Support Information

Surface-Induced Heterogeneity Analysis of an Alkanethiol Monolayer on Microcrystalline Copper Surface Using Sum Frequency Generation Imaging Microscopy

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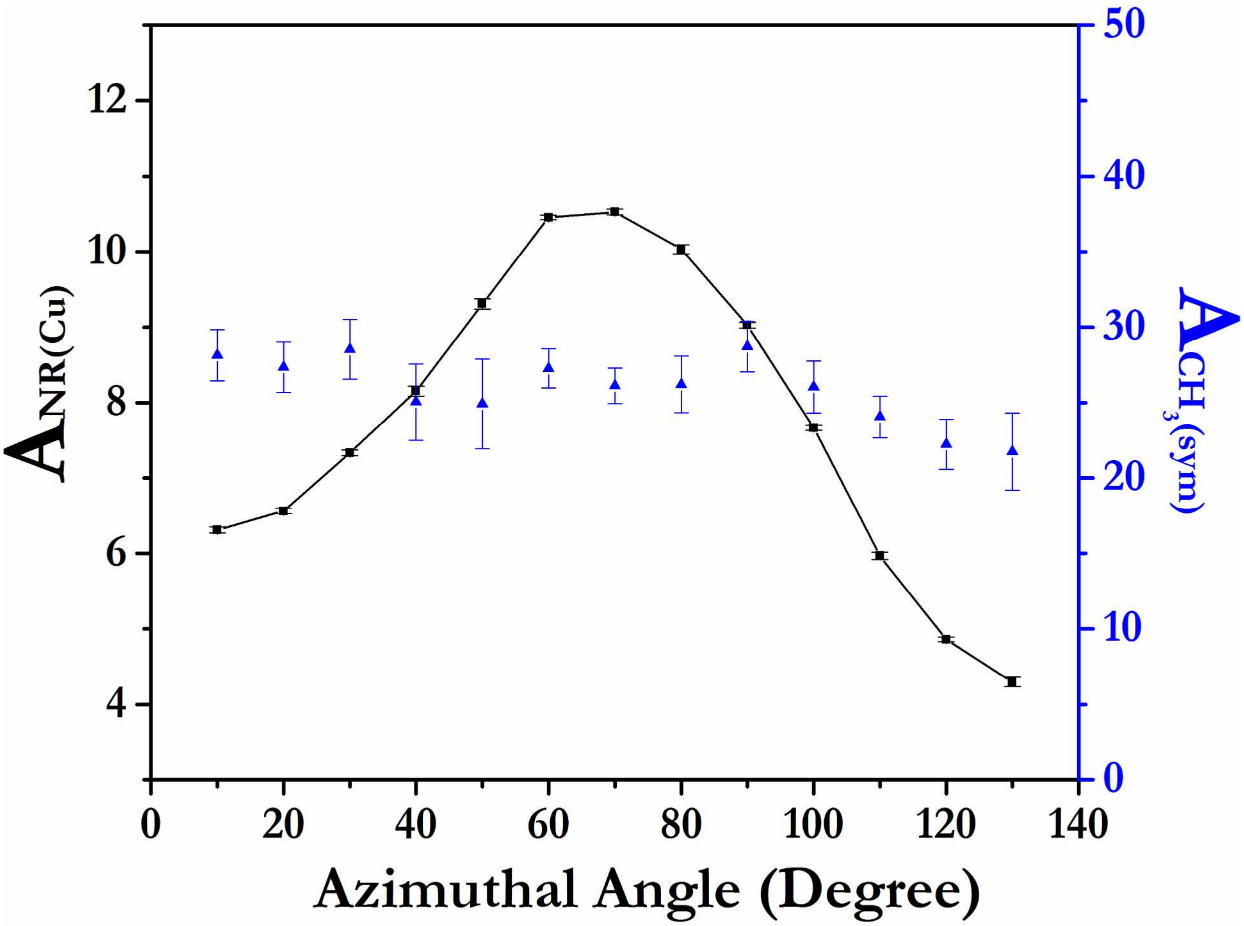

Figure S1. Nonlinear background and methyl symmetric stretching amplitude of ODT/Cu(111) for azimuthal angles varying from 10° to 130°. The step width is 10°.

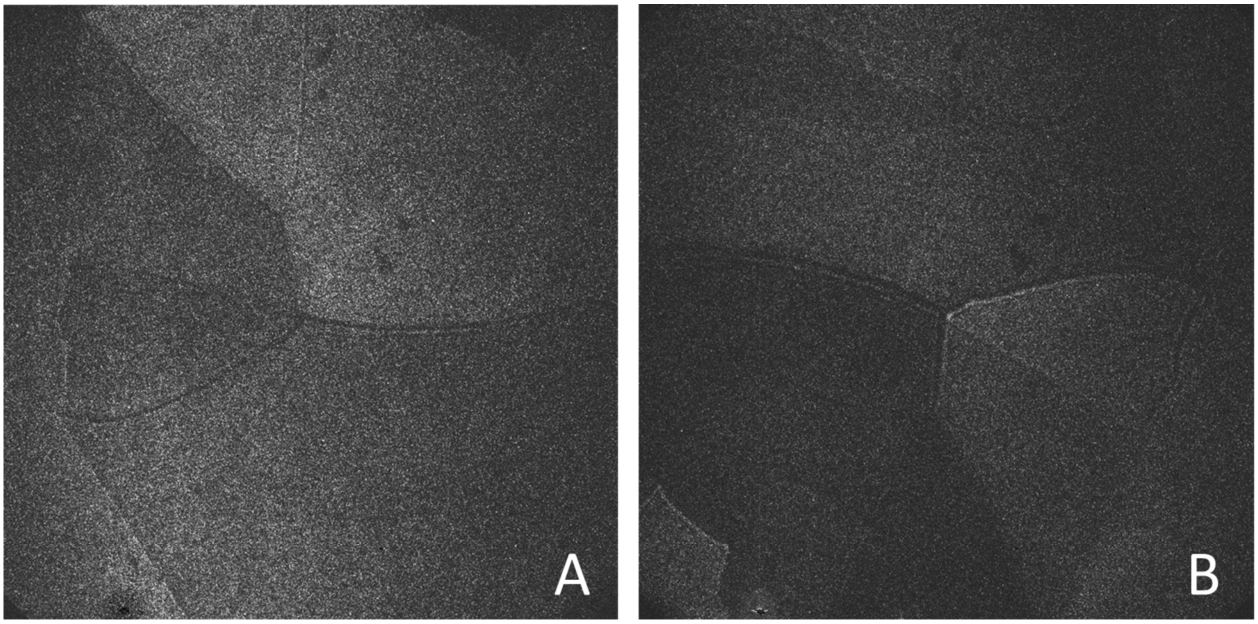

Figure S2. SFG image (2980 cm^{-1}) of the microcrystalline copper surface with ODT monolayer with azimuthal angle of 80°(A) and 240°(B), respectively.

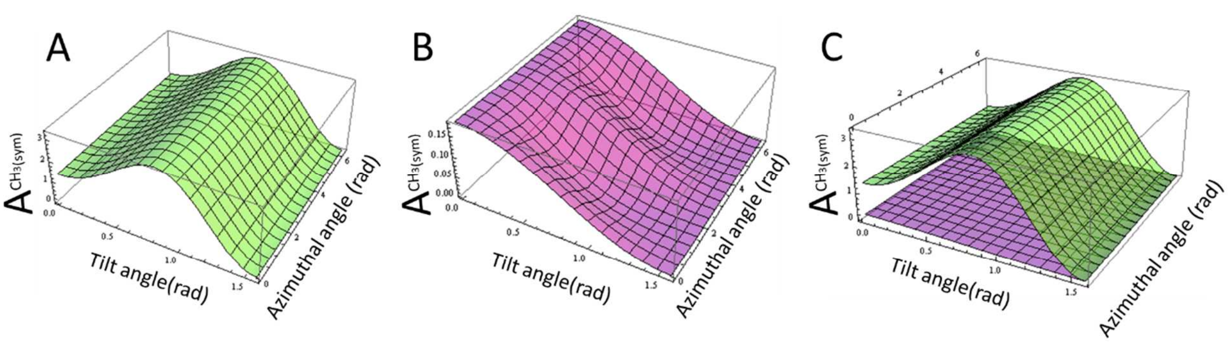

Figure S3. The simulation result of methyl symmetric stretching mode amplitude with tilt angle & azimuthal angle. A contributes from χ_{zzz} (green surface); B contributes from χ_{xxz} (purple surface); C contributes from χ_{zzz} (green surface) and χ_{xxz} (purple surface).

Table S1. Fitting result for Figure 5.

	Domain C (80°)	Domain C (140°)	Domain D (80°)	Domain D (140°)
A_{NR}	12.08	7.45	11.6	13.4
ϕ_{NR}	1.75	1.95	2.55	2.25

A_{q1}	1.68×10^{-11}	2	2	2
ω_{q1}	2855	2848	2855.6	2856
Γ_{q1}	17.8	7.3	2.5	3.16
A_{q2}	22.32	28.94	28.85	19.9
ω_{q2}	2876	2879	2872	2872
Γ_{q2}	3.14	9.64	9.0	7.99
A_{q3}	22.08	71.83	24.96	21.46
ω_{q3}	2915	2915	2910	2911
Γ_{q3}	15.6	20	15.9	14.0
A_{q4}	32.09	115.4	37.25	34.60
ω_{q4}	2938	2934	2933	2932
Γ_{q4}	9.12	10.8	12.4	11.33
A_{q5}	113.5	135.5	96.4	58.25
ω_{q5}	2965	2967	2962	2965
Γ_{q5}	8.78	25.0	10.0	8.54
A_{q6}	-119.3	-124.7	-119.7	-66.8
ω_{q6}	2965	2969	2962	2967
Γ_{q6}	13.5	18.9	15.1	12.35

Calculation about the Fresnel factor of F_{xxz} and F_{zzz}

```
β=62.1Degree;
β1=60 Degree;
β2=70 Degree;
```

```
nc=0.20861+5.0881™;
nc1=0.37861+7.0658™;
nc2=1.7671+22.685™;
γ=ArcSin[(Sin[β]/nc)];
γ1=ArcSin[(Sin[β1]/nc1)];
γ2=ArcSin[(Sin[β2]/nc2)];
```