

1 **SUPPORTING INFORMATION**

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3 **Gold nanoparticle-mesoporous silica sheet composite with**
4 **enhanced antibody adsorption capacity**

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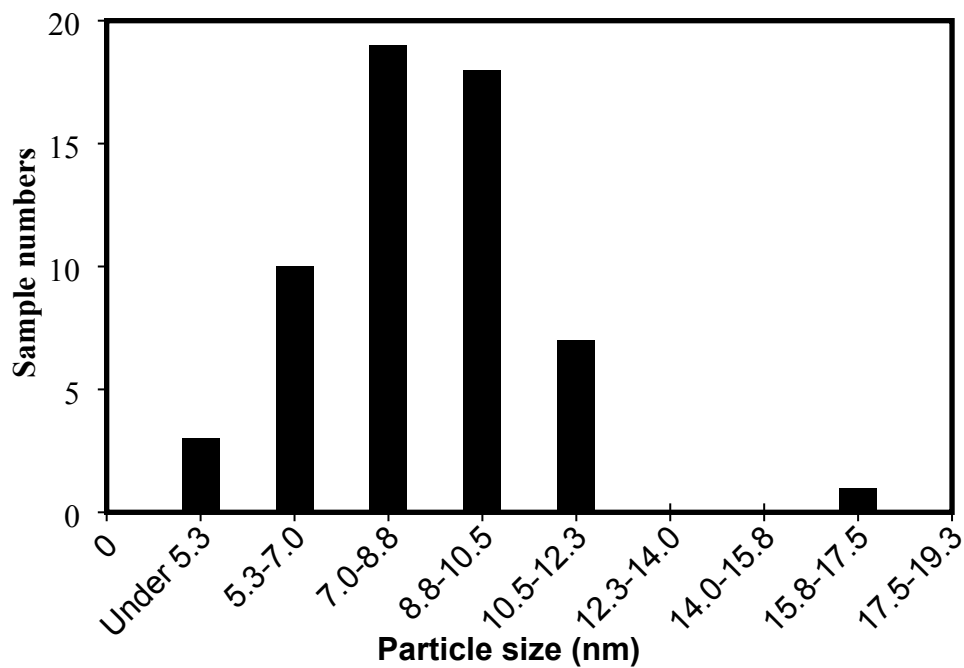
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2 **Fig. S1** Au particle size distributions for sheet-Au-550.

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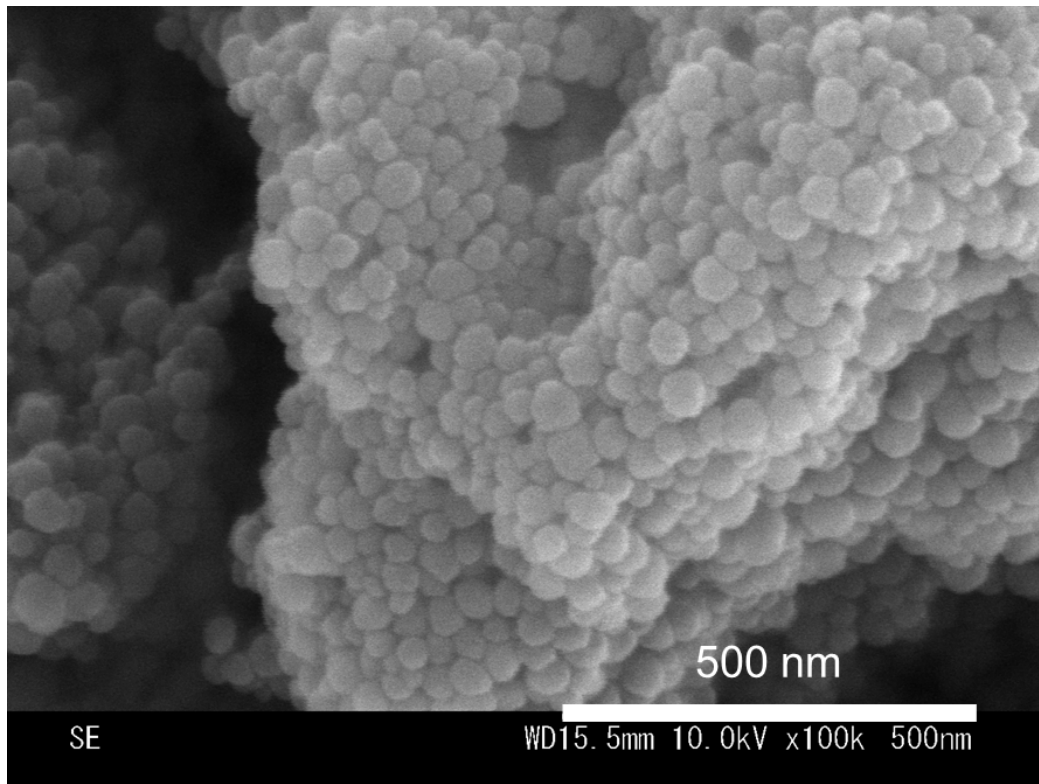
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4 **Fig. S2** FE-SEM image of silica beads prepared using the Stober method.

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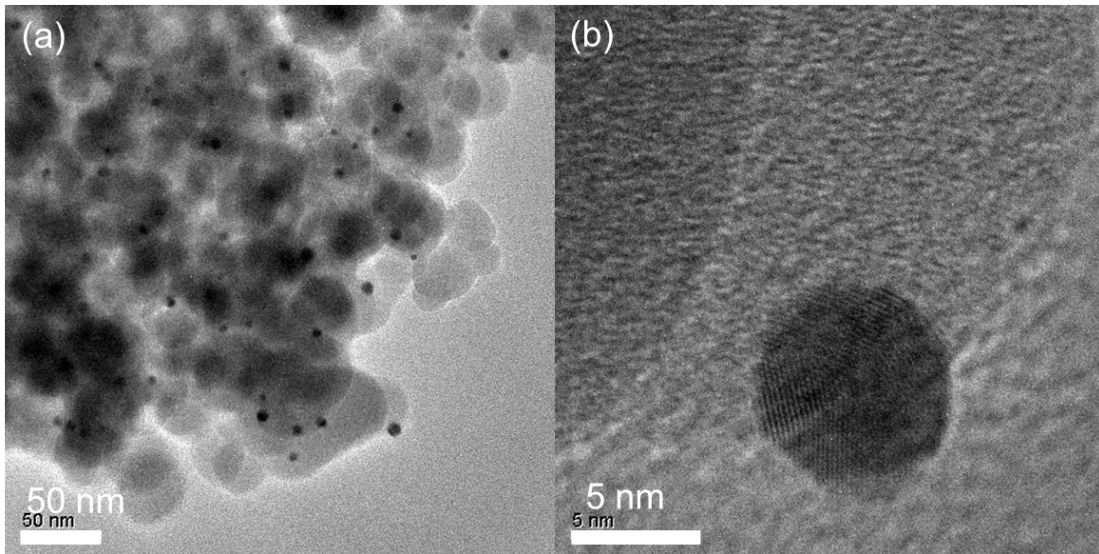
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4 **Fig. S3** TEM images of Stöber-Au-550 (a) $\times 50$ k and (b) $\times 800$ k.

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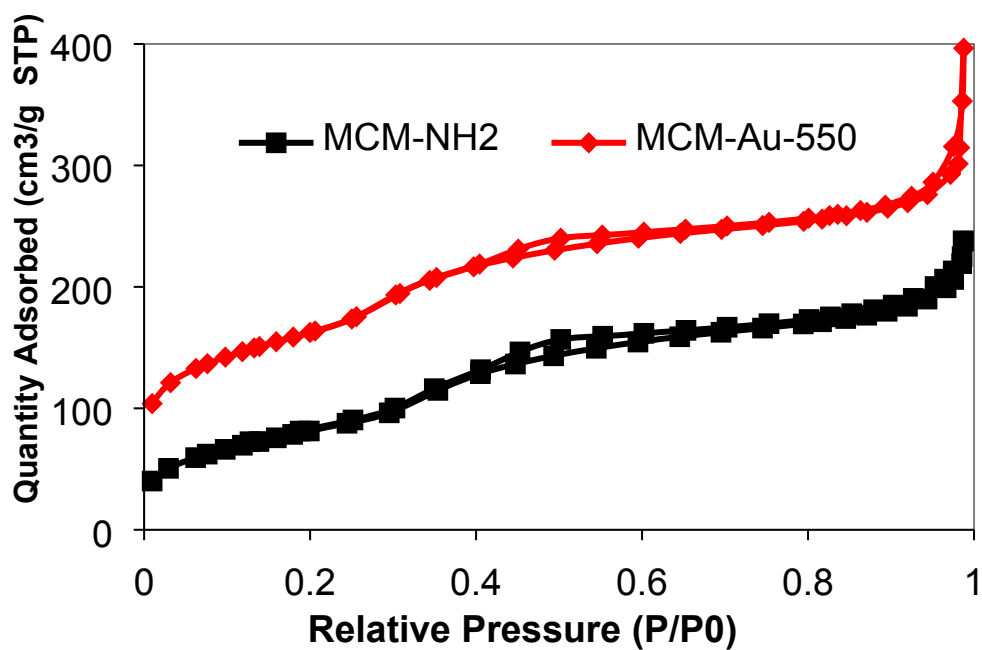
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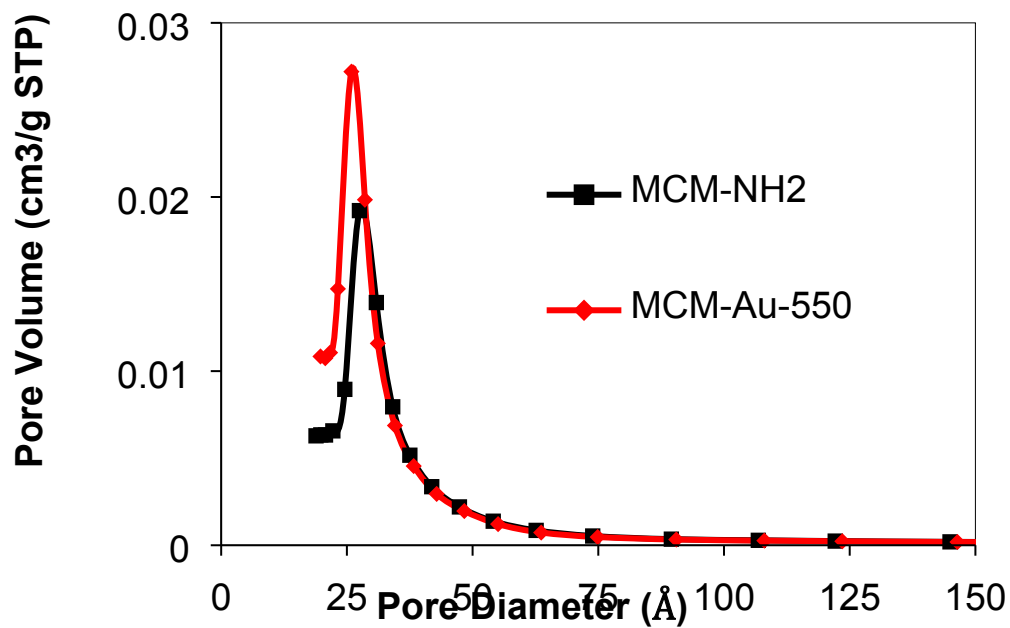
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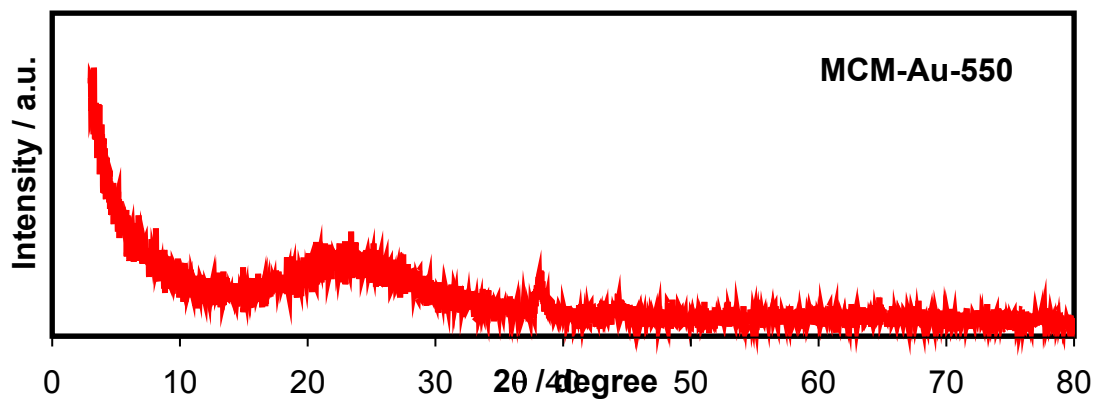
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3 **Fig. S4** Nitrogen adsorption–desorption isotherms and pore distributions for MCM-NH₂

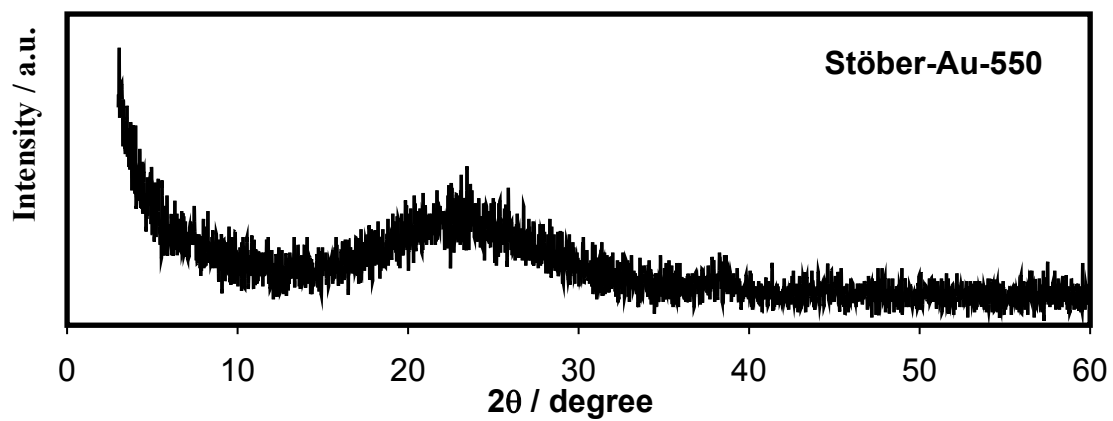
4 (black) and MCM-Au-550 (red).

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3 **Fig. S5** XRD patterns for MCM-Au-550 and Stöber-Au-550.

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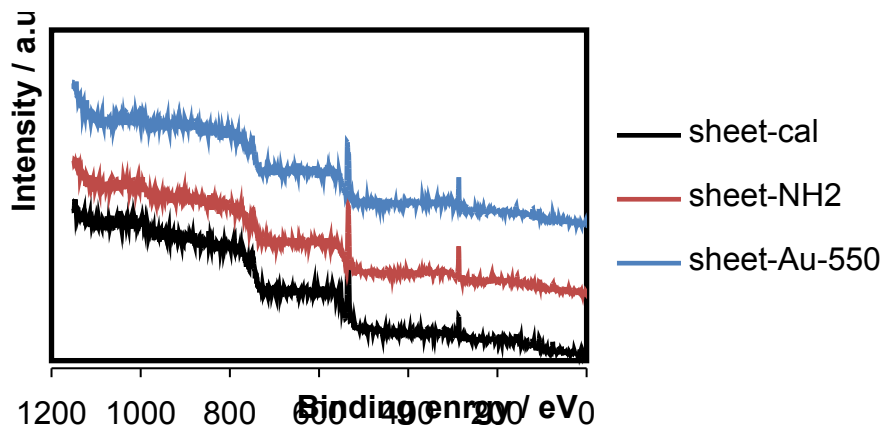
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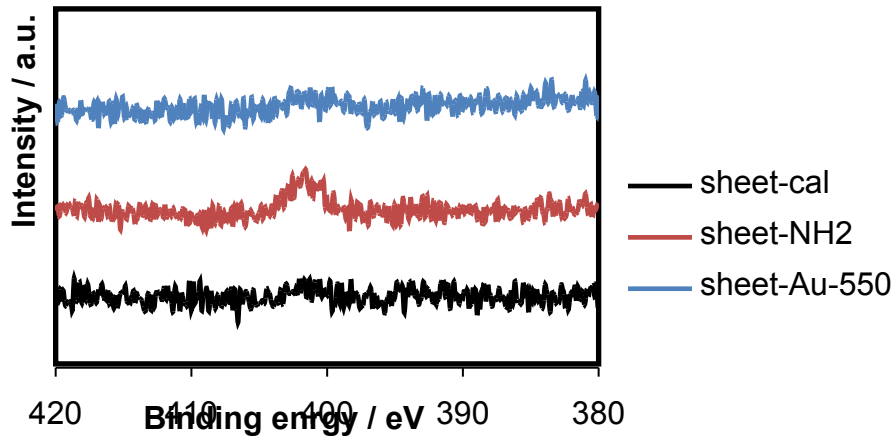
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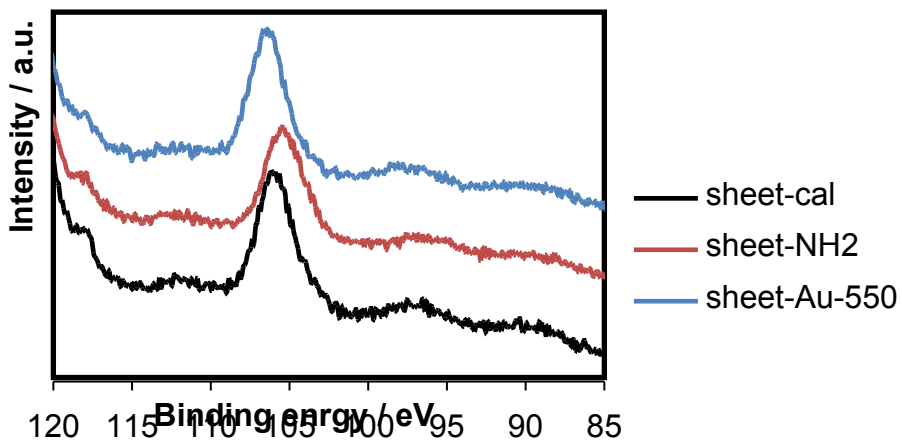


2 (b)



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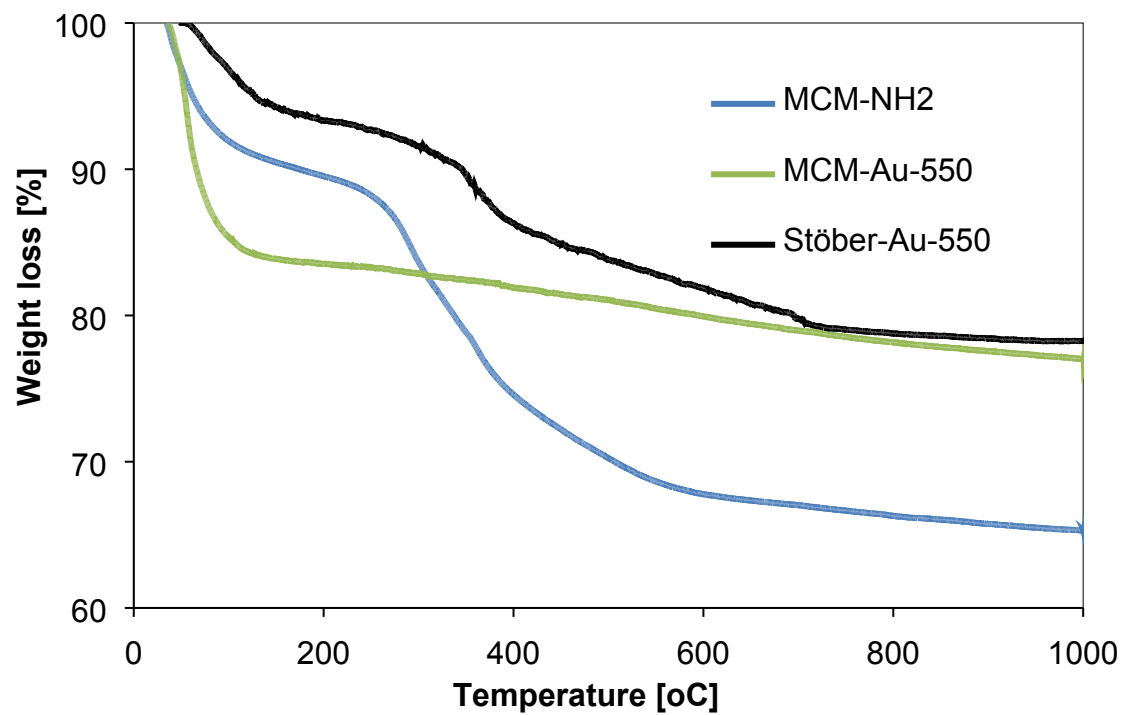
4 (c)



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6 **Fig. S6** XPS spectra of the silica samples: (a) wide range, (b) N 1s and (c) Si 2p.

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2 **Fig. S7** Thermogravimetry (TG) curves for MCM-NH₂ (blue), MCM-Au-550 (green)
3 and Stöber-Au-550 (black).

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1 **TableS1** Quantity of adsorbed IgG on various silica materials.

| Materials | sheet-cal | sheet-NH ₂ | sheet-Au-550 | MCM-NH ₂ | MCM-Au-550 | Stöber-NH ₂ | Stöber-Au-550 |
|--------------------------------|-----------|-----------------------|--------------|---------------------|------------|------------------------|---------------|
| Amount of adsorbed IgG [mg/mg] | 0.21 | 0.15 | 0.26 | 0.04 | 0.13 | 0.10 | 0.14 |

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3 0.5 mg of IgG/800 mL of 10 mM Phosphate Buffer (pH7.0) @ 1.5 mg of carrier

4 Adsorption reaction time = 3 h

5 Absorbance = 595 nm (1 s) (Using the Bradford method)

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