Improved Biocatalytic Cascade Conversion of CO$_2$ to Methanol by Enzymes Co-immobilized in Tailored Siliceous Mesostructured Cellular Foams

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S1. Nitrogen sorption analysis

**Figure S1.** Nitrogen sorption measurements for MCF. (a) Nitrogen adsorption-desorption isotherms and (b) pore size distribution (black line) and window size distribution (grey line).
S2. TGA analysis

Figure S2. TGA measurements for the MCF and MCF-MP.
S3. Individual distribution of FateDH, FaldDH, ADH in MCF

Figure S3. Intensity profiles of particles #1–#5 in Figure 2. Yellow: FateDH-Cy3, red: FaldDH-Cy5, blue: ADH-AF488.
S4. Co-distribution of FateDH, FaldDH, ADH in MCF

**P_{LD}150 in reaction order**

**Figure S4.** Enzyme distribution along the MCF particle after the immobilization in reaction order with P_{LD}150. (a) FateDH-Cy3, (b) FaldDH-Cy5, (c) ADH-AF488.

**Figure S5.** Intensity profiles of particles #1–#5 in Figure 4a according to individual imaging in Figure S4. Yellow: FateDH-Cy3, red: FaldDH-Cy5, blue: ADH-AF488.
**P_{LD150} in size order**

**Figure S6.** Enzyme distribution along the MCF particle after the immobilization in size order with P_{LD150}. (a) FateDH-Cy3, (b) FaldDH-Cy5, (c) ADH-AF488.

**Figure S7.** Intensity profiles of particles #1–#5 in Figure 4b according to individual imaging in Figure S6. Yellow: FateDH-Cy3, red: FaldDH-Cy5, blue: ADH-AF488.
**PLD50 in size order**

**Figure S8.** Enzyme distribution along the MCF particle after the immobilization in size order with PLD50. (a) FateDH-Cy3, (b) FaldDH-Cy5, (c) ADH-AF488.

**Figure S9.** Intensity profiles of particles #1–#5 in Figure 4c according to individual imaging in Figure S8. Yellow: FateDH-Cy3, red: FaldDH-Cy5, blue: ADH-AF488.