Sustainable uric acid sensor based on a lab-fabricated electrode modified with rice straw-derived carbon materials

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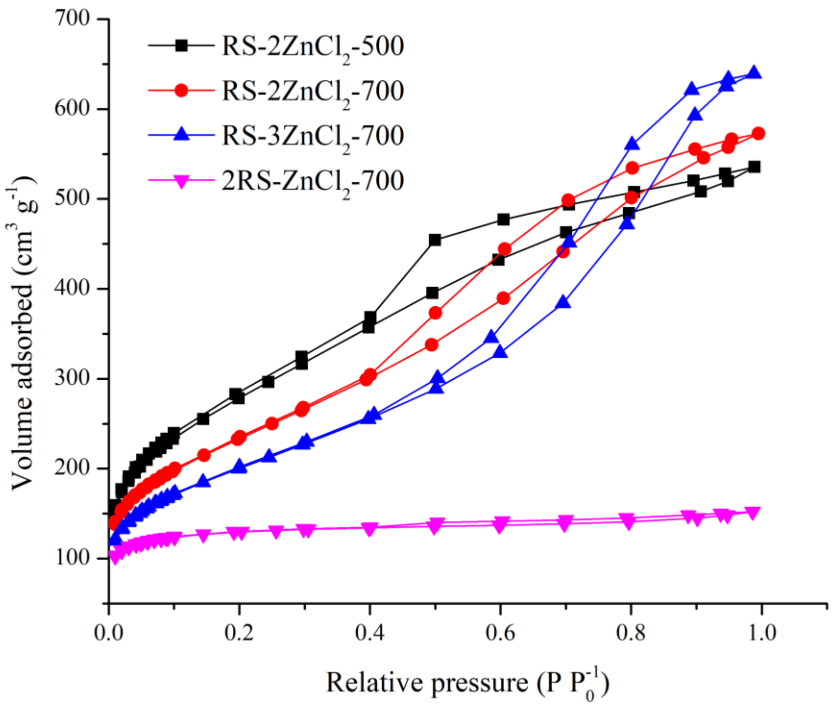

Fig. S1. Nitrogen adsorption-desorption isotherms of carbon-ZnO composites.

Materials	S_{BET} [$m^2\ g^{-1}$]	S_{micro} [$m^2\ g^{-1}$]	S_{meso} [$m^2\ g^{-1}$]	D_p [nm]
RS-2$ZnCl_2$-500	1,001.0	12.3	988.8	3.31
RS-2$ZnCl_2$-700	833.1	35.2	797.8	4.25
RS-3$ZnCl_2$-700	709.5	53.4	656.1	5.58
2RS-$ZnCl_2$-700	418.3	296.5	121.8	2.25

Table S1 Surface area (S) and average pore diameter (Dp) of carbon-ZnO composites.

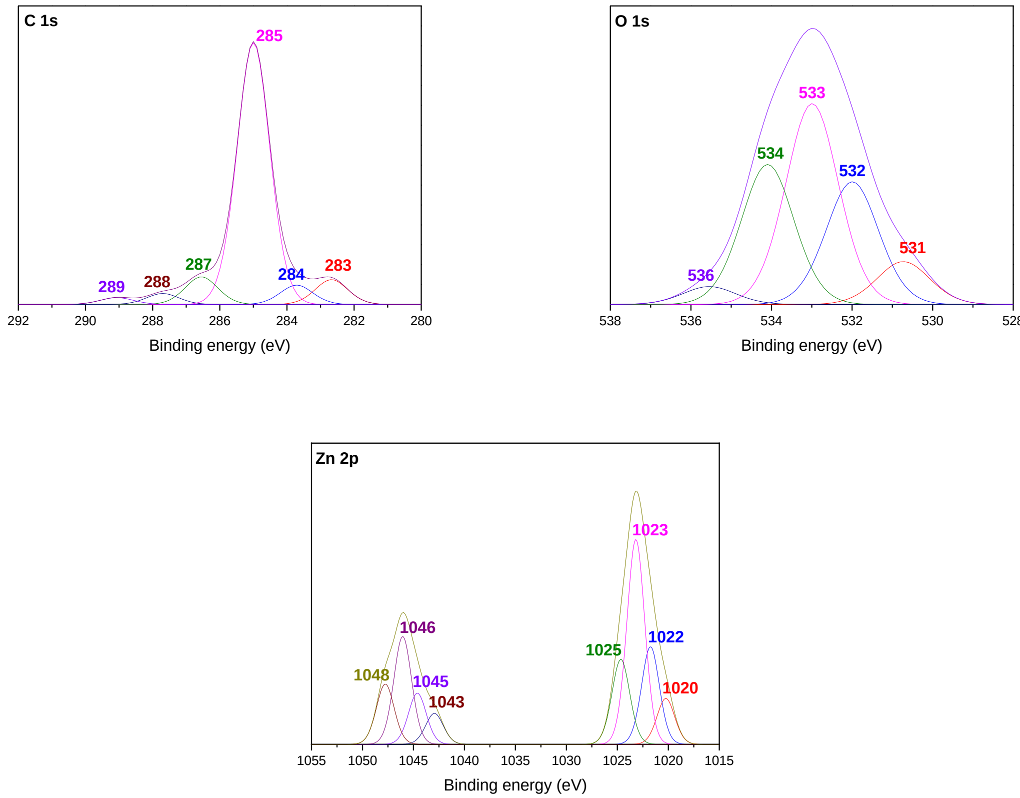

Fig. S2. XPS spectra of RS-2ZnCl$_2$-500.

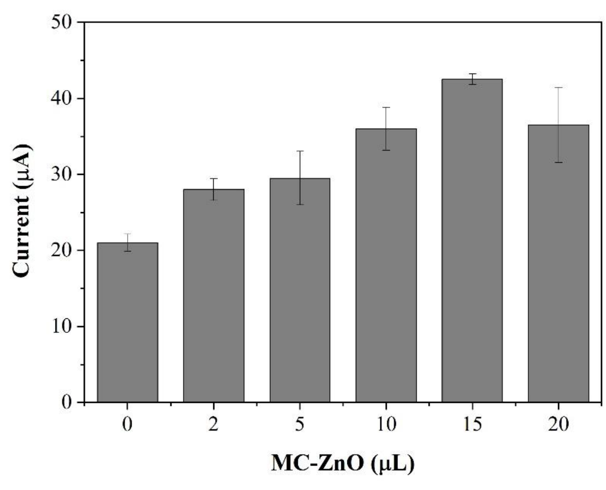

Fig. S3. Investigation of the optimal MC-ZnO amount for modifying the bare SPCE.

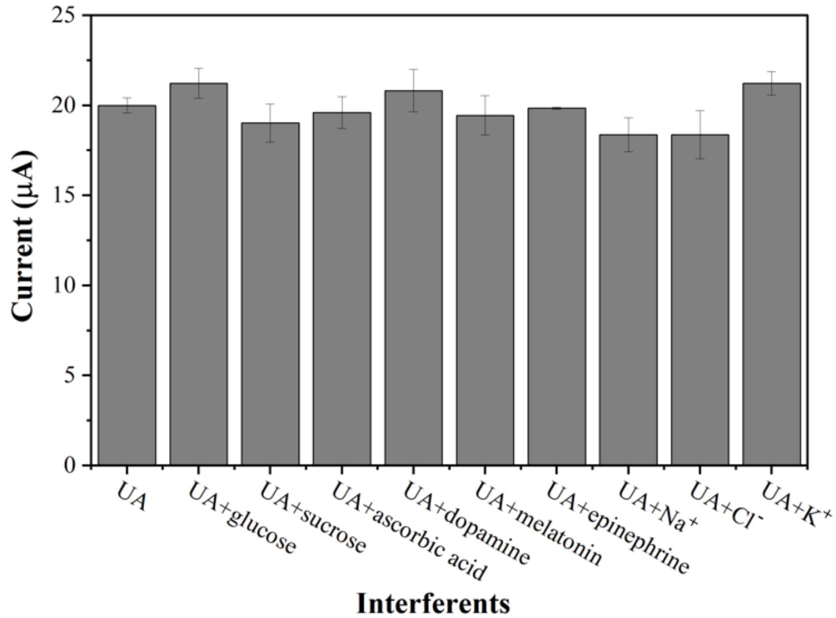

Fig. S4. The selectivity of the MC-ZnO/SPCE to 100 μM uric acid (UA) and different substances (1,000 μM glucose and sucrose, 200 μM ascorbic acid, 100 μM dopamine, melatonin, and epinephrine, 50,000 μM Na^+ and Cl^-, and 20,000 μM K^+) in presence of 100 μM UA.

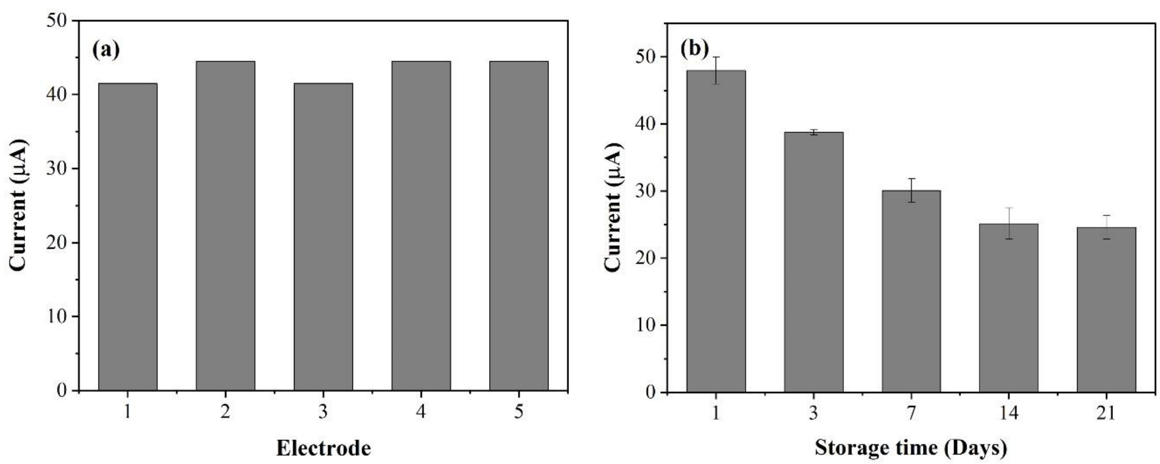

Fig. S5. The reproducibility (a) and stability (b) of the MC-ZnO/SPCE sensor.