) SS-3, and (c) SS-4.