

Supplementary Information

Polymorphism Stabilization by Crystals Adsorption on Self-Assembled Monolayer

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Characterization methods:

The gold substrates were characterized by AFM instrument: Dimension ICON with FESP (50-100 kHz) probe and spring const. of 1-5 N/m. The study was made in the tapping mode. The resolution of the imaging was 512 lines/sample with a scan rate of 0.8 Hz.

X-ray photoelectron spectroscopy (XPS) analyses were performed in a Kratos AXIS-HS spectrometer, using a monochromatized Al KR source. Survey and High-Resolution were acquired at 75 or 150W. All data acquisitions were performed at detection pass energies of 40-80 eV. All XPS measurements were carried out at room temperature, under vacuum conditions of (1.0-3.0) 10⁻⁹ torr. The spectra were acquired with a low electron flood gun for charge neutralization. The spectrometer energy scale was routinely calibrated according to the ISO TC/201 SC7 international procedure for binding energy (BE) with Au 4f 7/2 83.98 and Cu 2p 3/2 932.67. Spectra binding energy were not corrected for charging shifts. Data processing was done with VISION software (Kratos).

The ellipsometric measurements were performed using a Spectroscopic imaging ellipsometer nanofilm_ep3se: Nulling Ellipsometer in PCSA-configuration with a solid state laser (658 nm, 20 mW) and other lasers on request. It is composed of separate spectroscopic box with Xenon Arc lamp and 46 interference filters in the range between 360 and 1000 nm.

The contact angle with water for the SAMs on the gold substrate was measured on a contact angle system: OCA, model OCA 20 from Dataphysics Instruments GmbH.

Figure S1: Organic molecules used for self-assembled monolayers

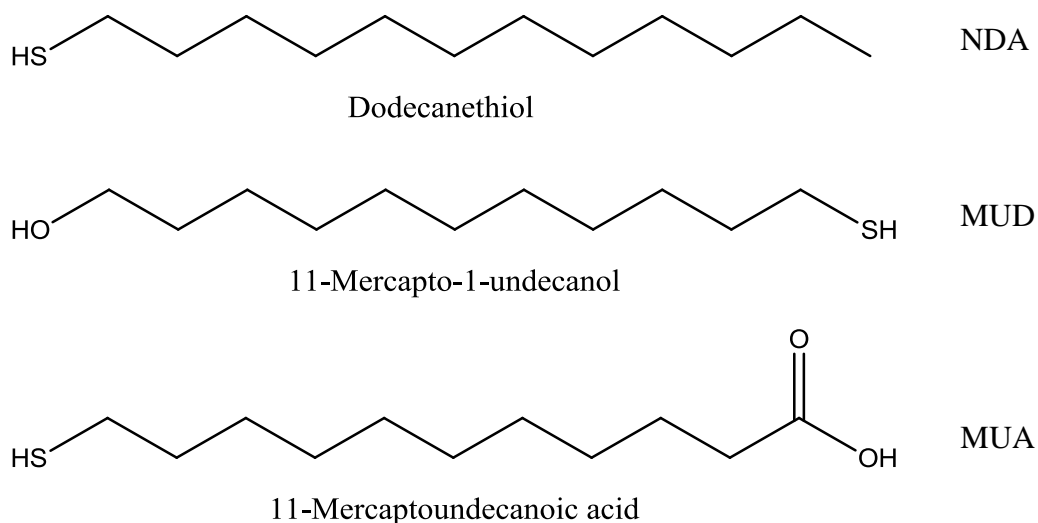


Figure S2: AFM images of the ultra flat gold covered mica surface

The topography of the gold-Mica surfaces is very smooth (RMS: 0.48 nm). The gold films consist of small grains with typical sizes less than 60 nm.

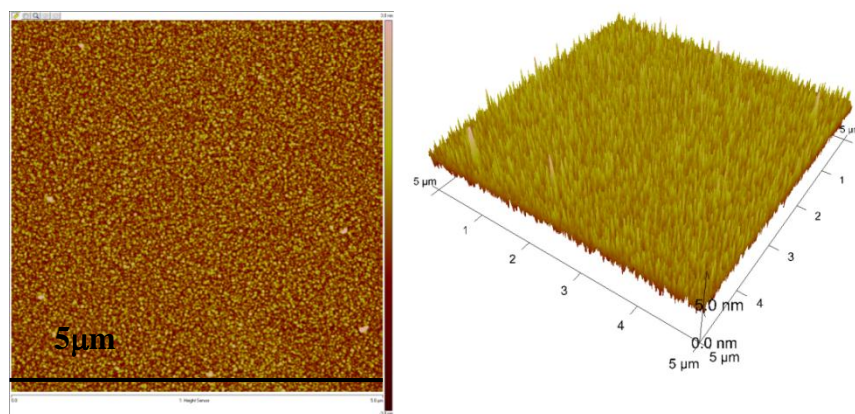


Figure S3: XRD (X-ray diffraction) of Au-films

The X-ray diffraction of the gold surfaces shows a sharp peak at approximately $2\theta=38^\circ$ corresponding to the (111) crystal plane orientation of gold. Other peaks (green lines) corresponding to orientations of gold other than (111) are not observed indicating strong crystal orientation of the thin gold film. Additional peaks observed in the X-ray diffraction pattern correspond to the Mica surface (black/red lines).

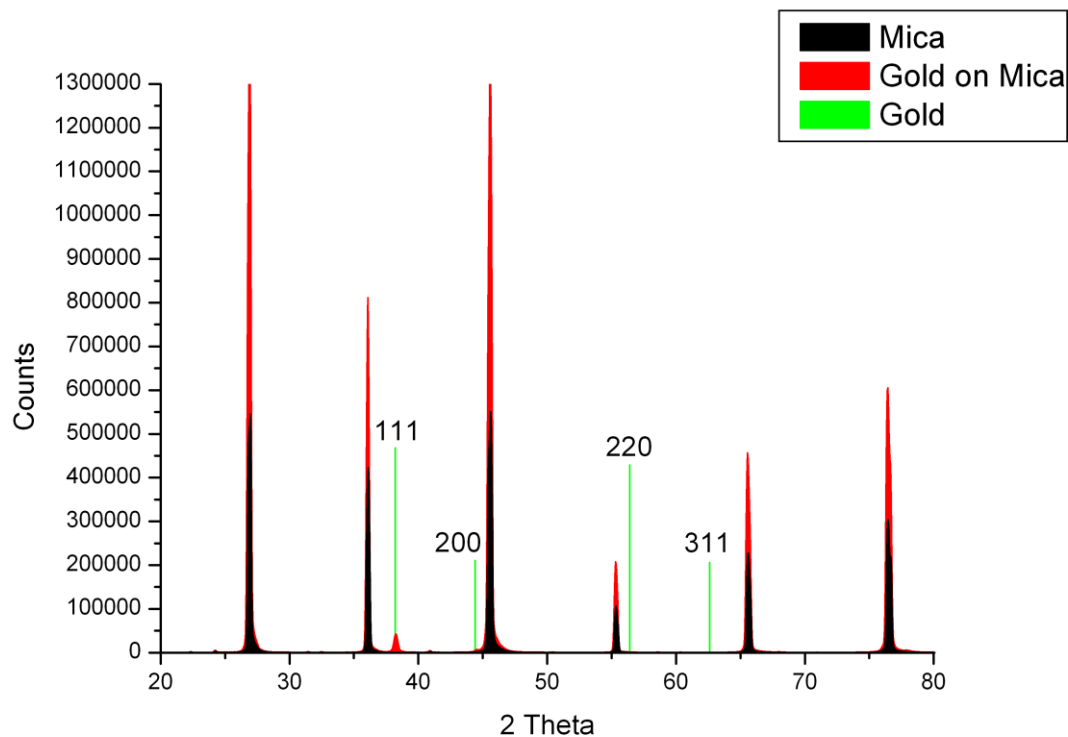
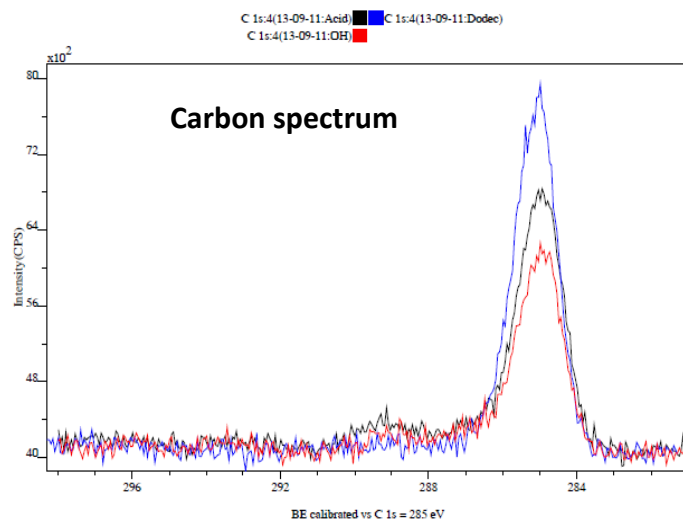


Figure S4: X-ray photoelectron spectroscopy of the chiral SAMs as prepared



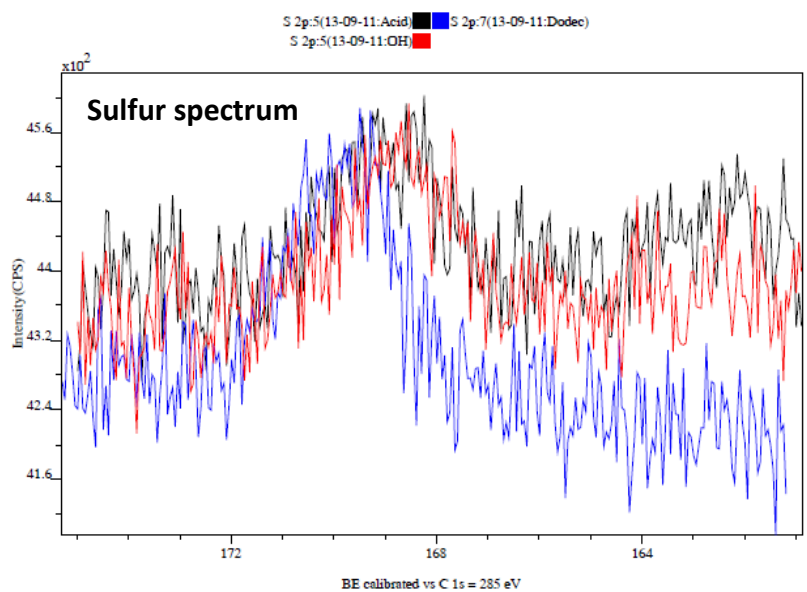
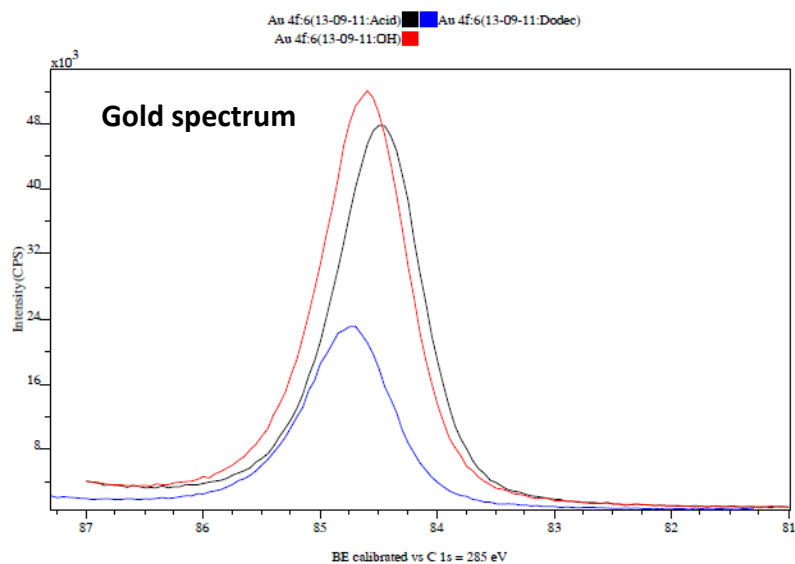
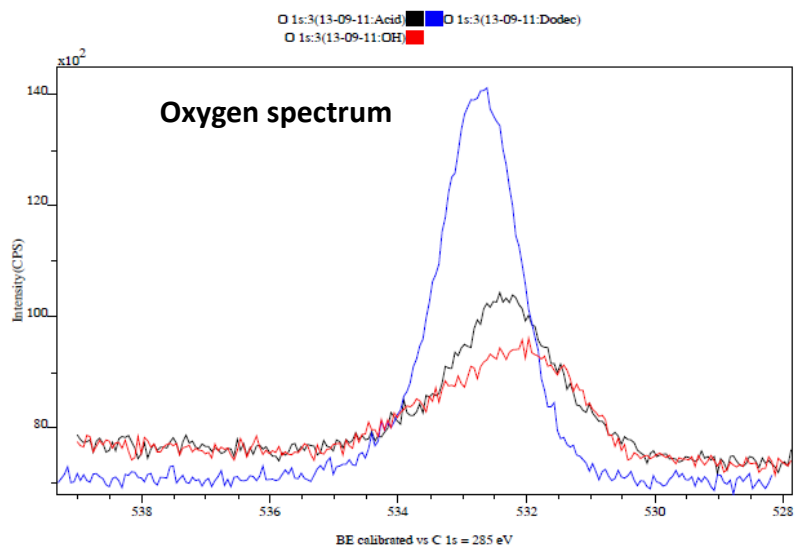
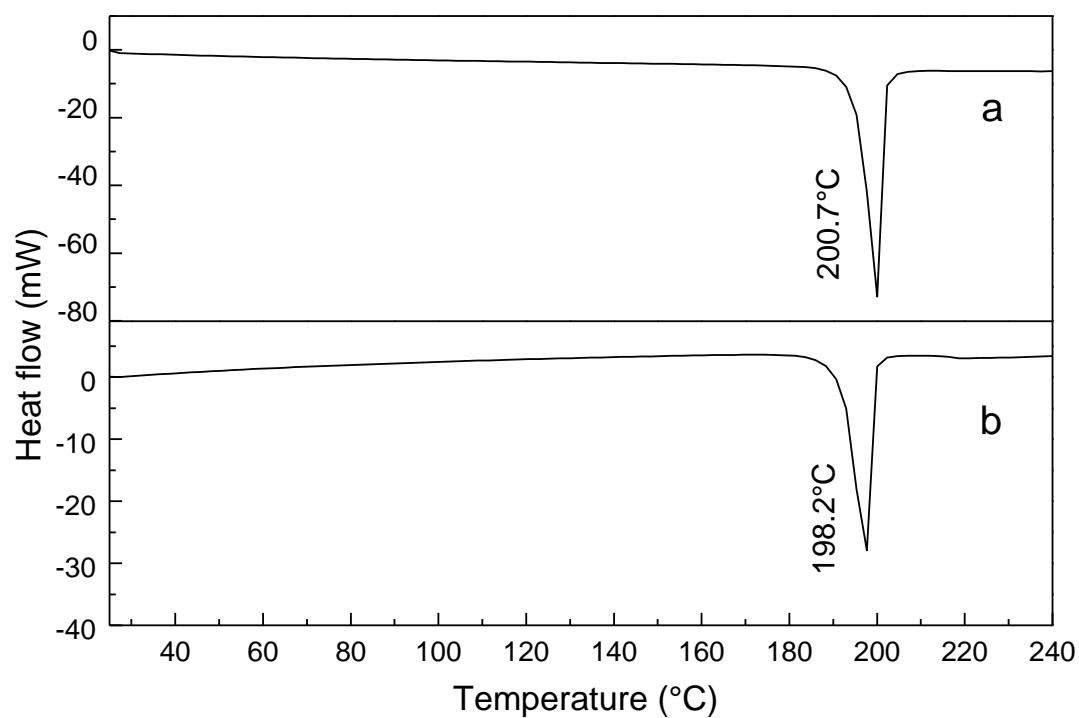
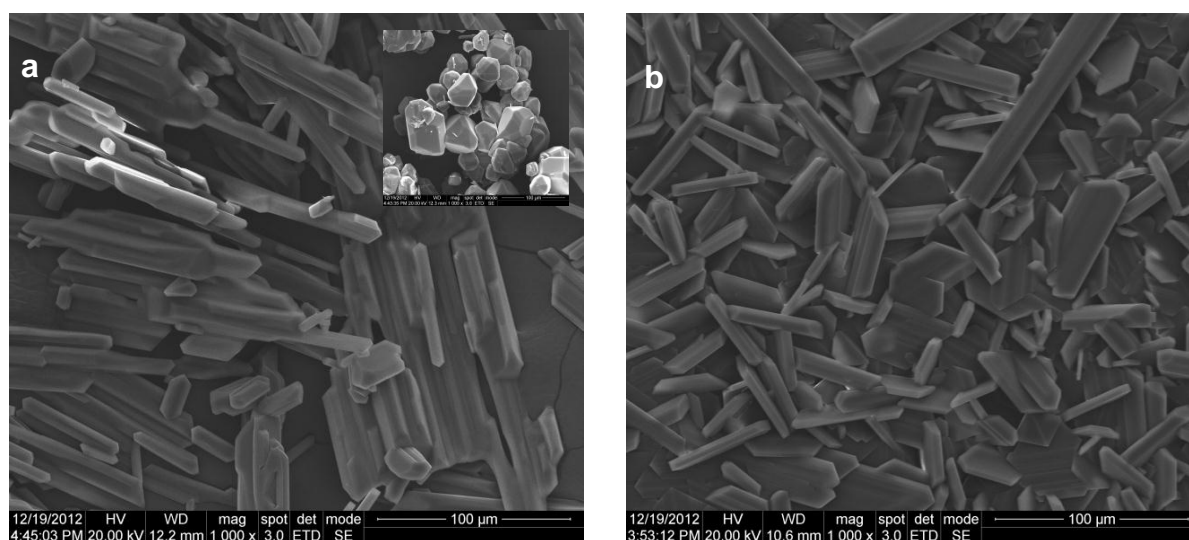


Figure S5: DSC spectra of L-glutamic acid crystals from the crystallization experiment



Crystals grown on (a) NDA surface (b) MUA surface.

Figure S6: SEM images of L-glutamic acid crystals from the final adsorption experiment



a. Crystals adsorbed on MUD surface

a. Crystals adsorbed on NDA surface

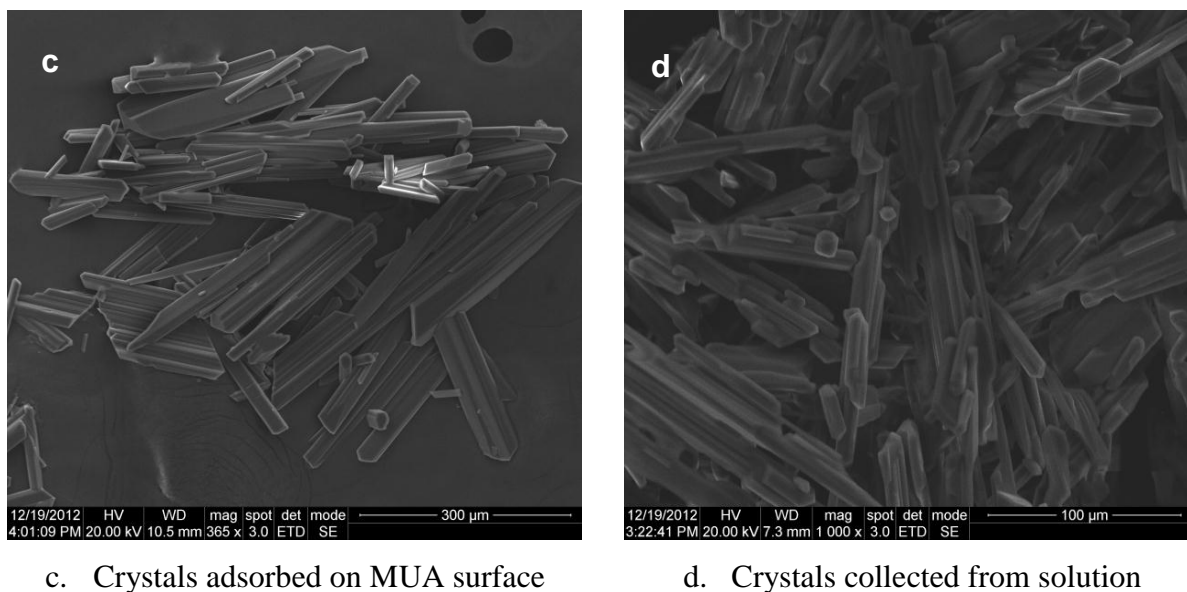
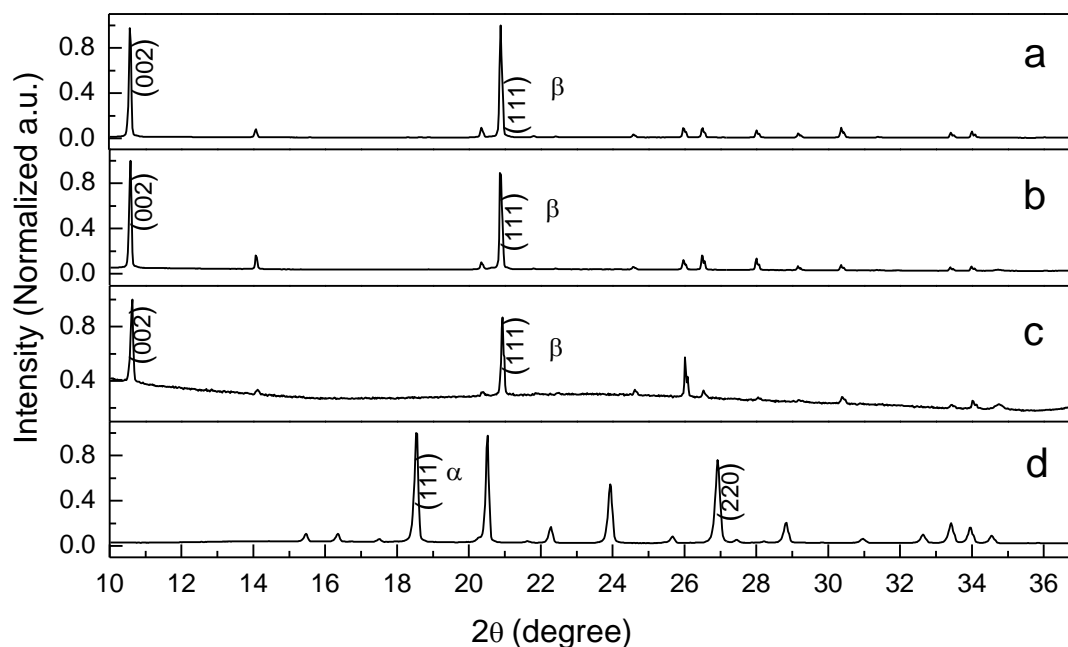


Figure S7: X-Ray Diffraction of L-glutamic acid crystals from the final adsorption experiment



X-ray diffraction of L-glutamic acid crystals adsorbed (a) on the surface of MUD (b) on the surface of NDA (c) on the surface of MUA (d) α -L-glutamic acid.