Supporting Information for the Article

**Oriented growth of the functionalized metal-organic framework CAU-1 on –OH- and –COOH-terminated self-assembled monolayers**

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Figure S1. RAIR-spectrum of a 16-mercaptohexadecanol (MHD) self-assembled monolayer on a gold substrate.

Figure S2. RAIR-spectrum of a 16-mercaptohexadecanoic acid (MHDA) self-assembled monolayer on a gold substrate.
Figure S3. TGA and DSC data of bulk CAU-1 showing the solvent removal and decomposition of the product.

Figure S4. Physisorption measurement performed with nitrogen at 77 K for bulk CAU-1 showing a type I isotherm, the specific surface area (BET) and the pore size distribution (NLDFT).
Figure S5. Physisorption measurement performed with H$_2$ at 77 K for bulk CAU-1.

Figure S6. Physisorption measurement performed with CO$_2$ at 273 K for bulk CAU-1.
Figure S7. IR spectrum of bulk CAU-1.

Figure S8. Raman spectrum of bulk CAU-1.
Figure S8. EtOH sorption isotherms recorded from a CAU-1 thin film with preferred [011] orientation.
Figure S9. X-ray diffraction pattern of CAU-1 (A) crystals with preferred $[011]$ orientation on a MHDA SAM-functionalized QCM chip. The small signal to noise ratio is attributed to the small area of the gold electrode.