Supporting Information

Theophylline-Bearing Microspheres with Dual Features as Coordinative Adsorbent and Catalytic Support for Palladium Ions

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Fig. S1. Snapshot image of wettability of μ-T1 (left), μ-T2 (right) (5mg) in the phase-separated mixture of diethyl ether/water (2.0 mL/2.0 mL).
Fig. S2. SEM section images of the internal structure of μ-T2.

Table S1. Specific surface areas and pore properties of microspheres

| type of microball | surface area $^a$) (m² g⁻¹) | Pore size (nm) | pore volume (cm³ g⁻¹) |
|------------------|-------------------------------|----------------|----------------------|
| μ-1              | 1.7                           | 76.3           | 0.0055               |
| μ-T1             | 1.9                           | 61.7           | 0.0068               |
| μ-2              | 1.5                           | 77.0           | 0.0071               |
| μ-T2             | 1.9                           | 62.2           | 0.0130               |

$a$) Specific surface area based BET method.
Fig. S3. DLS results of $\mu$-1, $\mu$-T1 and $\mu$-2, $\mu$-T2.

Fig. S4. UV-vis spectra of $\mu$-T2 adsorbed from different palladium(II) concentration solutions and comparison of benzyltheophylline-PdCl$_2$ complex. Enlargement view indicate absorbance at 420 nm corresponding to palladium.
Fig. S5. The recycling test of the catalyst of Pd-loaded microsphere of μ-T2. Reaction conditions: bromobenzene (1.0 mmol), phenylboronic acid (1.5 mmol), K₂CO₃ (2.5 mmol), 2.0 mol% of Pd, H₂O (2 mL), 50 °C for 1h.

Fig. S6. SEM image of Pd-loaded μ-T2 after reuse of the 4th time.