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Supporting Information

Water-triggered spontaneous surface patterning in thin films of mexylaminotriazine molecular glasses

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Contents

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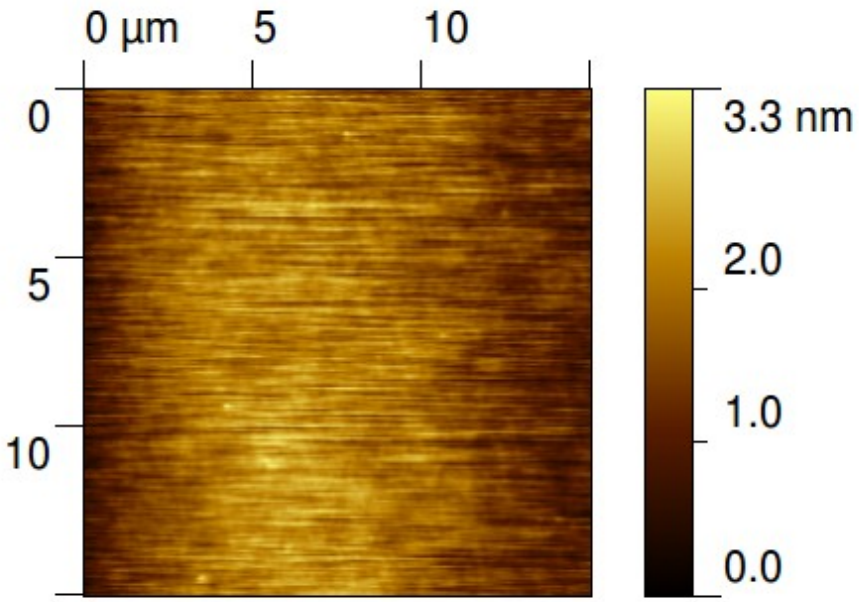
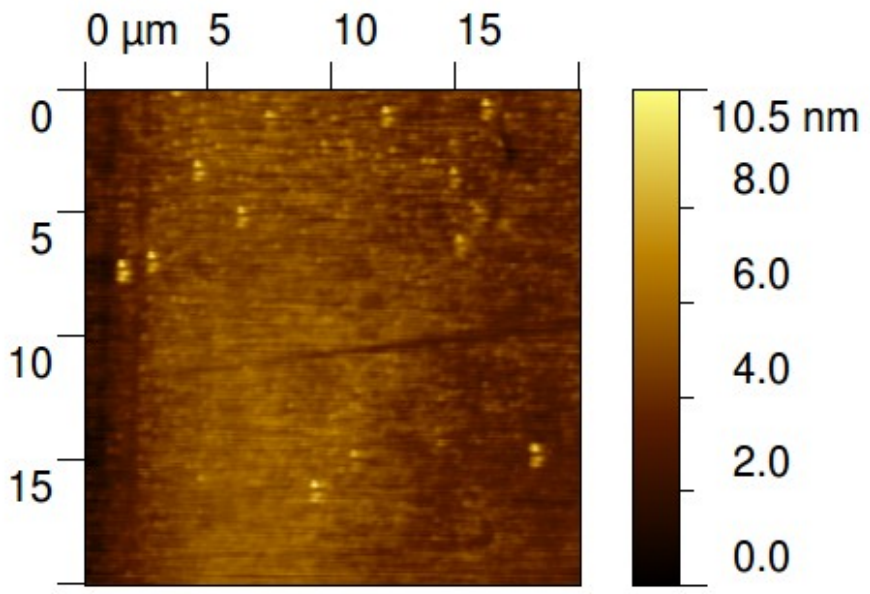
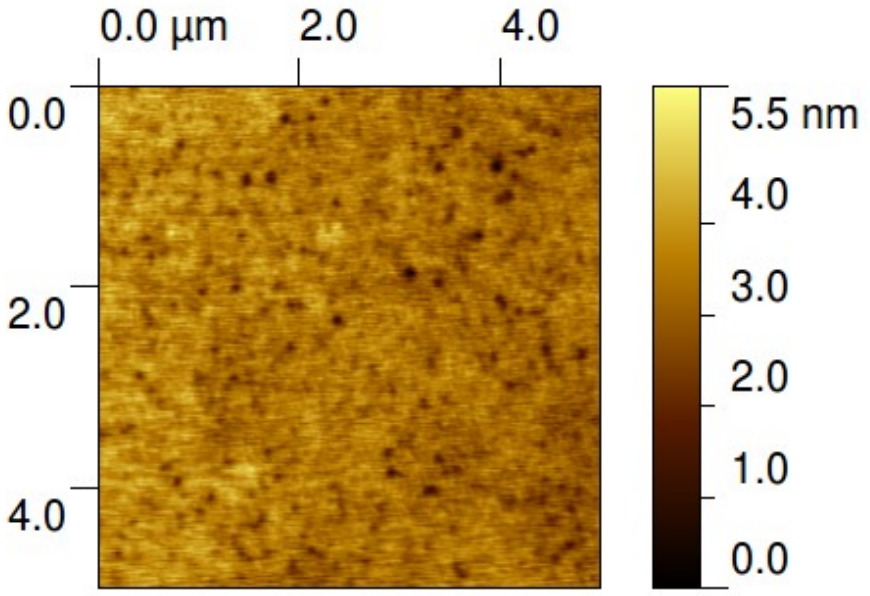
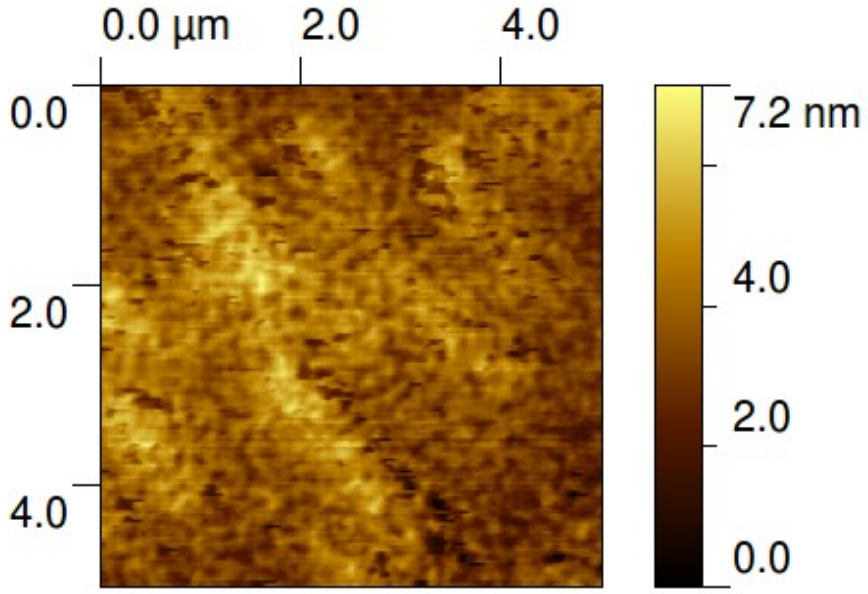
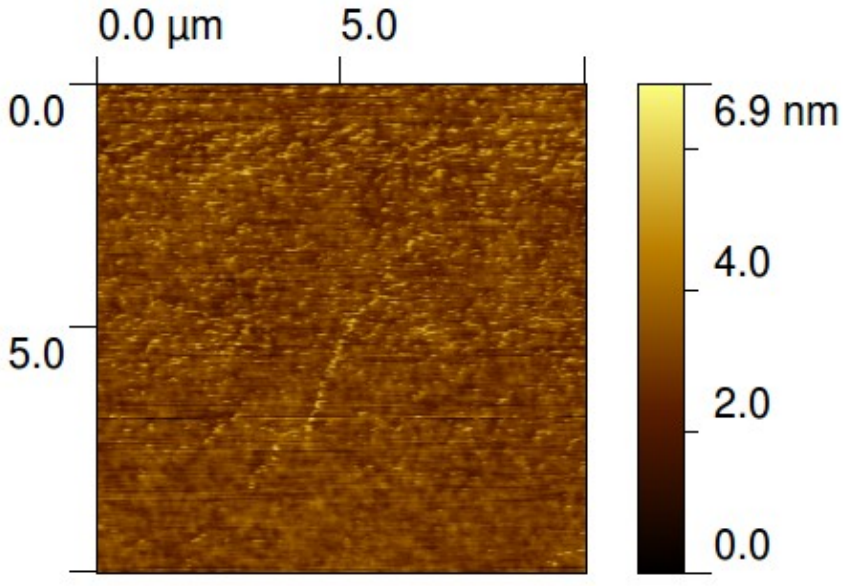
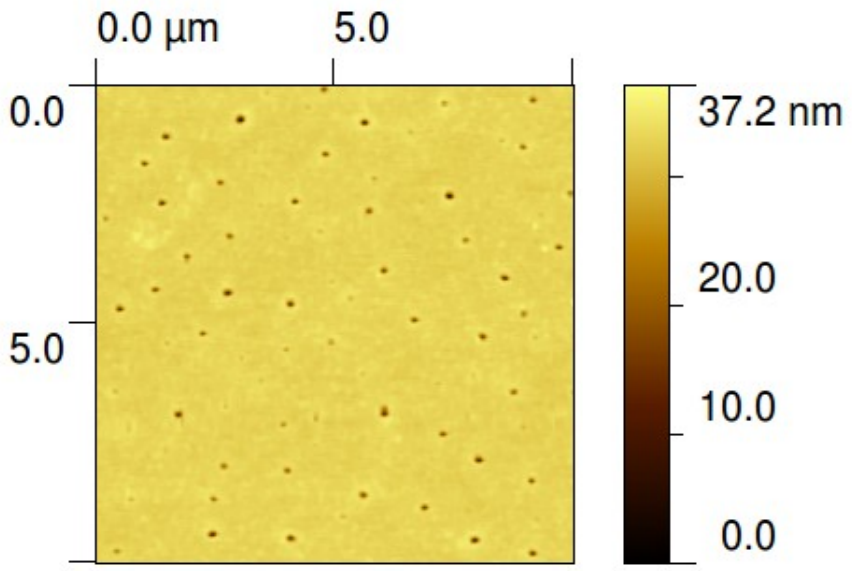
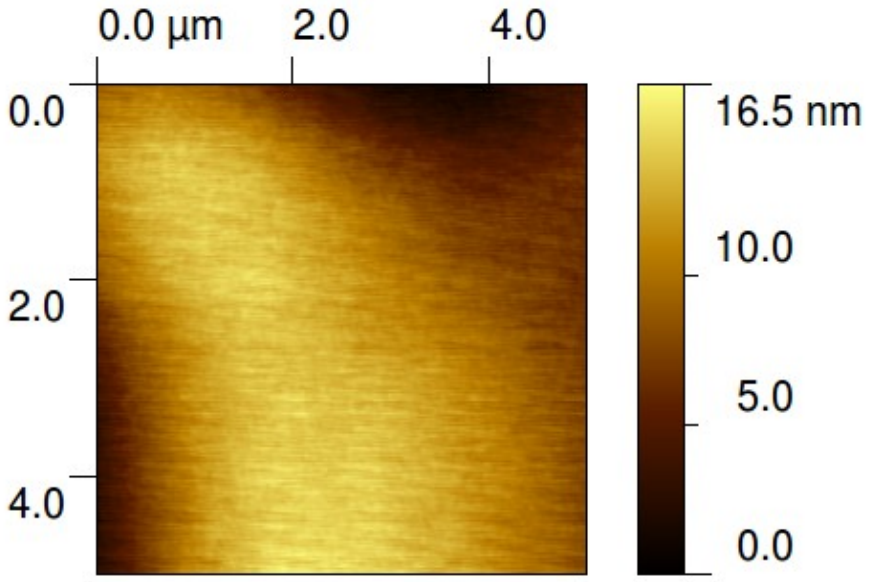
I. Atomic Force Microscopy images for films of compounds 1-4 cast under various conditions

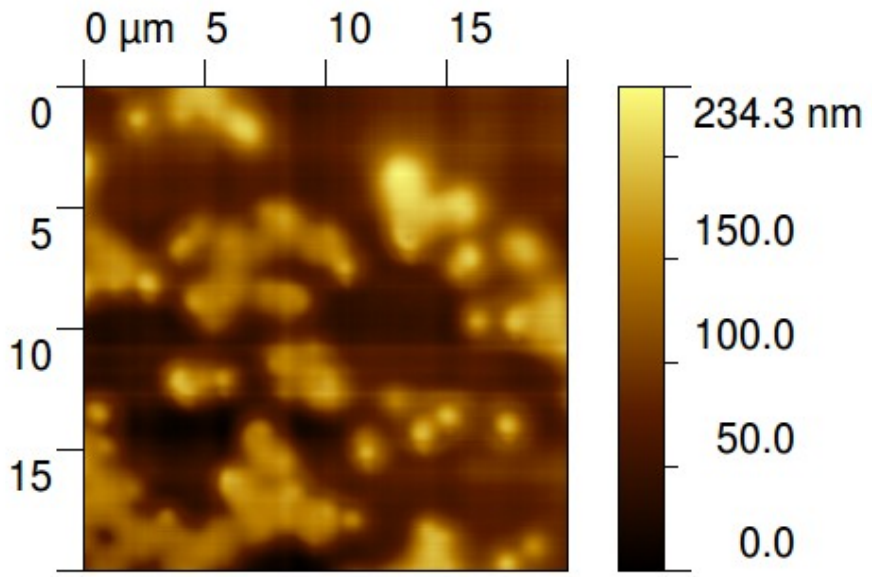
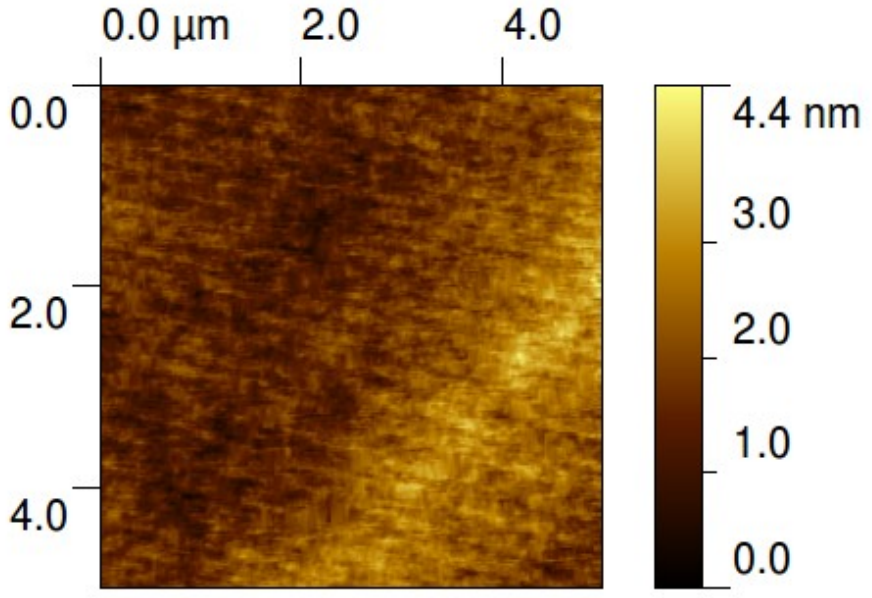
Figure S1. AFM images of compound **1** cast from various solvents as 0.02M solutions on untreated glass substrates or glass substrates silanized with phenyltrichlorosilane (hydrophobic).

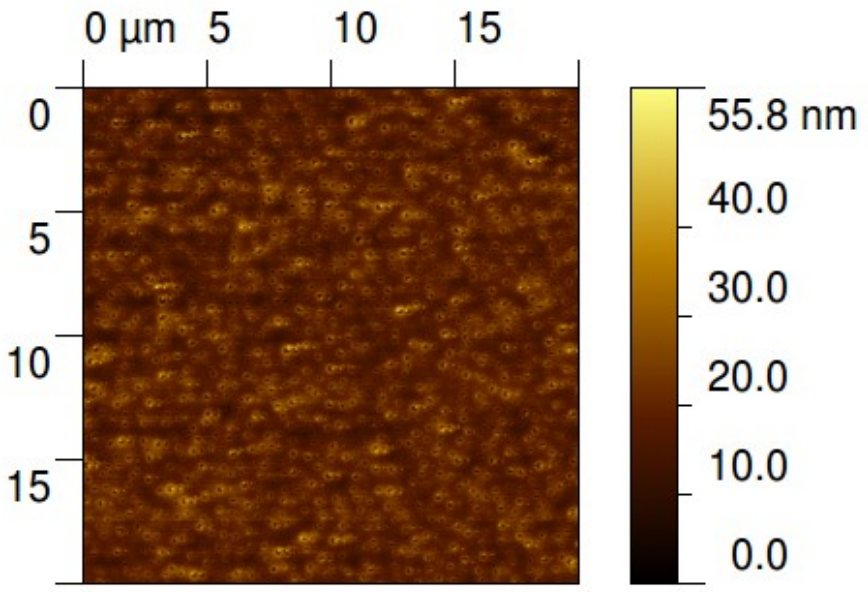
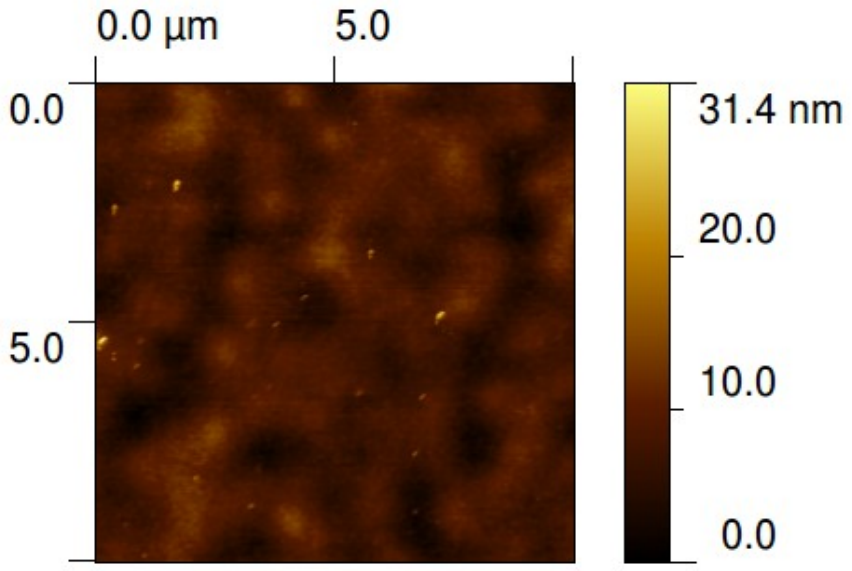
Toluene	

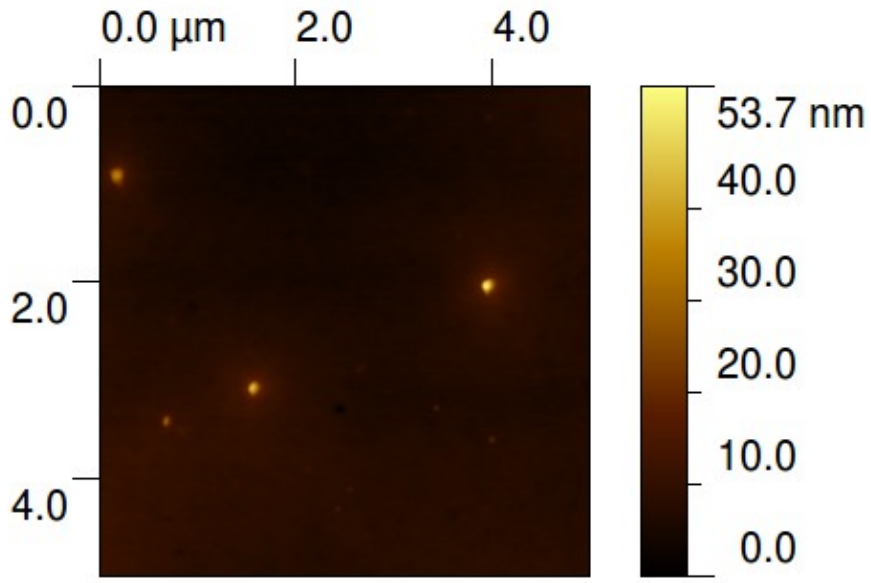
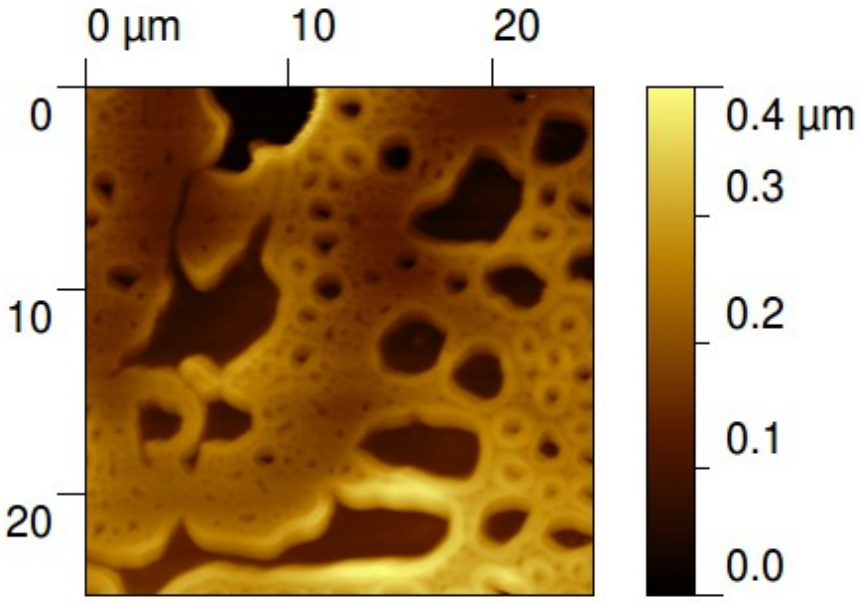
Toluene (hydrophobic)	
Chlorobenzene	

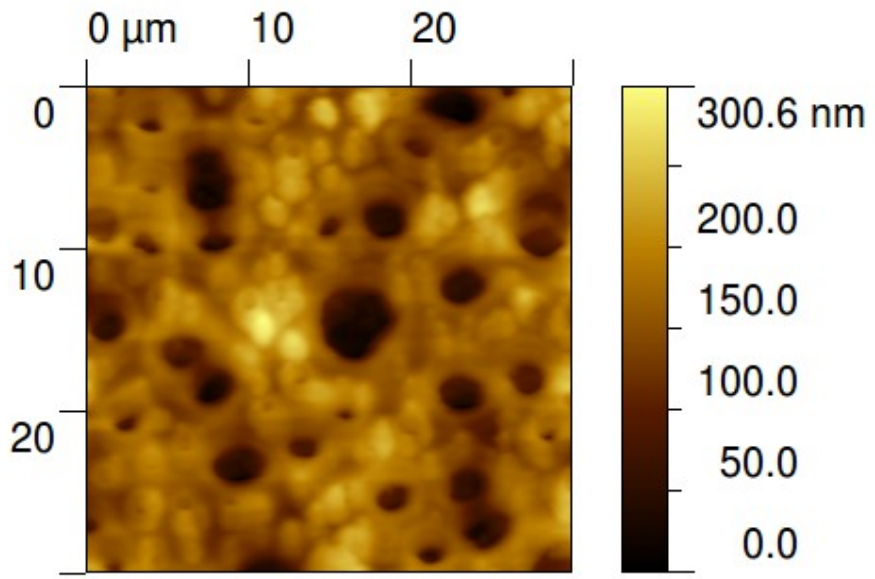
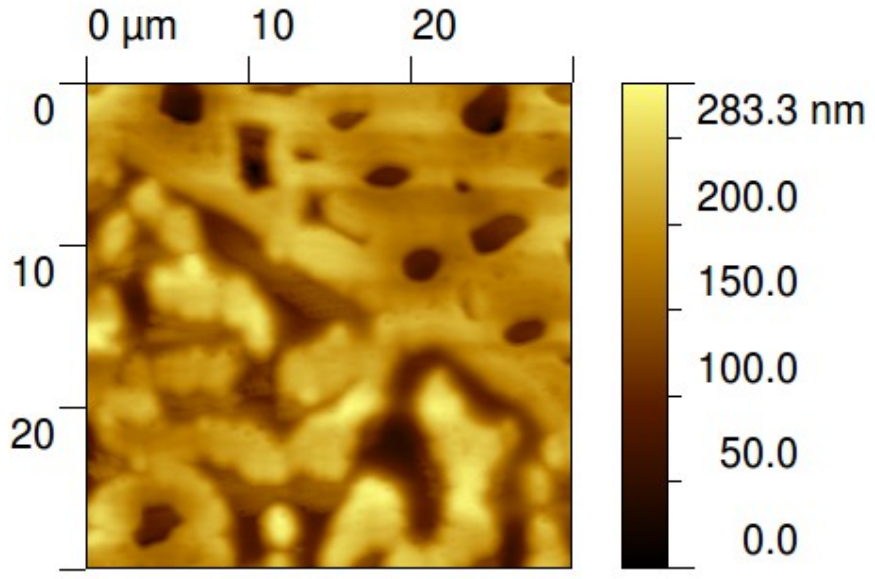
Dichloromethane - dry	
Dichloromethane – dry (hydrophobic)	

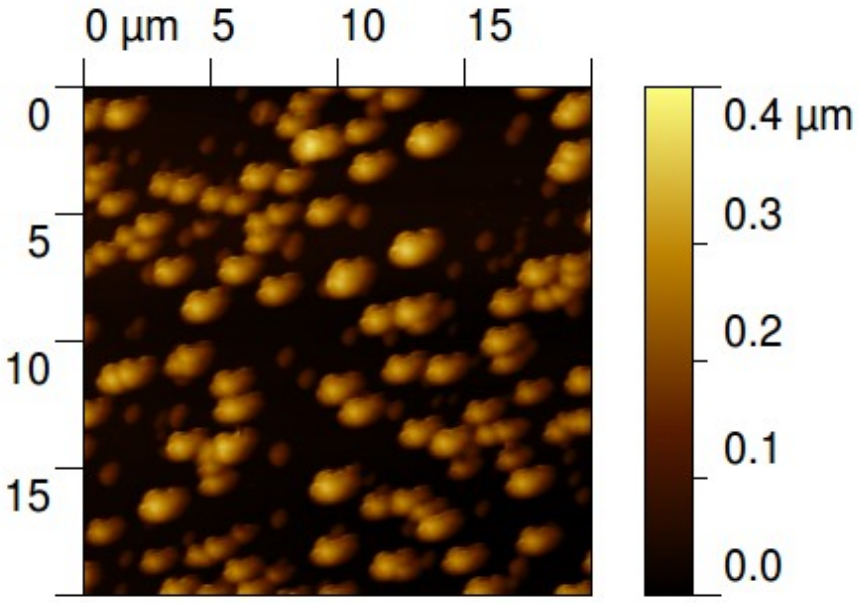
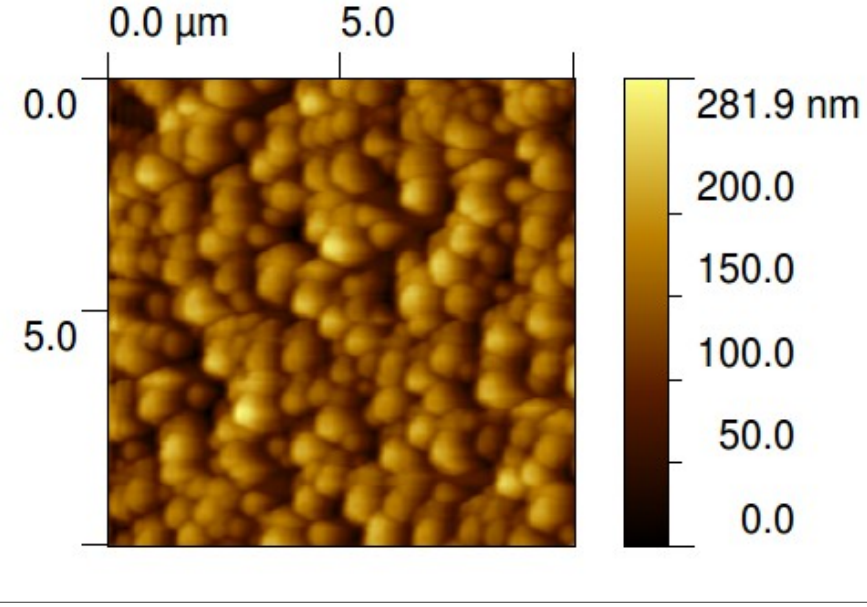
Dichloromethane - saturated	
Ethyl Ether - dry	

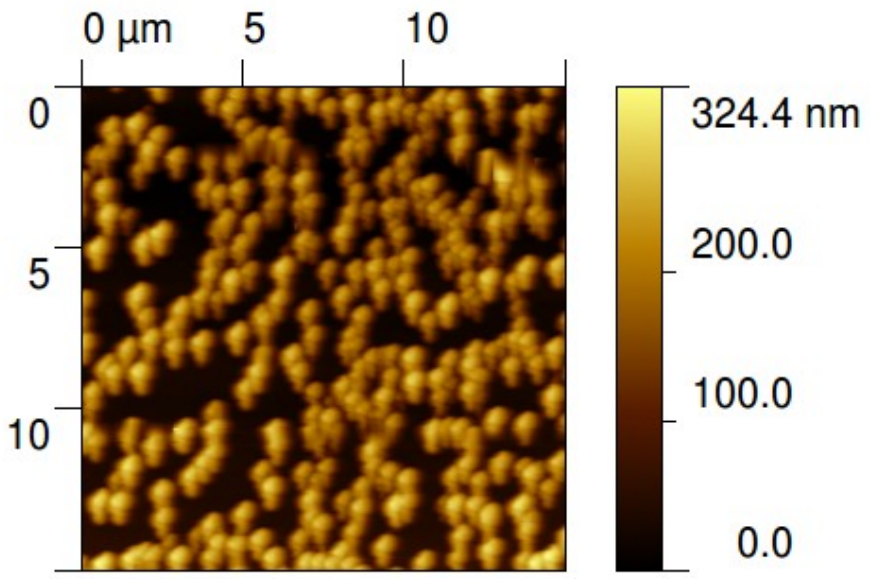
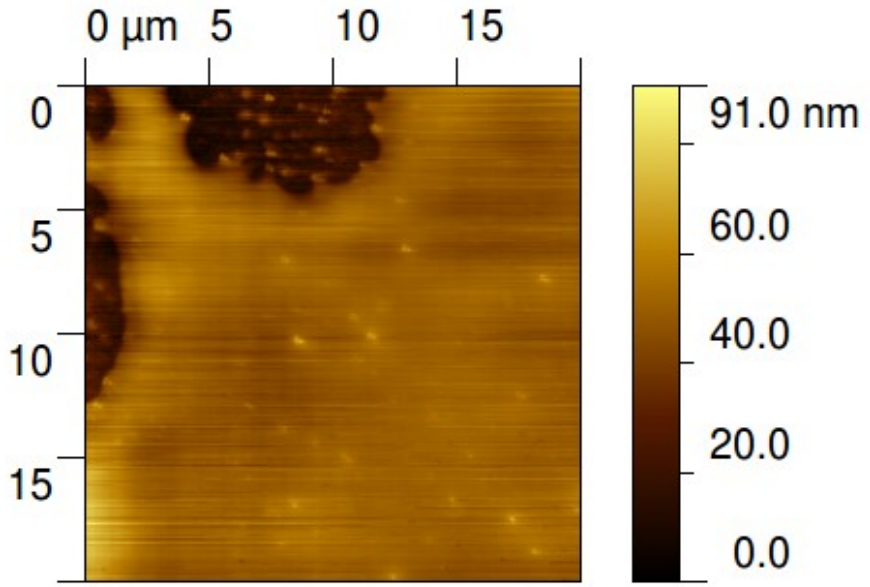
Ethyl Ether - saturated	
Ethyl Acetate - dry	

Ethyl Acetate - saturated	
1-Butanol - dry	

1-Butanol - saturated	
THF	

Acetone	
Acetone (hydrophobic)	

Acetonitrile	
Ethanol	

Ethanol (hydrophobic)	
Dioxane	

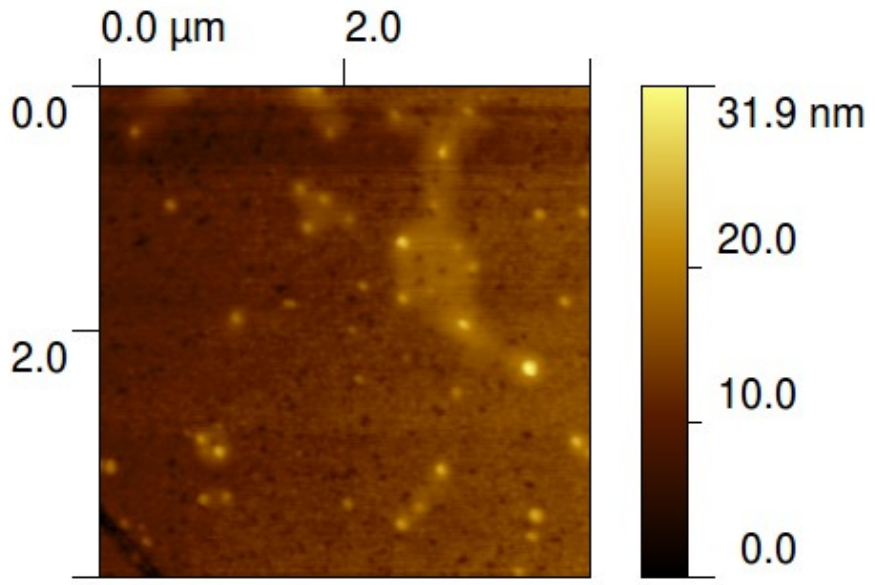
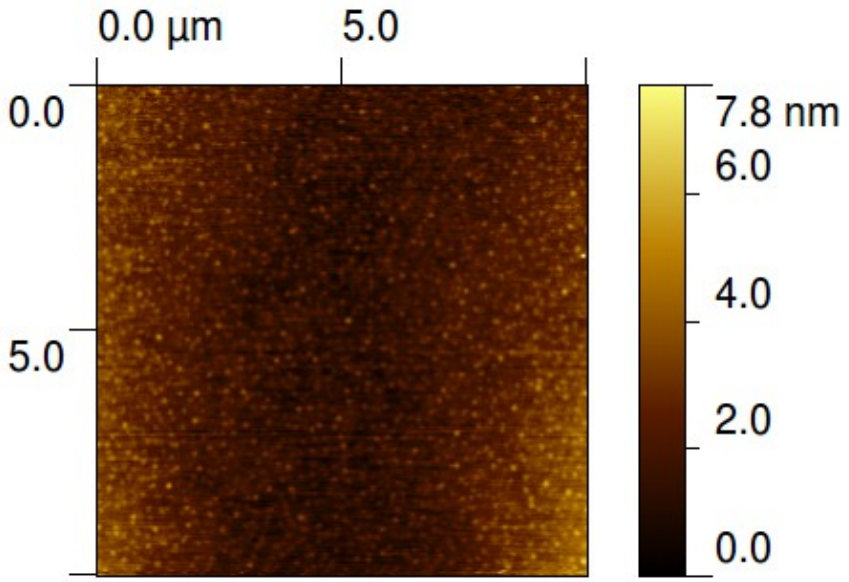
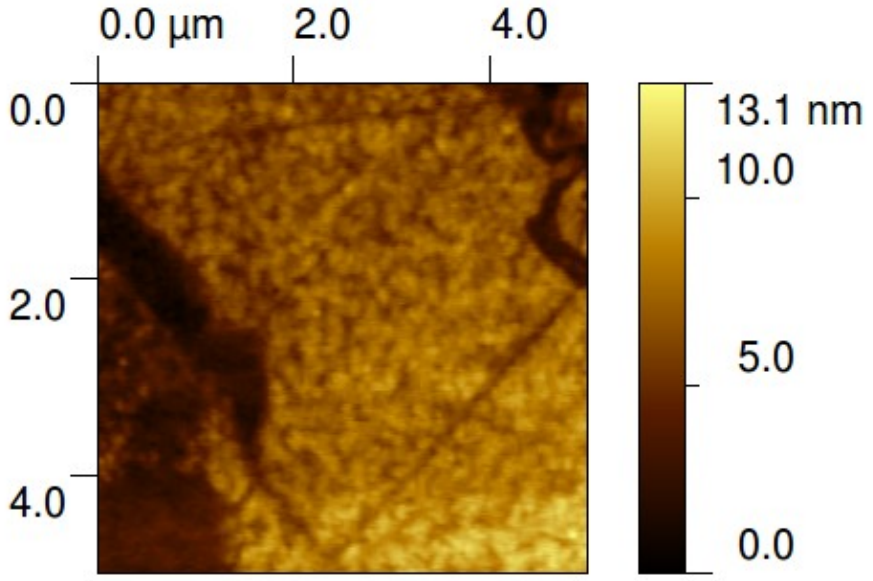
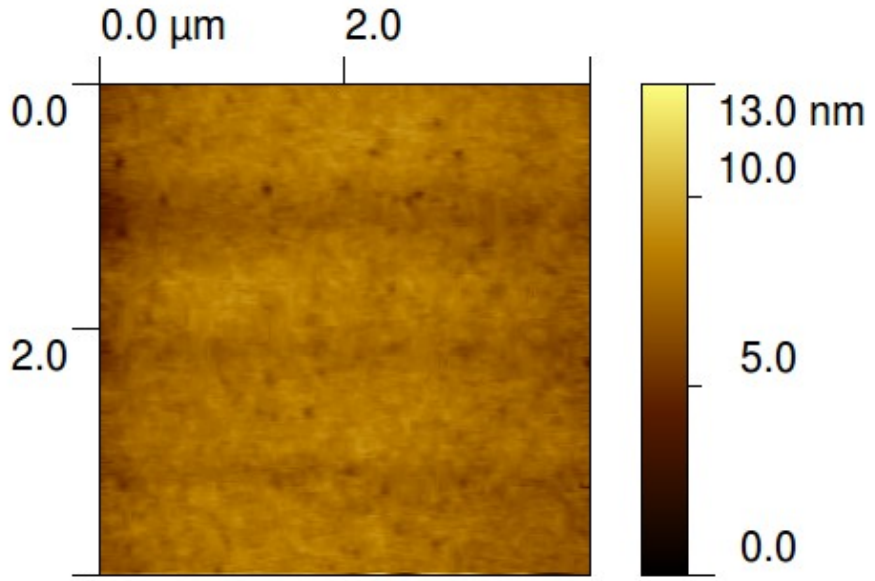
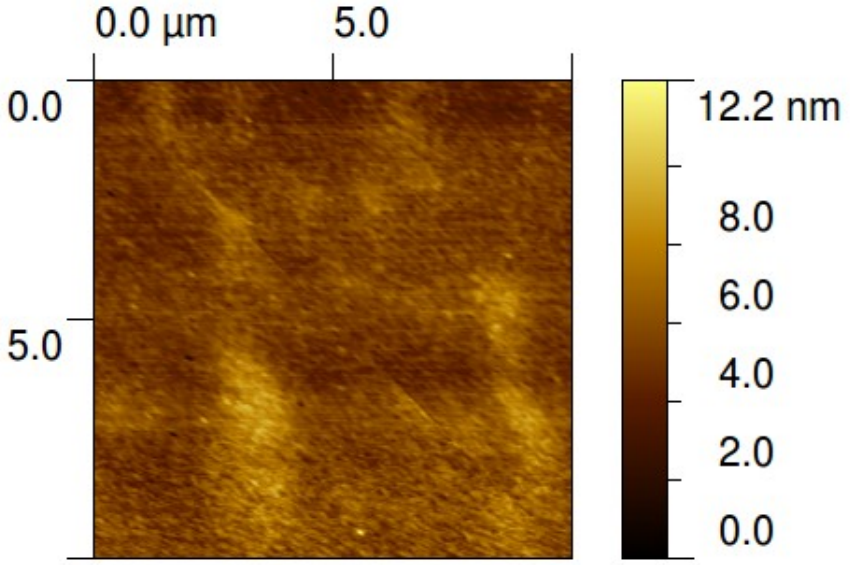
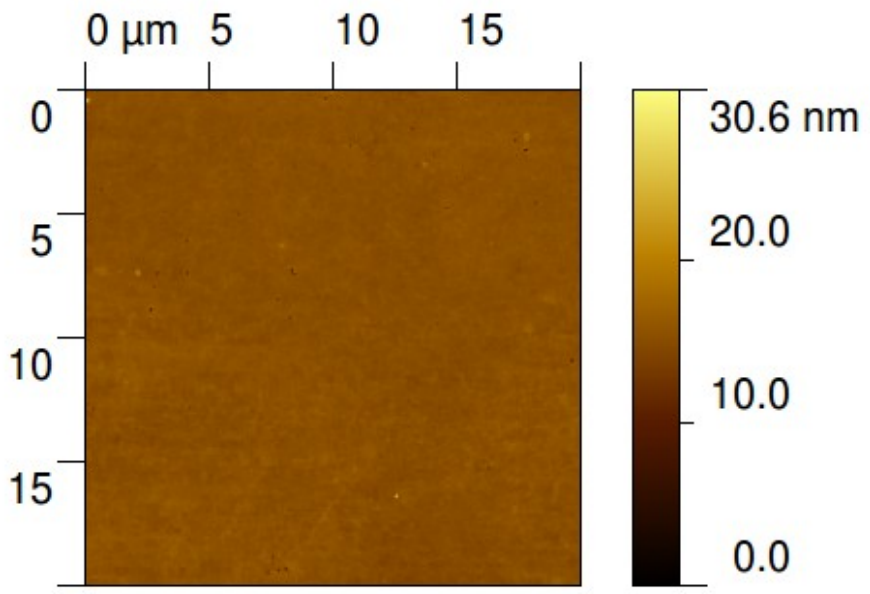
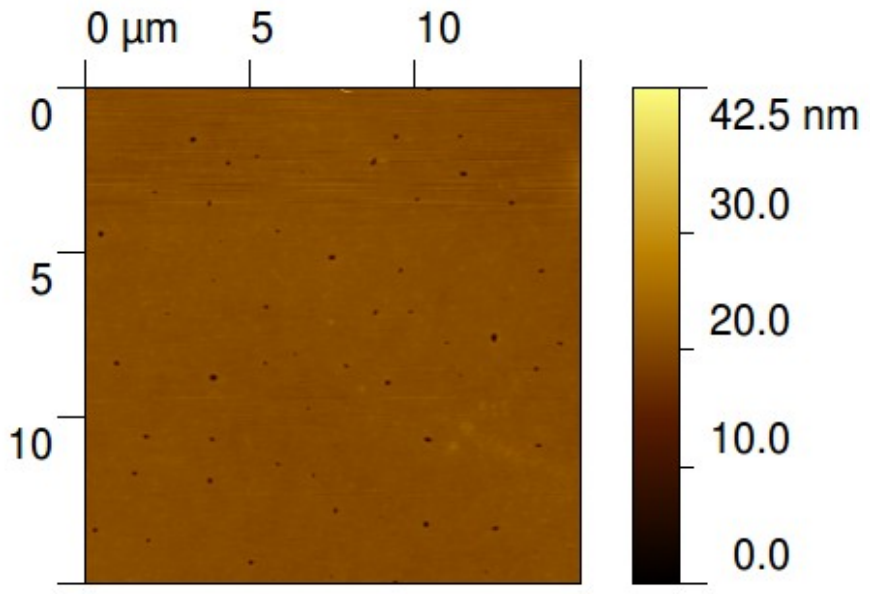
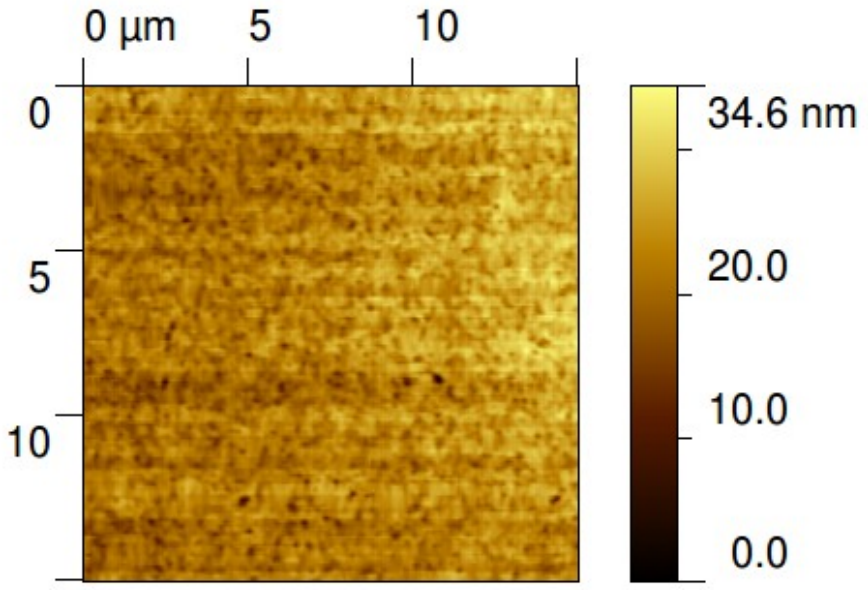
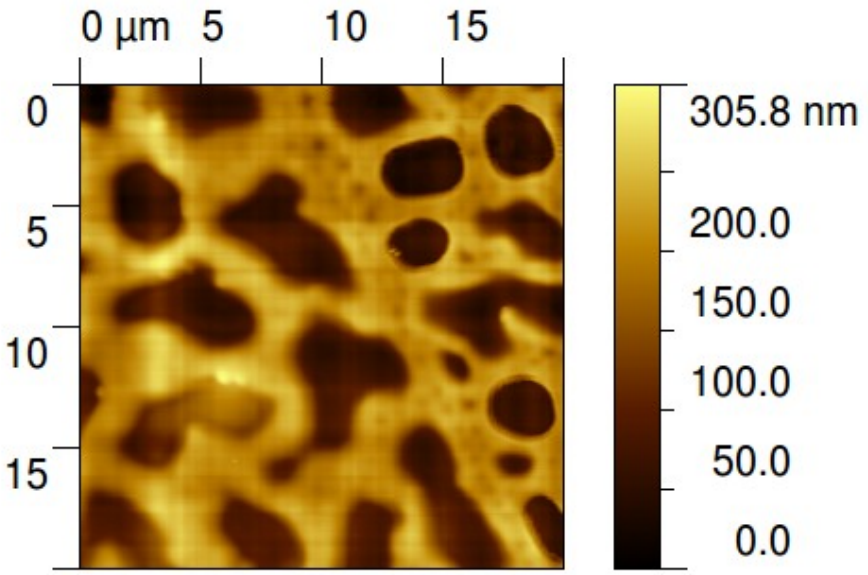
DMF	

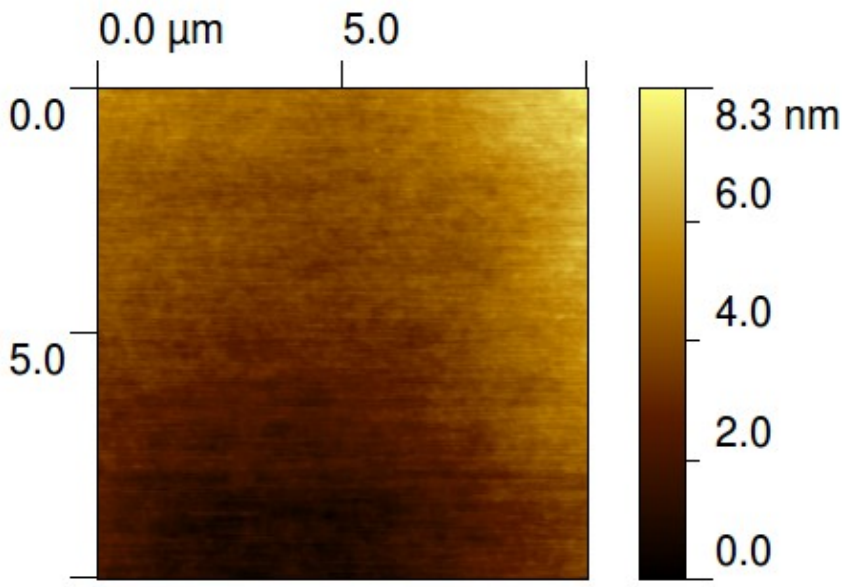
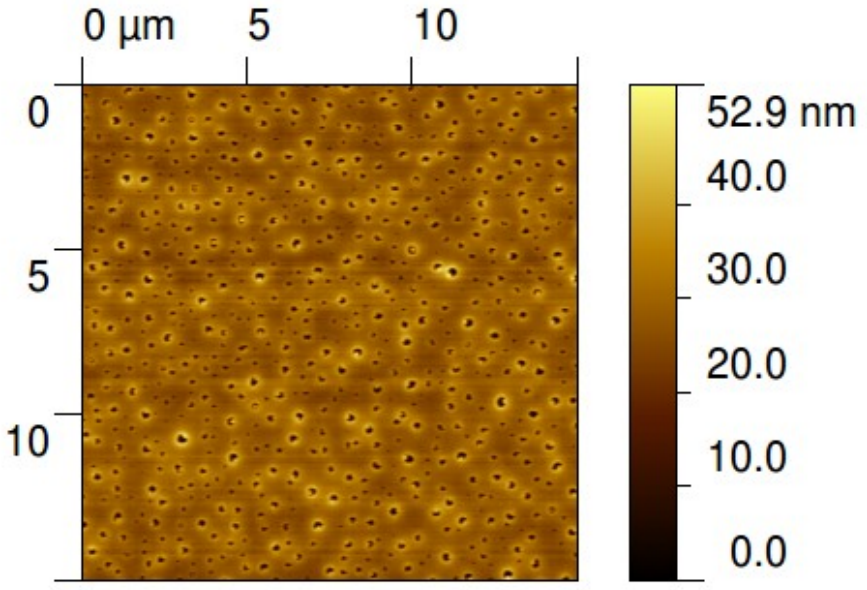
Figure S2. AFM images of compound **2** cast from various solvents as 0.02M solutions on untreated glass substrates or glass substrates silanized with phenyltrichlorosilane (hydrophobic).

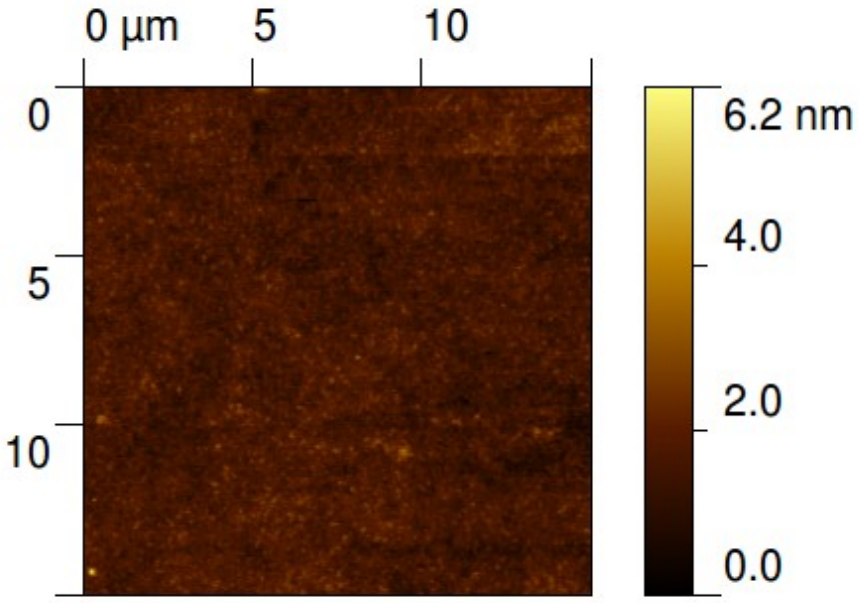
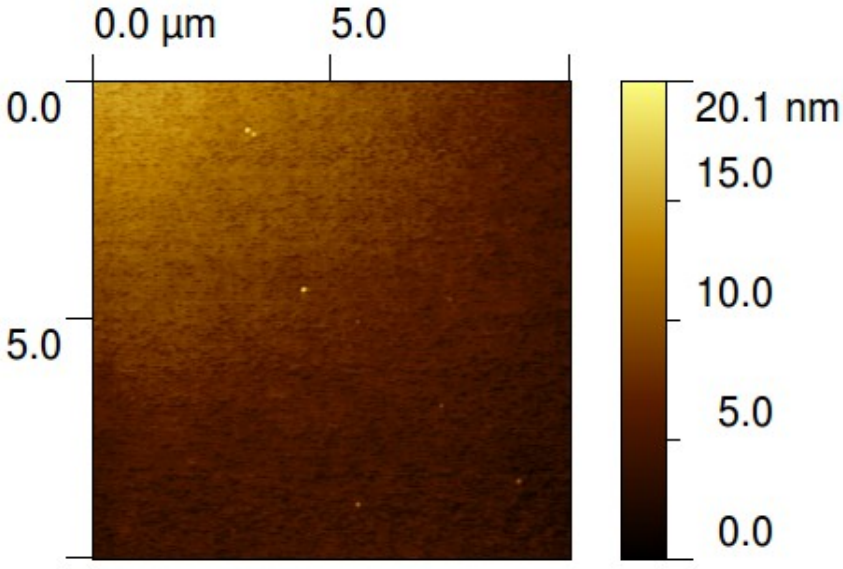
Toluene	
Toluene (hydrophobic)	

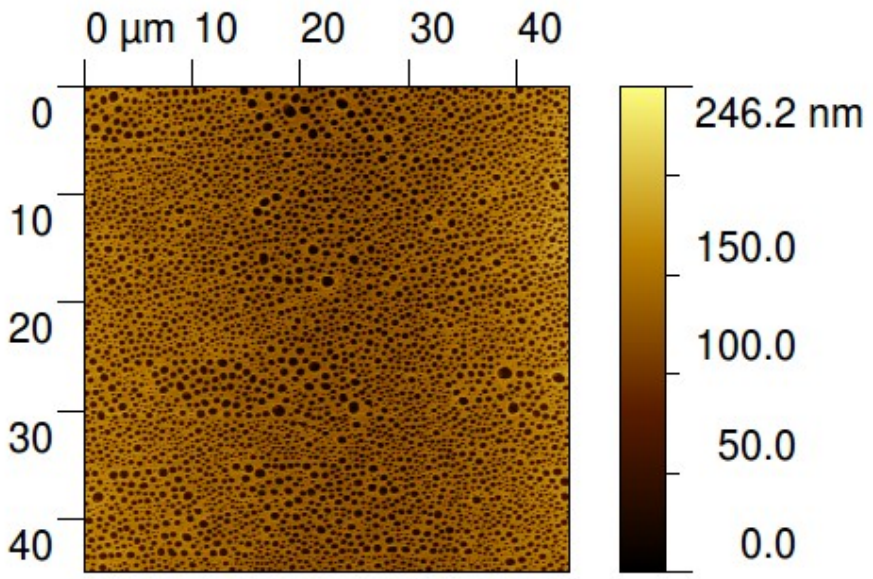
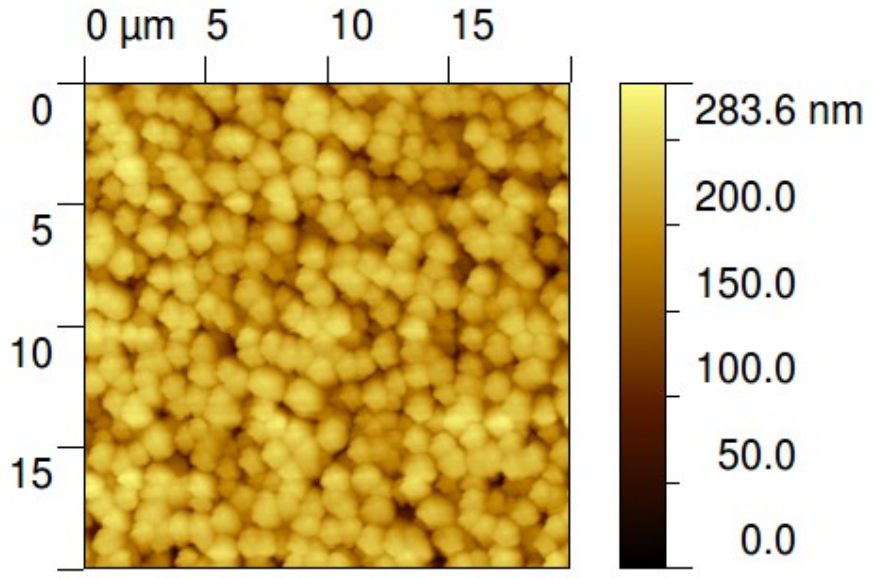
Chlorobenzene	
Dichloromethane - dry	

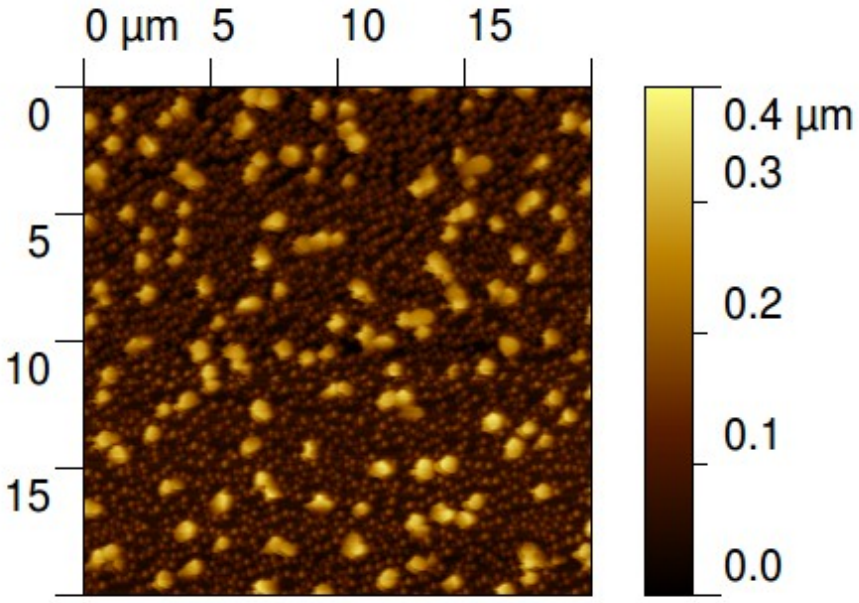
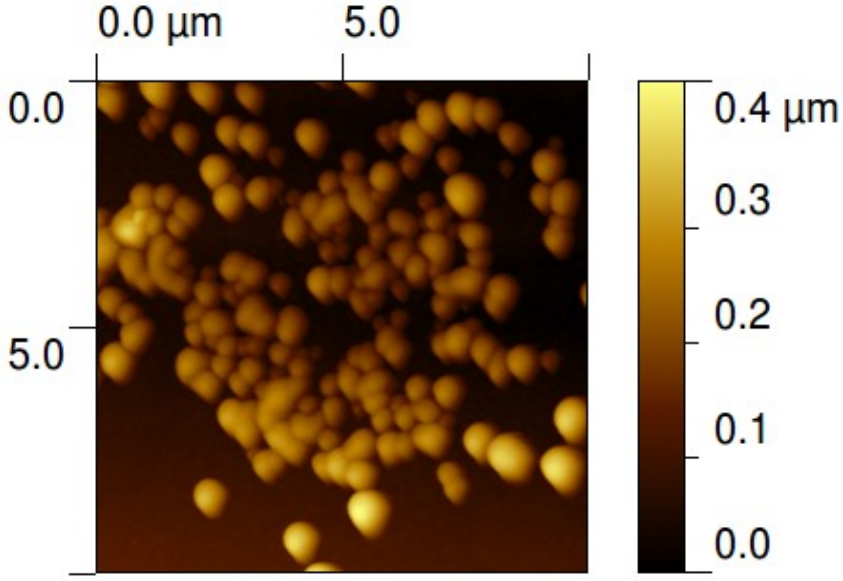
Dichloromethane – dry (hydrophobic)	
Dichloromethane - saturated	

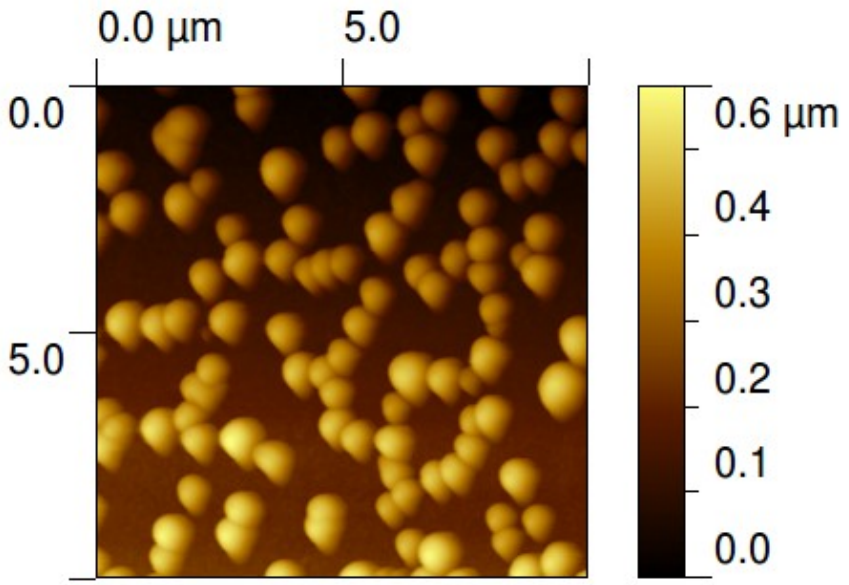
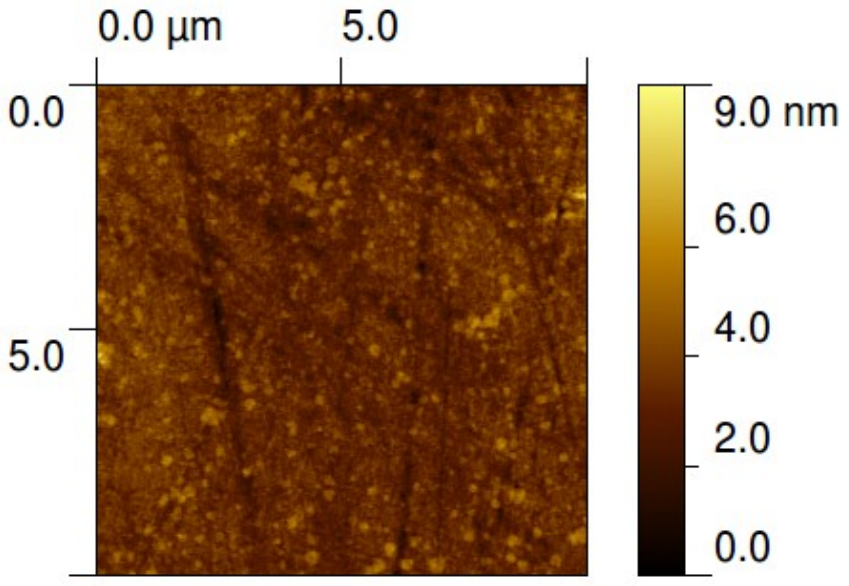
Ethyl Ether - dry	
Ethyl Ether - saturated	

Ethyl Acetate - dry	
Ethyl Acetate - saturated	

1-Butanol - dry	
1-Butanol - saturated	

THF	 0 µm 10 20 30 40 0 10 20 30 40 246.2 nm 150.0 100.0 50.0 0.0
Acetone	 0 µm 5 10 15 0 5 10 15 283.6 nm 200.0 150.0 100.0 50.0 0.0

Acetone (hydrophobic)	
Acetonitrile	

Ethanol	
Dioxane	

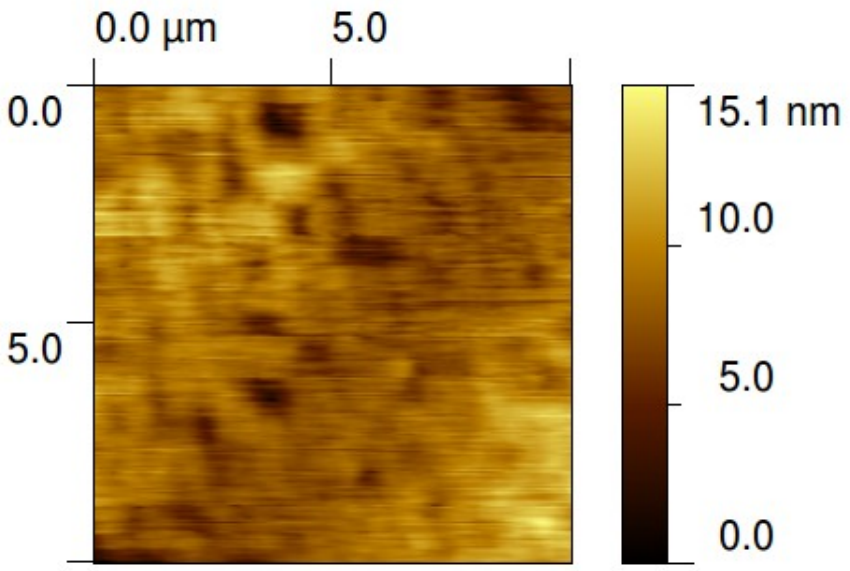
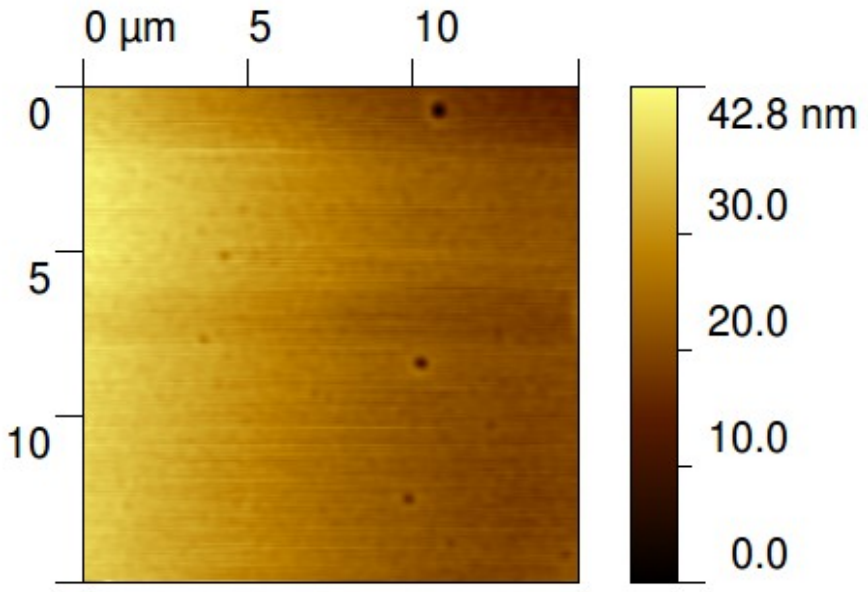
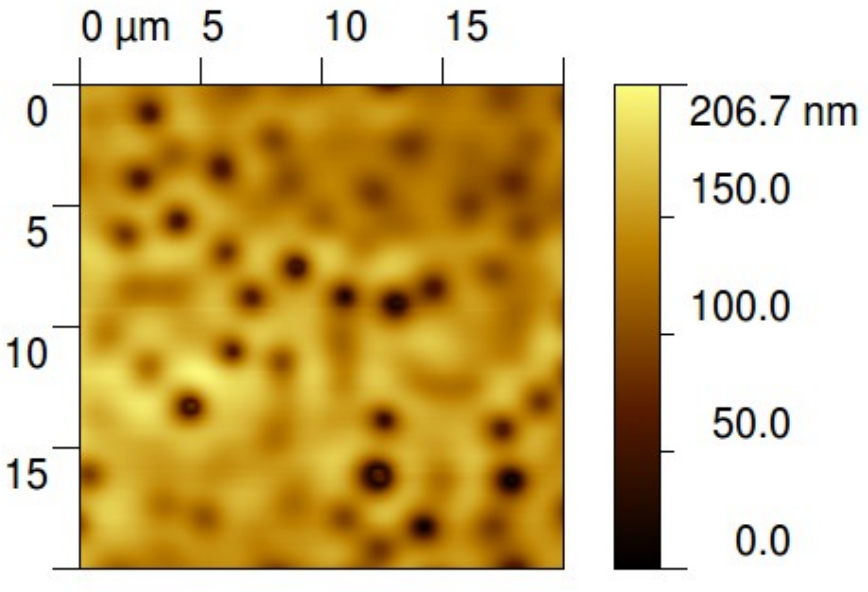
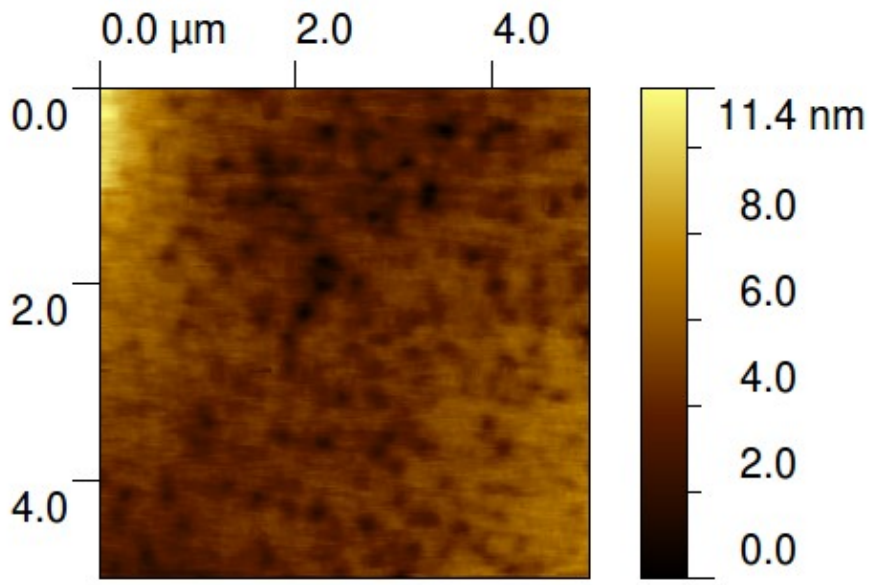
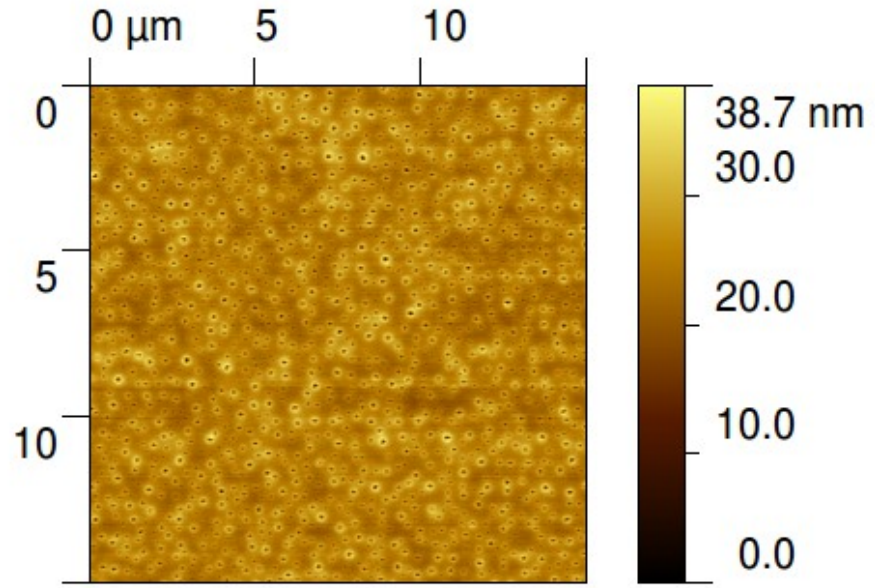
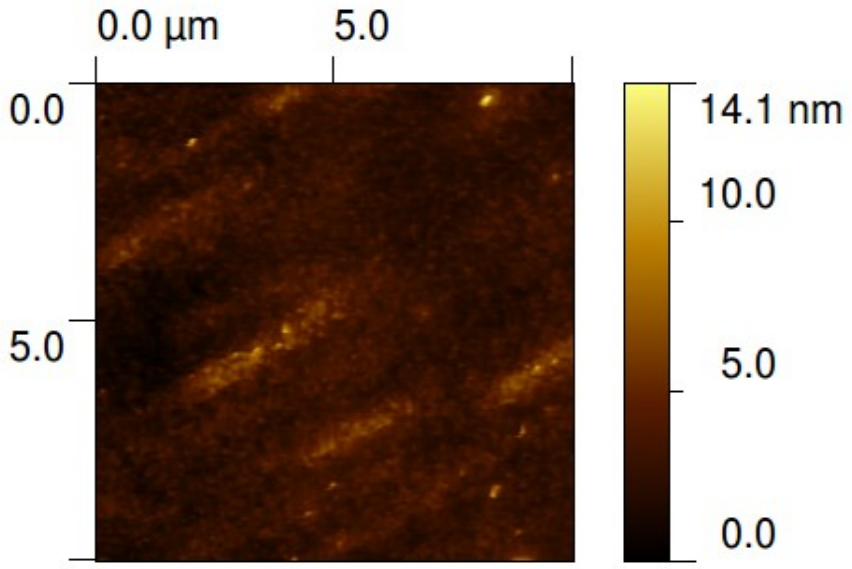
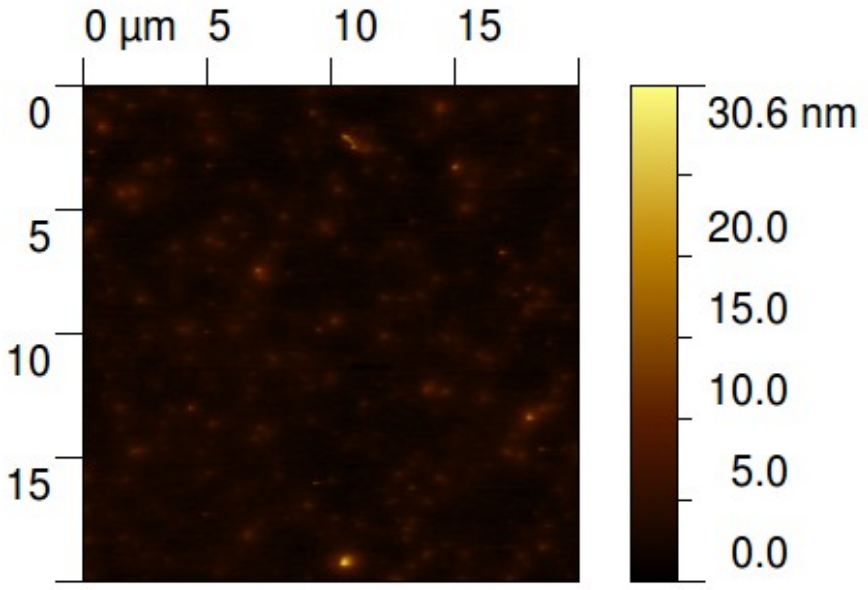
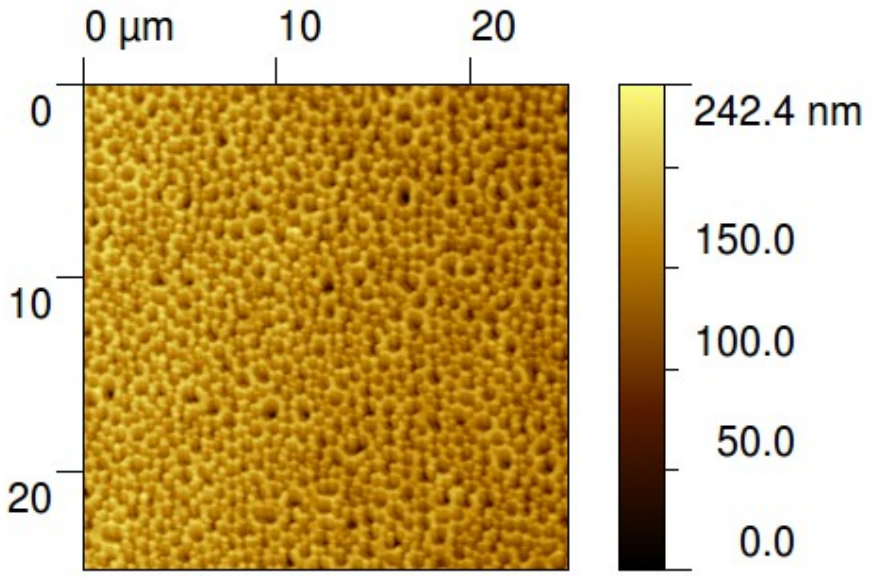
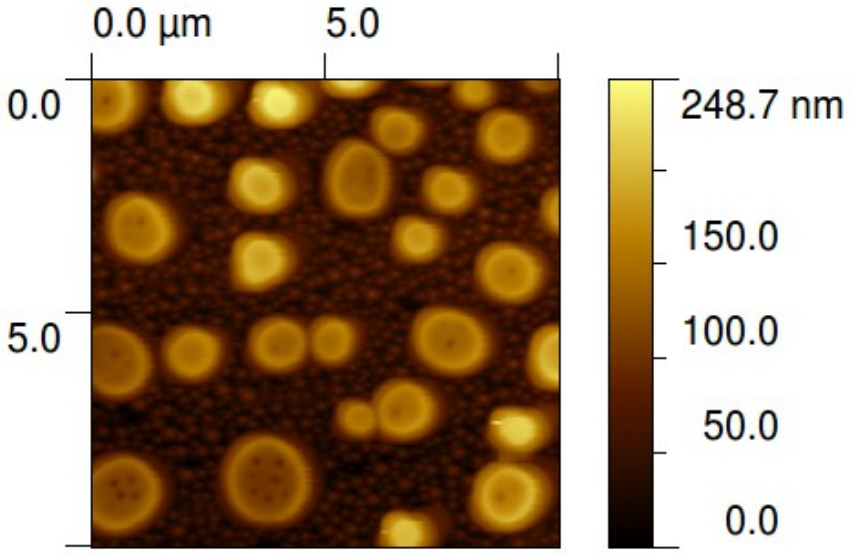
DMF	

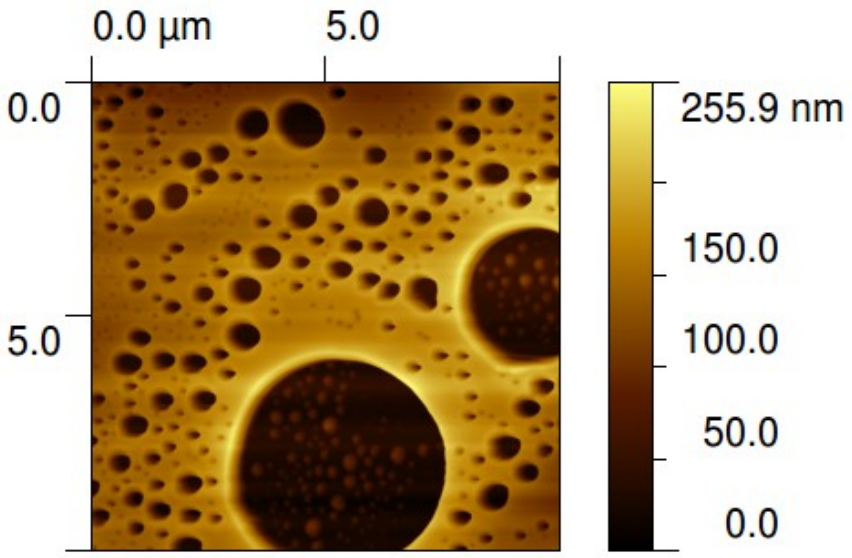
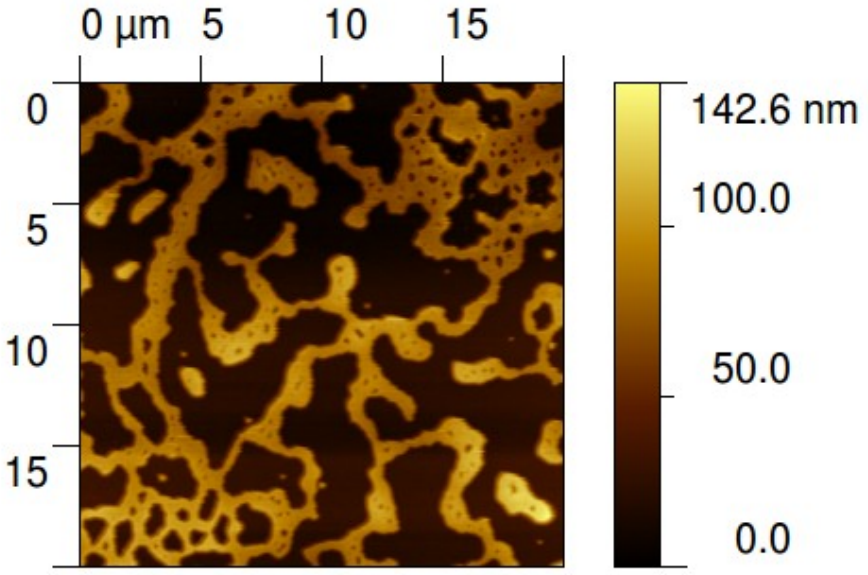
Figure S3. AFM images of compound **3** cast from various solvents as 0.02M solutions on untreated glass substrates or glass substrates silanized with phenyltrichlorosilane (hydrophobic).

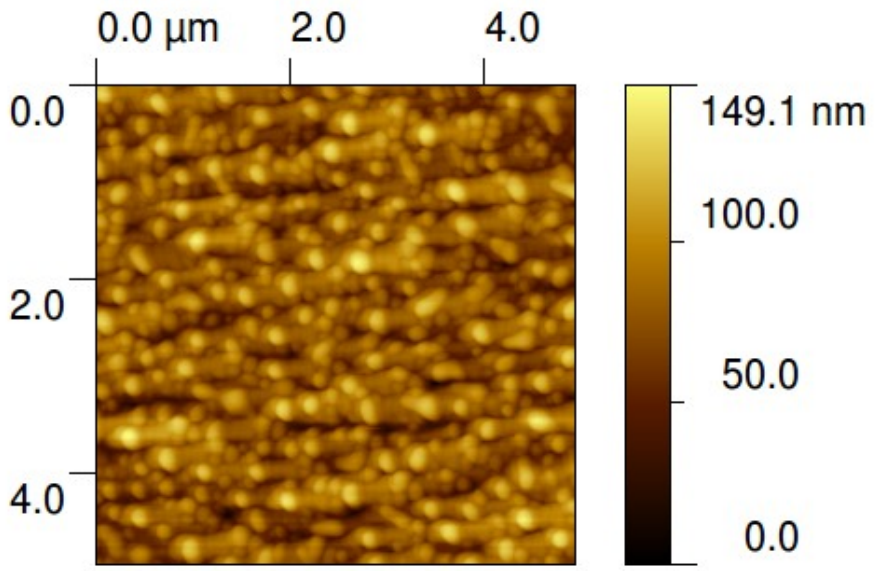
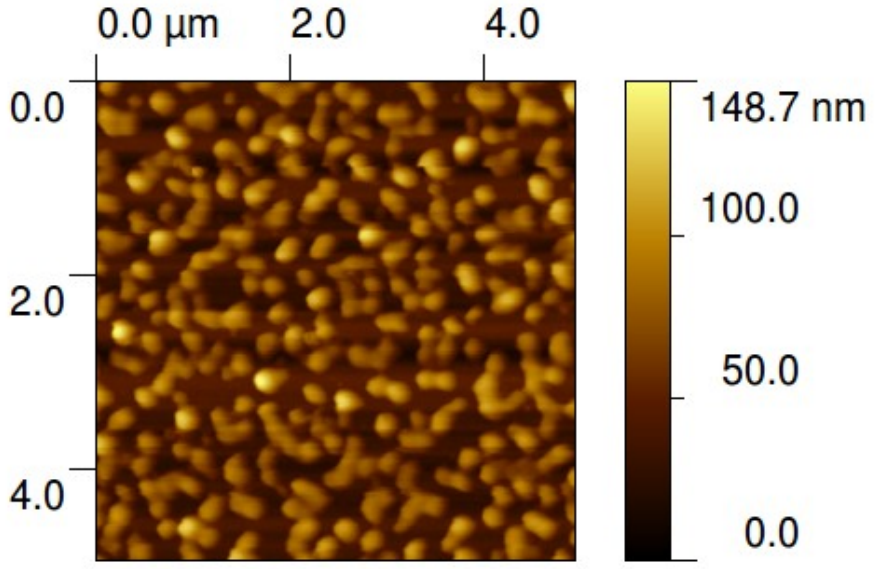
Ethyl Ether - dry	
Ethyl Ether - saturated	

Ethyl Acetate - dry	
Ethyl Acetate - saturated	

1-Butanol - dry	
1-Butanol - saturated	

THF	 0 µm 10 20 0 10 20 242.4 nm 150.0 100.0 50.0 0.0
Acetone	 0.0 µm 5.0 0.0 5.0 248.7 nm 150.0 100.0 50.0 0.0

Acetone (hydrophobic)	
Acetonitrile	

Ethanol	
Ethanol (hydrophobic)	

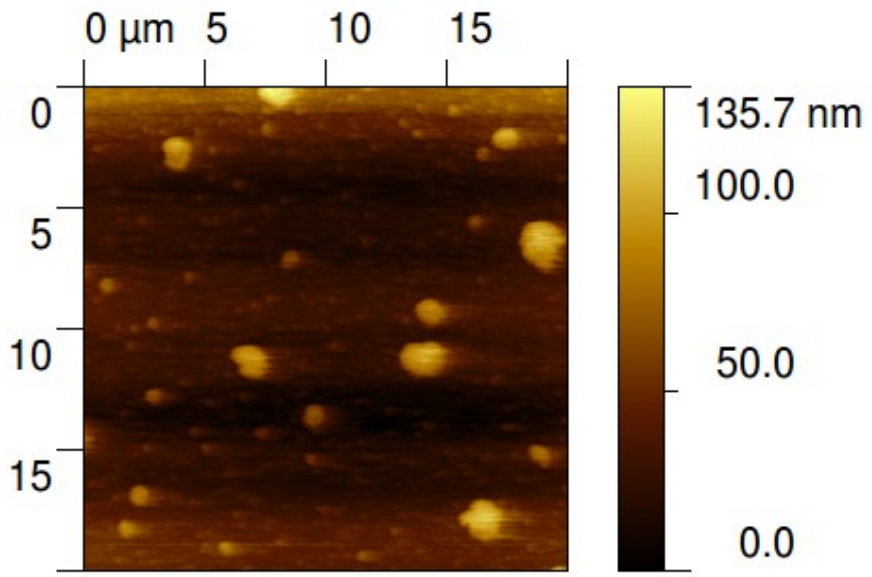
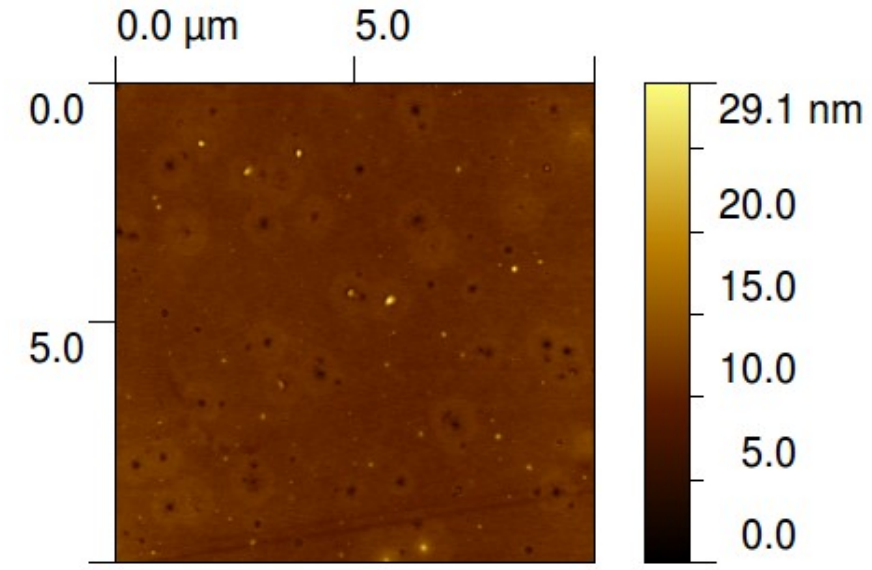
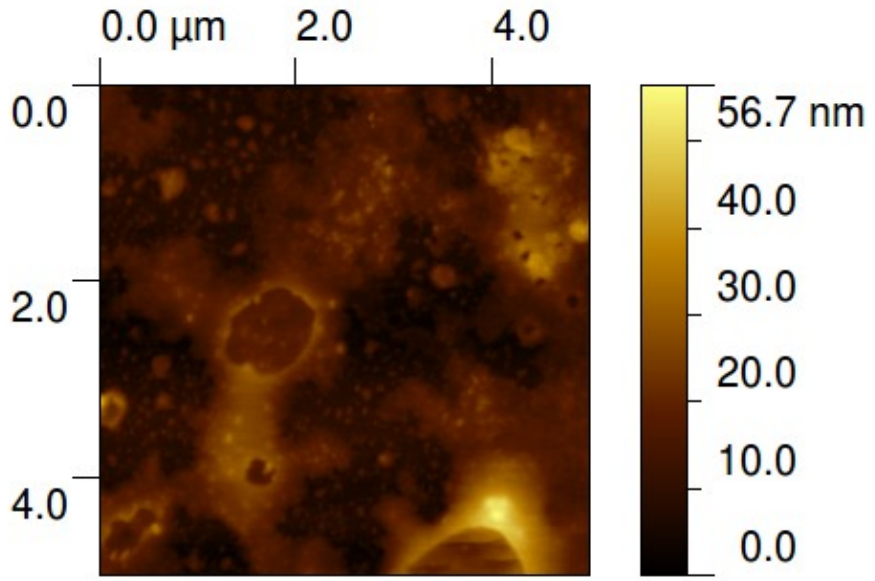
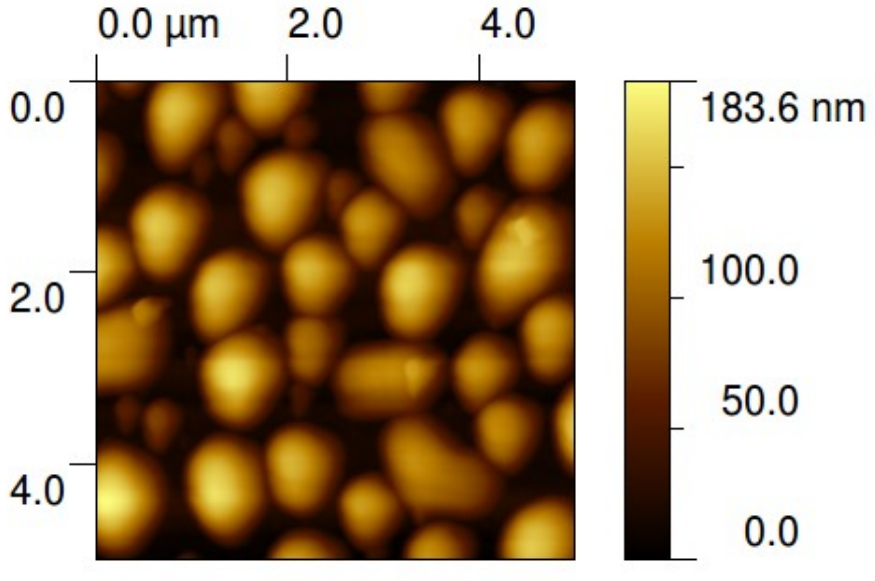
Dioxane	 0 µm 5 10 15 0 5 10 15 135.7 nm 100.0 50.0 0.0
DMF	 0.0 µm 5.0 0.0 5.0 29.1 nm 20.0 15.0 10.0 5.0 0.0

Figure S4. AFM images of compound **4** cast from various solvents as 0.02M solutions on untreated glass substrates.

Ethanol	
Ethanol/toluene 9:1	

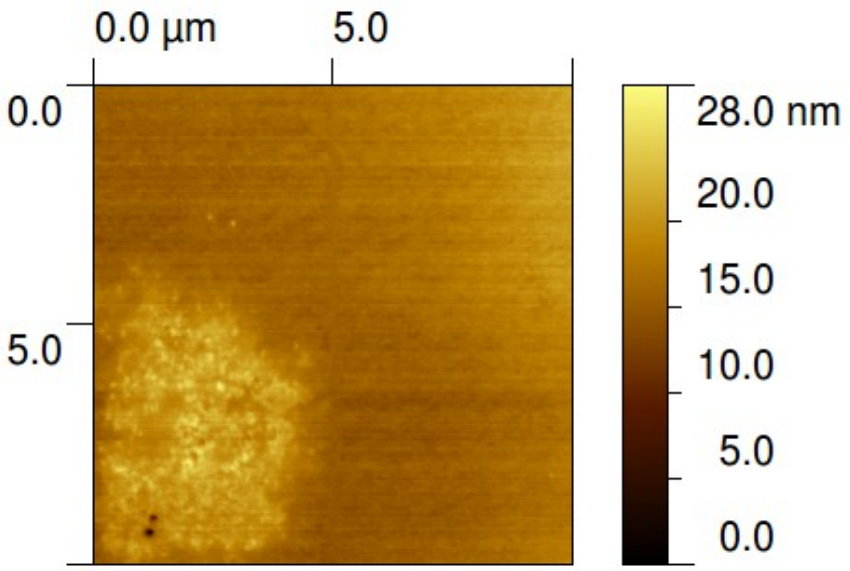
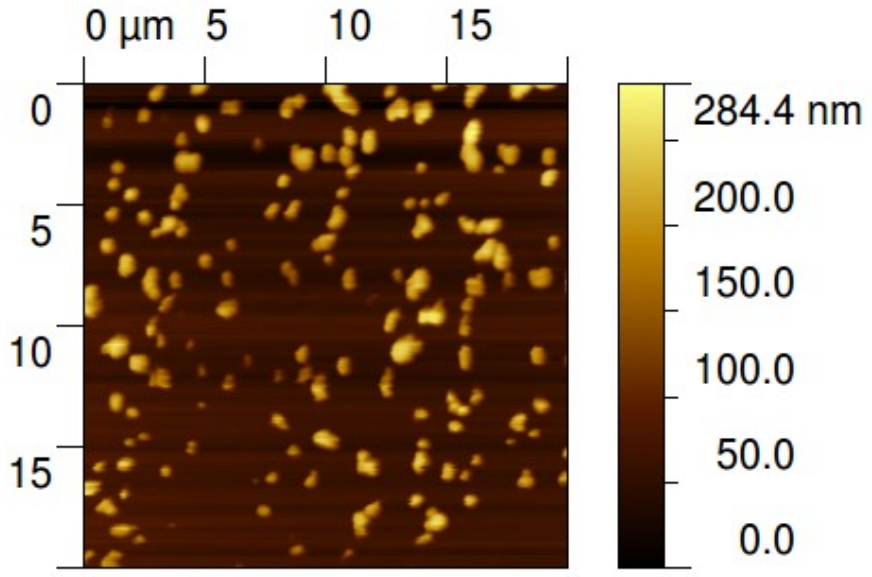
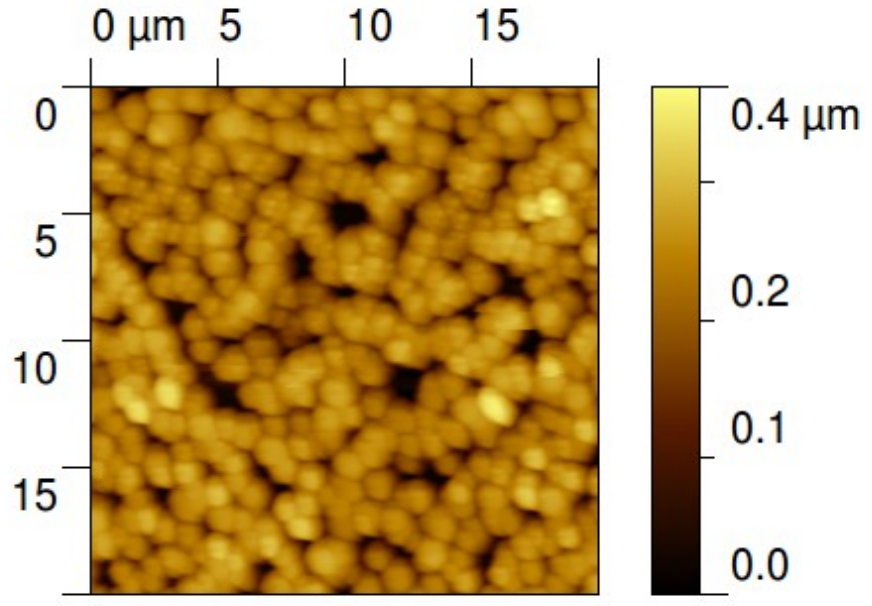
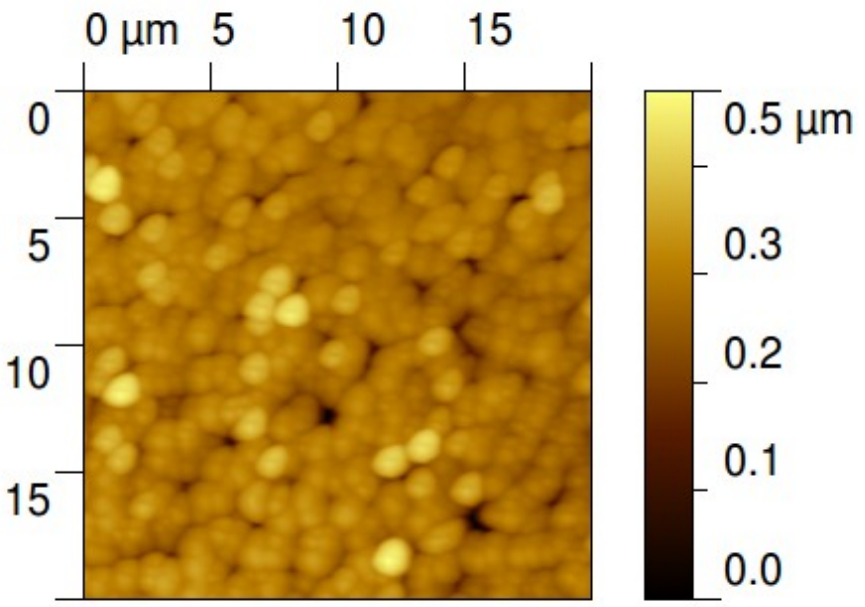
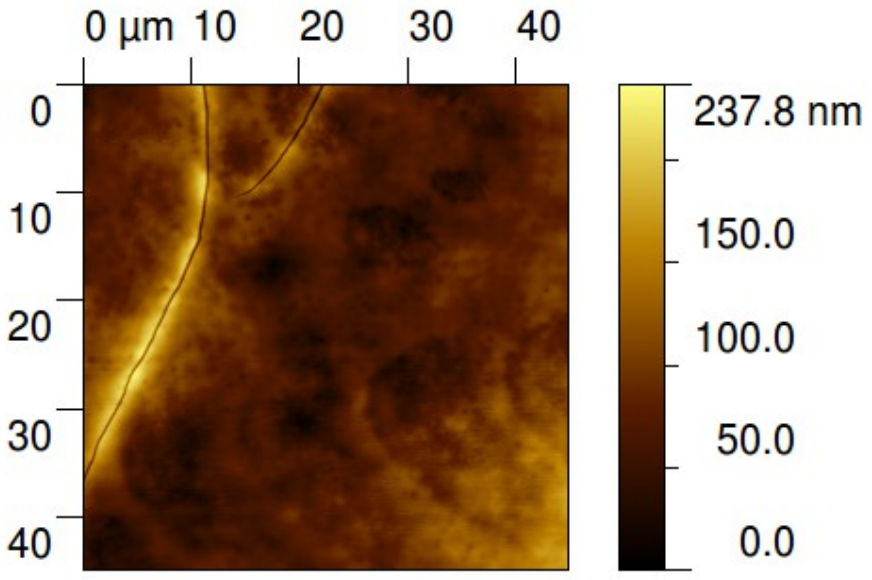
DMF	

Figure S5. AFM images of compound **1** cast from solutions of various concentrations in acetone on untreated glass substrates.

0.05 M	
0.1 M	

0.2 M	 0 µm 5 10 15 0 5 10 15 0.5 µm 0.3 0.2 0.1 0.0
0.5 M	 0 µm 10 20 30 40 0 10 20 30 40 237.8 nm 150.0 100.0 50.0 0.0

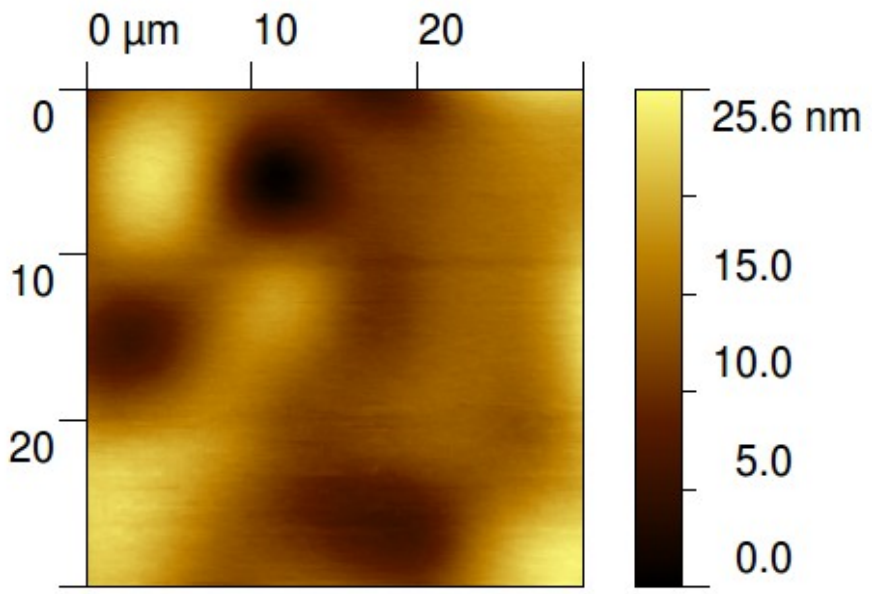
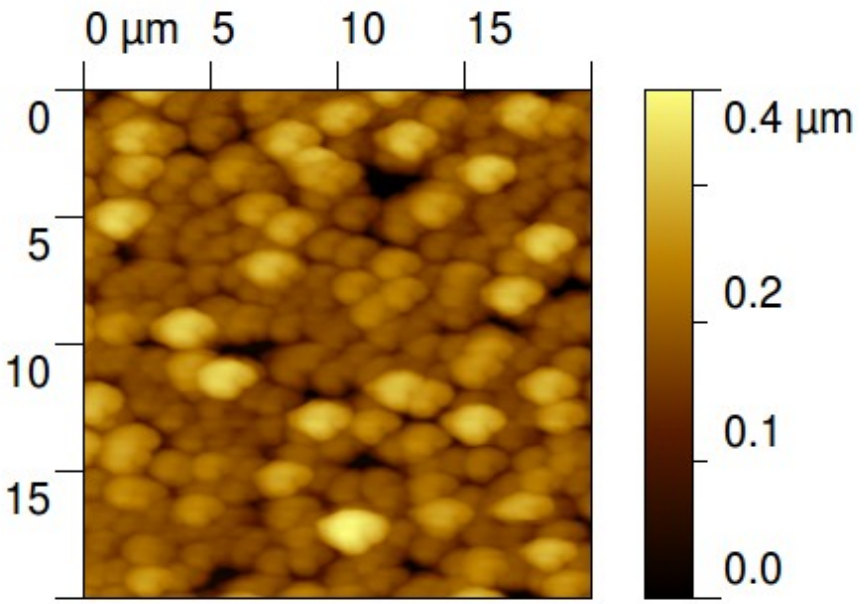
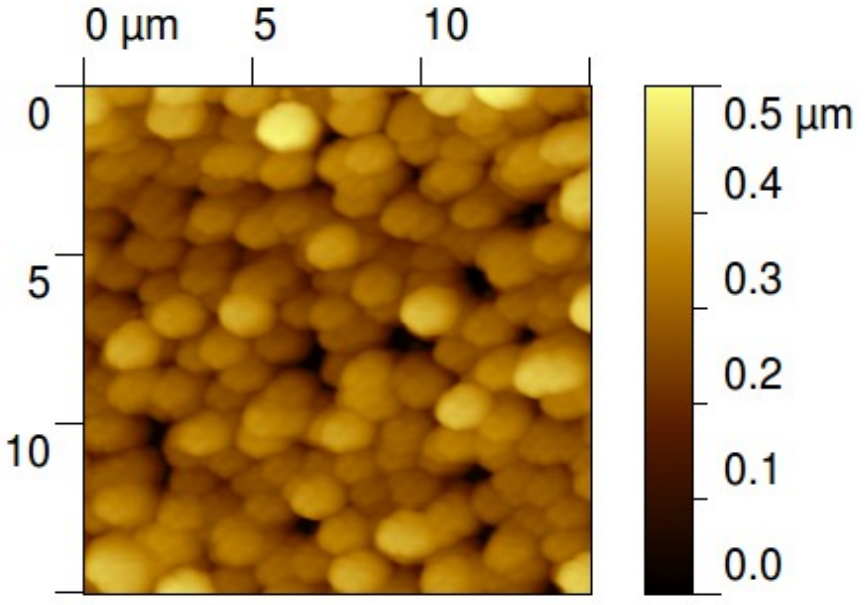
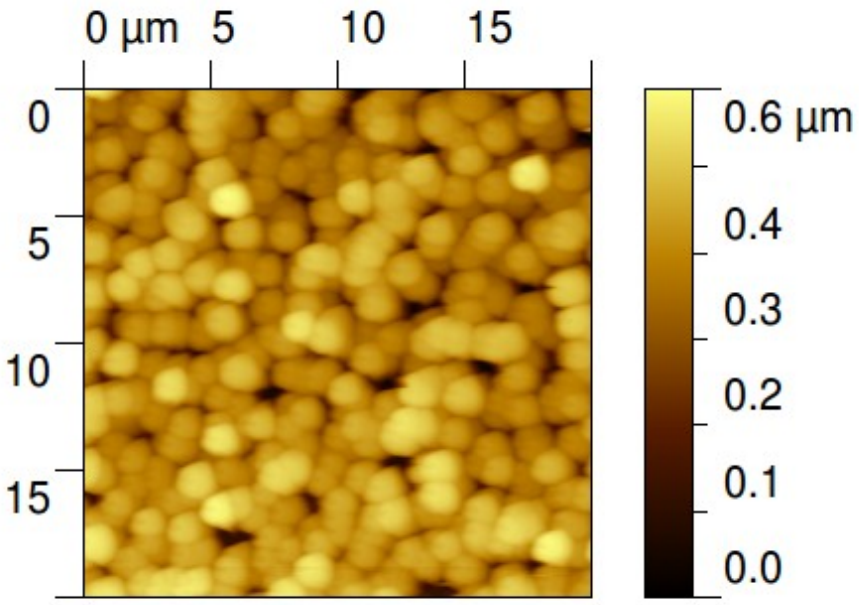
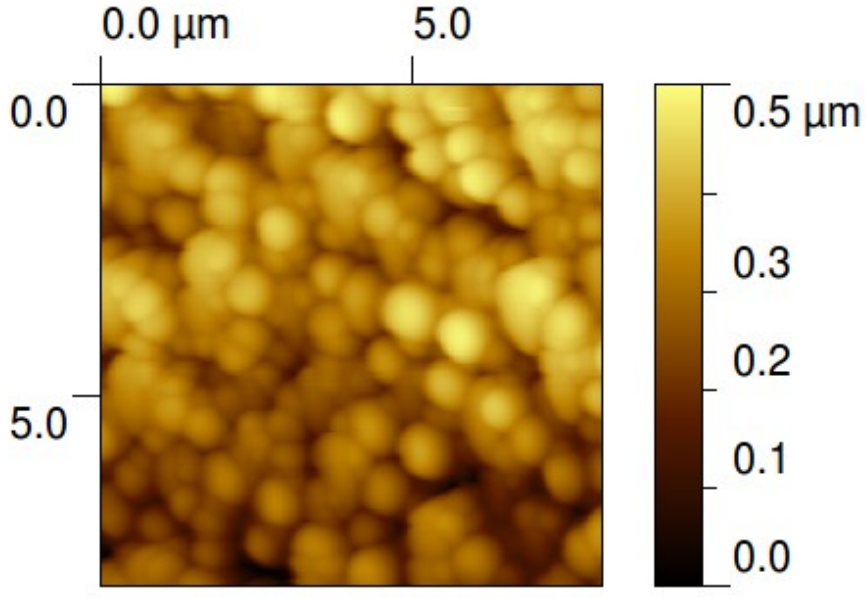
1.0 M	

Figure S6. AFM images of compound **2** cast from solutions of various concentrations in acetone on untreated glass substrates.

0.05 M	
0.1 M	

0.2 M	 0 µm 5 10 15 0 5 10 15 0.6 µm 0.4 0.3 0.2 0.1 0.0
0.5 M	 0.0 µm 5.0 0.0 5.0 0.5 µm 0.3 0.2 0.1 0.0

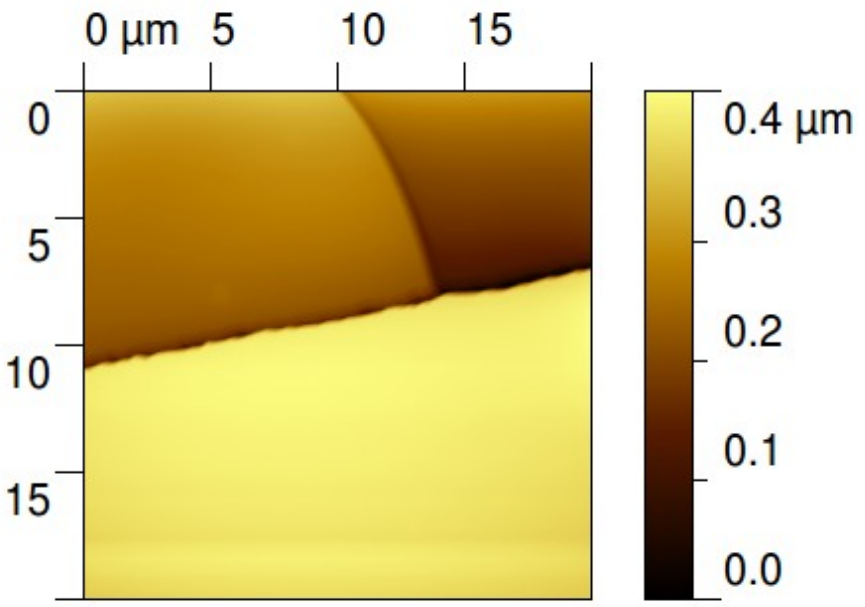
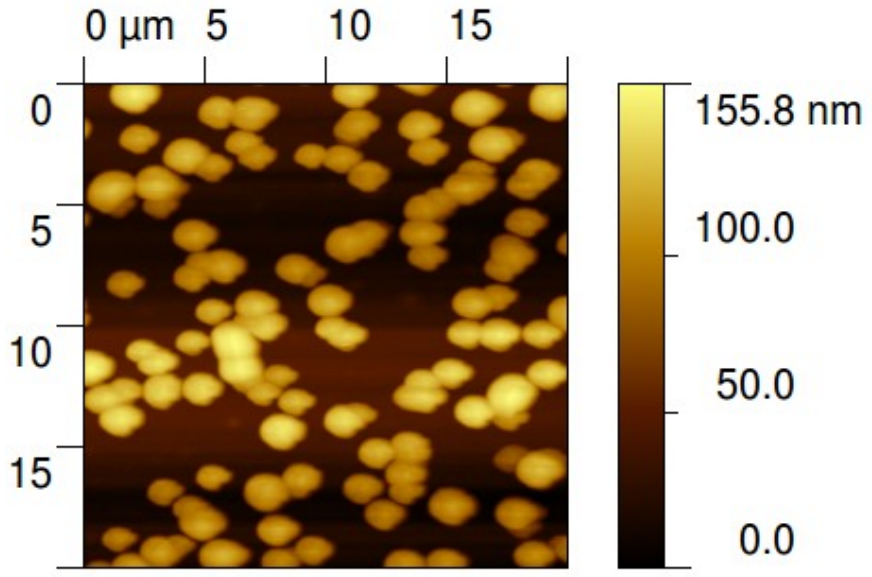
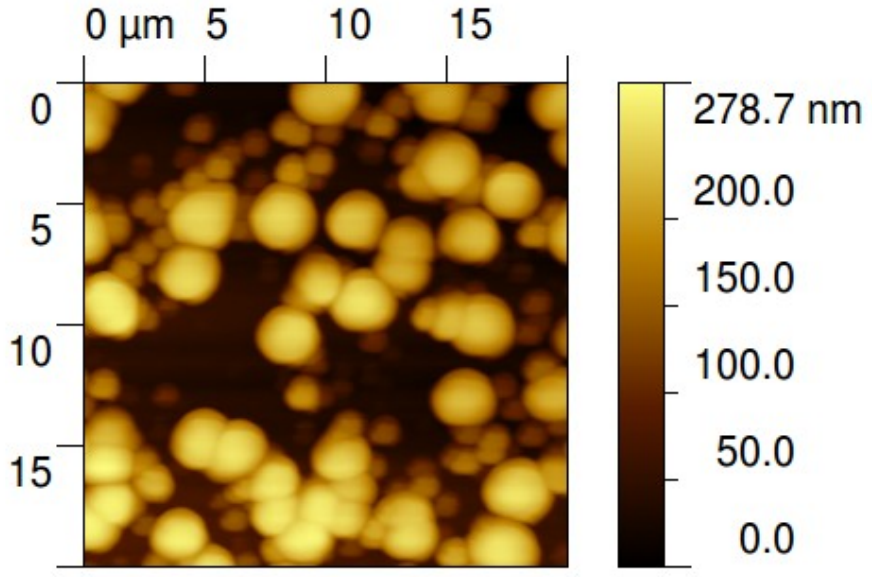
1.0 M	

Figure S7. AFM images of compound **3** cast from solutions of various concentrations in acetone on untreated glass substrates.

0.05 M	
0.1 M	

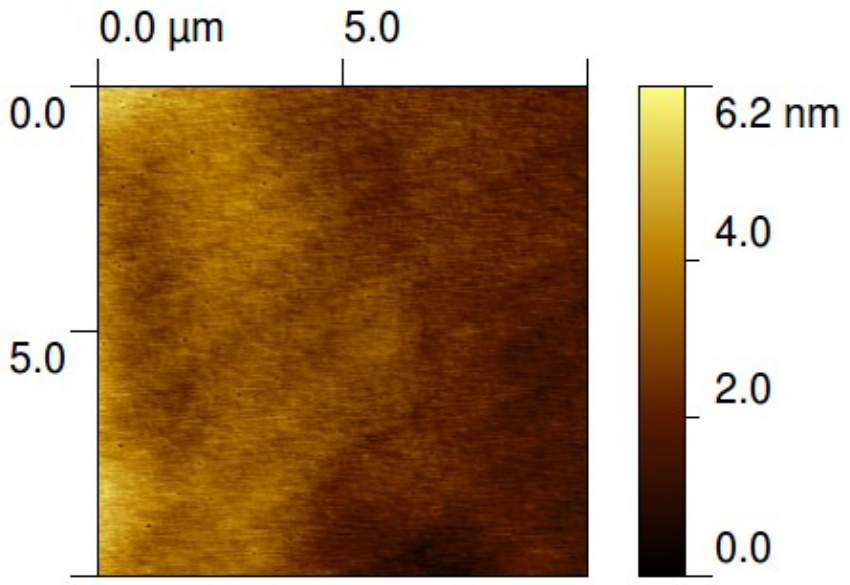
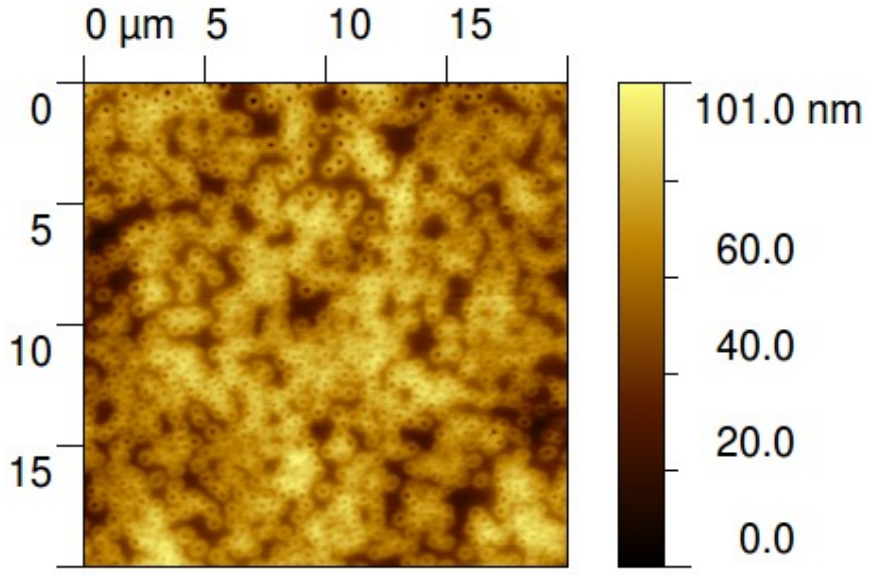
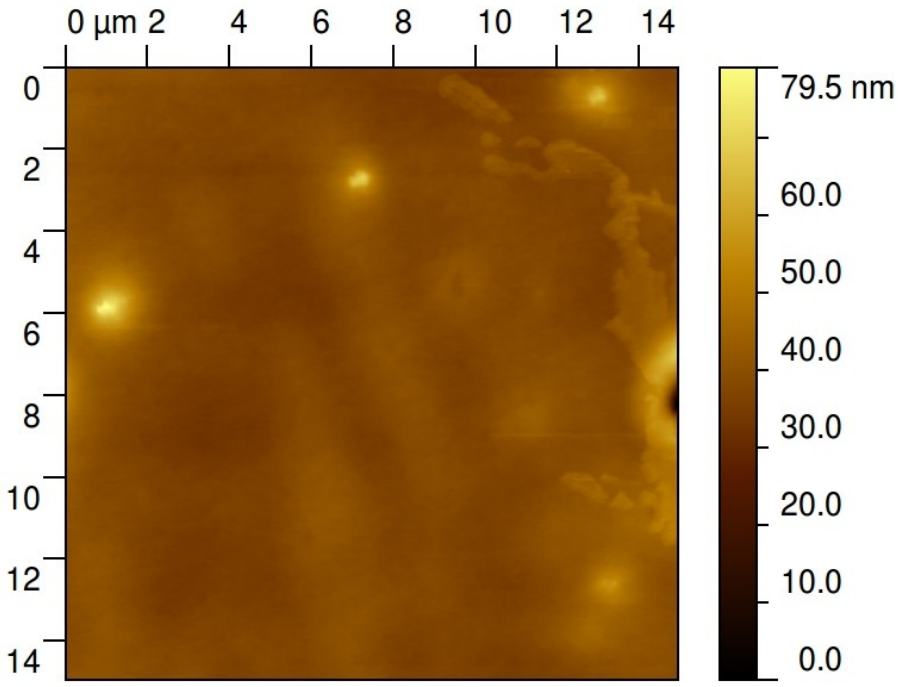
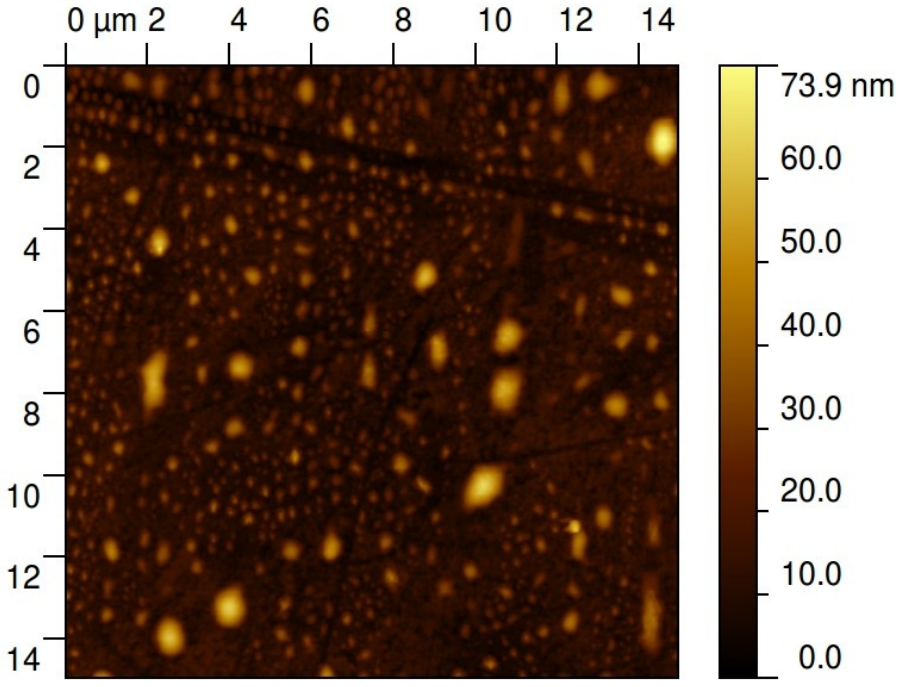
0.2 M	 0.0 µm 5.0 0.0 5.0 6.2 nm 4.0 2.0 0.0
0.5 M	 0 µm 5 10 15 0 5 10 15 101.0 nm 60.0 40.0 20.0 0.0

Figure S8. AFM images of films of compounds **1** and **4** cast from a 0.02M solution of dry or water-saturated ethyl ether (compound **1**), or ethanol (compound **4**), on silanized glass substrates after thermal annealing for 1 h at 110 ºC.

1 – dry ether	
1 – saturated ether	

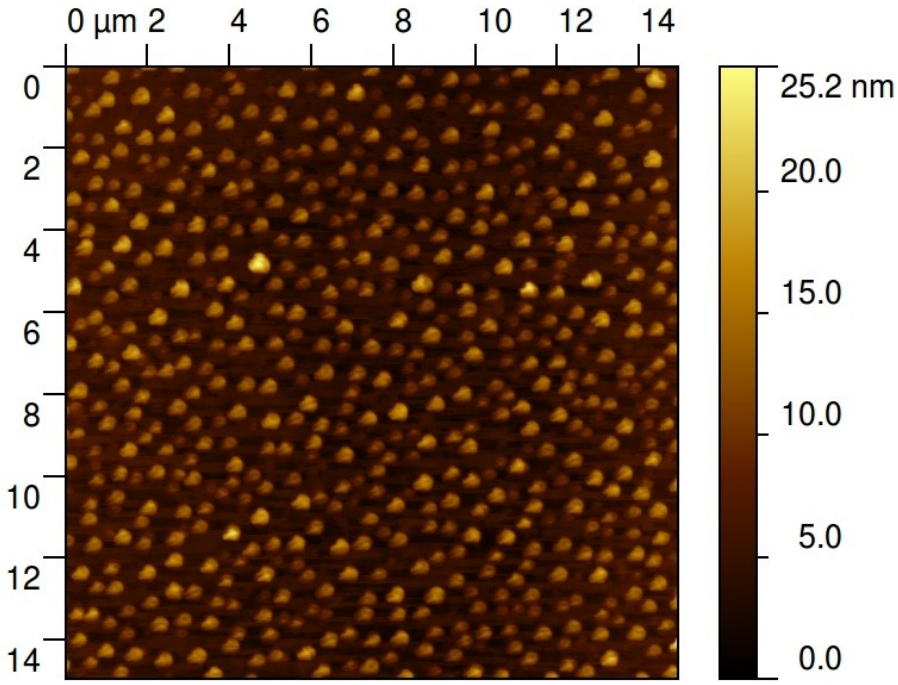
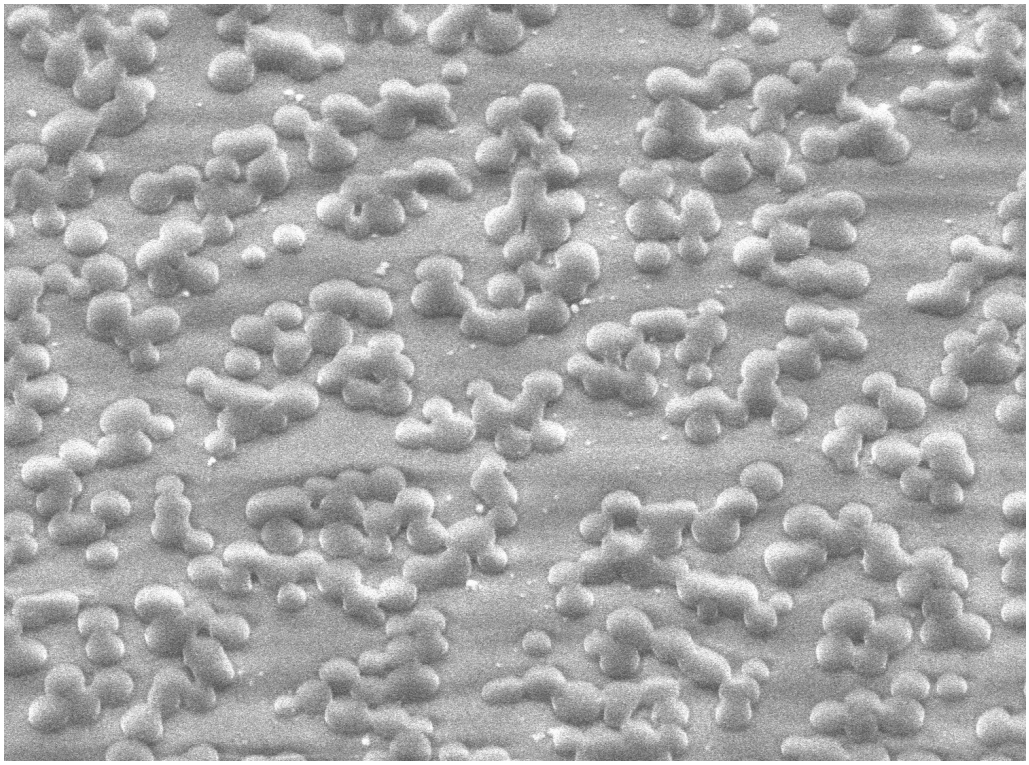
4 – ethanol	

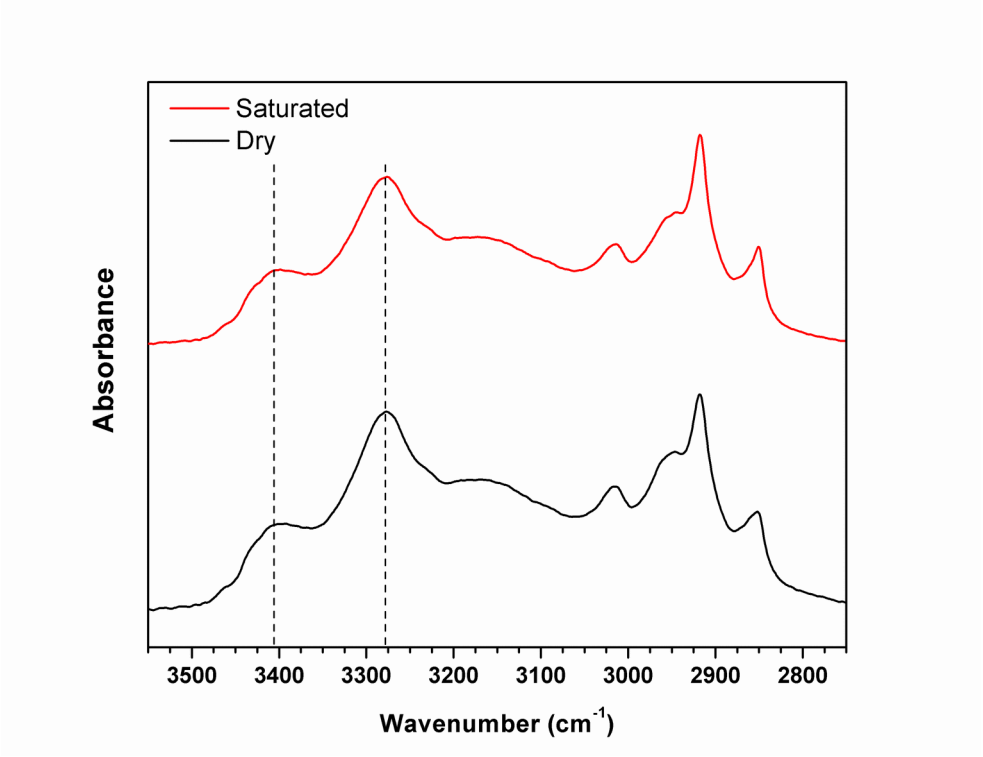
Figure S9. SEM image at a tilt angle of 45° of a thin film of compound **1** cast from acetone on an untreated glass substrate. The area shown is approximately 5 µm x 6 µm.



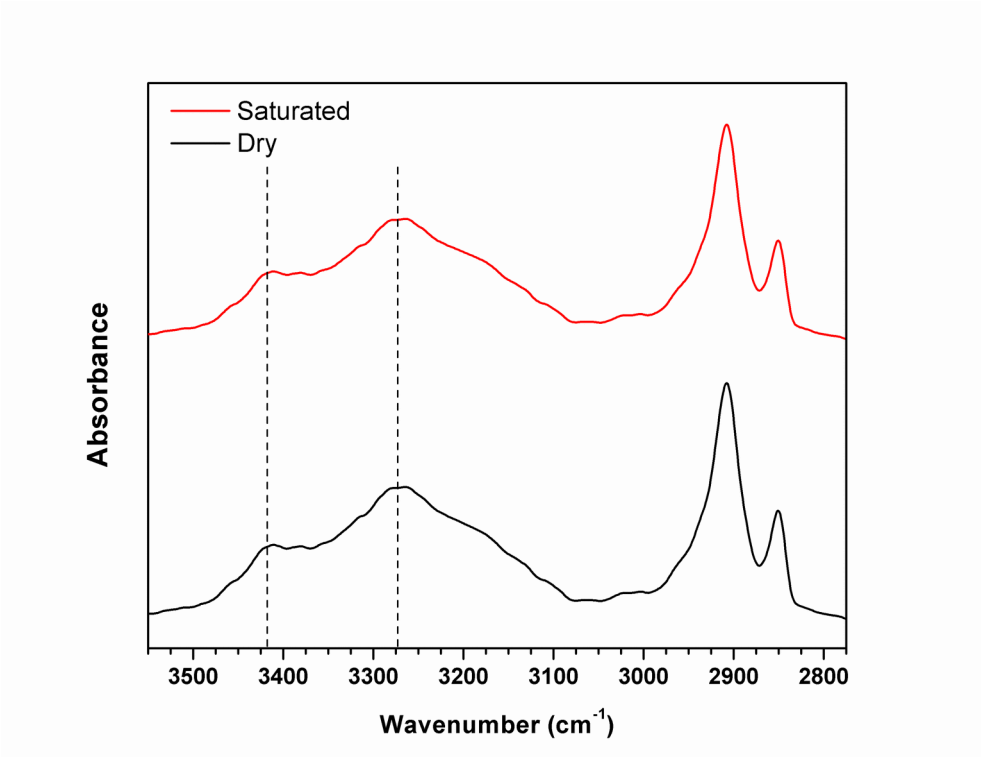
II. Additional FT-IR and UV-Vis spectra of films of compounds 1-4.

Figure S10. FT-IR spectra of films of compounds **1-3** cast from a 0.02 M solution of dry or water-saturated ethyl ether on untreated glass substrates. a) Compound **1**, b) compound **2**, c) compound **3**.

a)



b)


Saturated
Dry
Absorbance
3500
3400
3300
3200
3100
3000
2900
2800
Wavenumber (cm-1)

c)

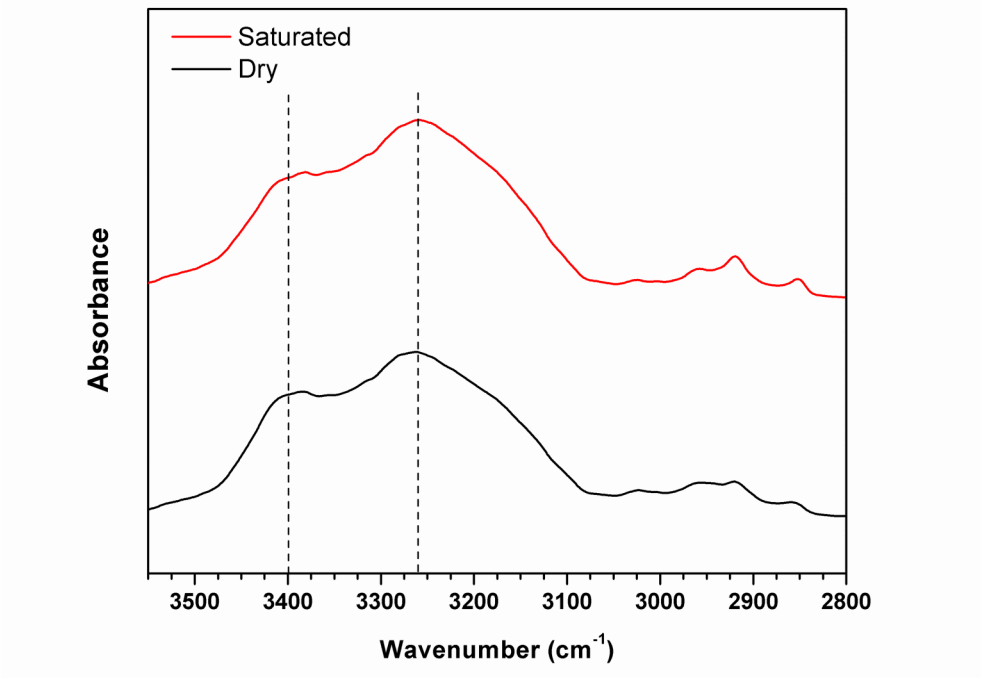
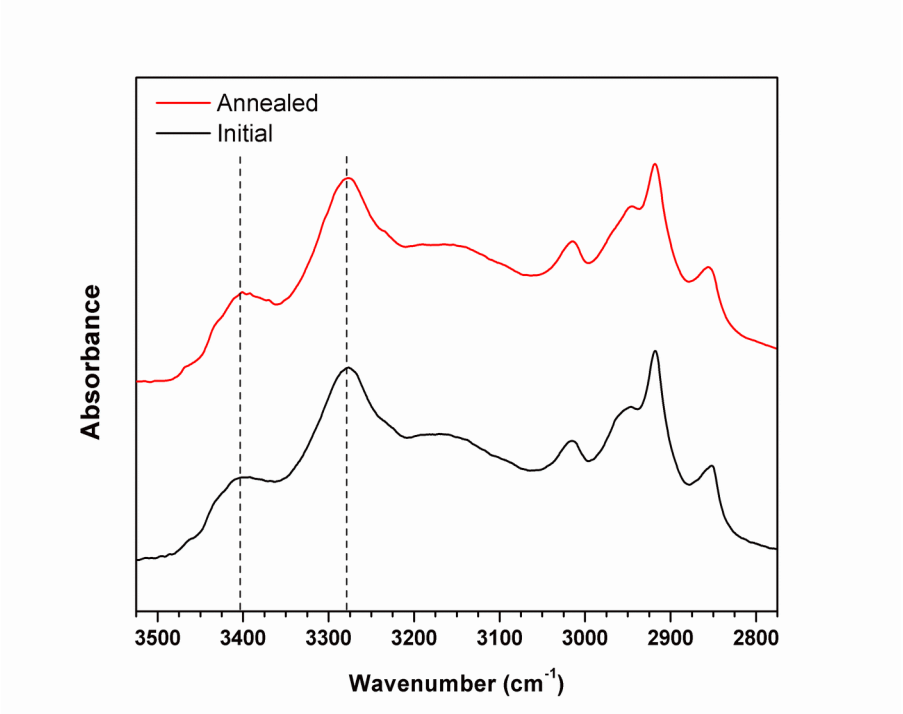

Saturated
Dry
Absorbance
3500
3400
3300
3200
3100
3000
2900
2800
Wavenumber (cm-1)

Figure S11. FT-IR spectra of films of compound **1** cast from a 0.02 M solution of dry or water-saturated ethyl ether on untreated glass substrates before and after 60 min of thermal annealing at 110 ºC. a) Dry ether, and b) water-saturated ether.

a)



b)

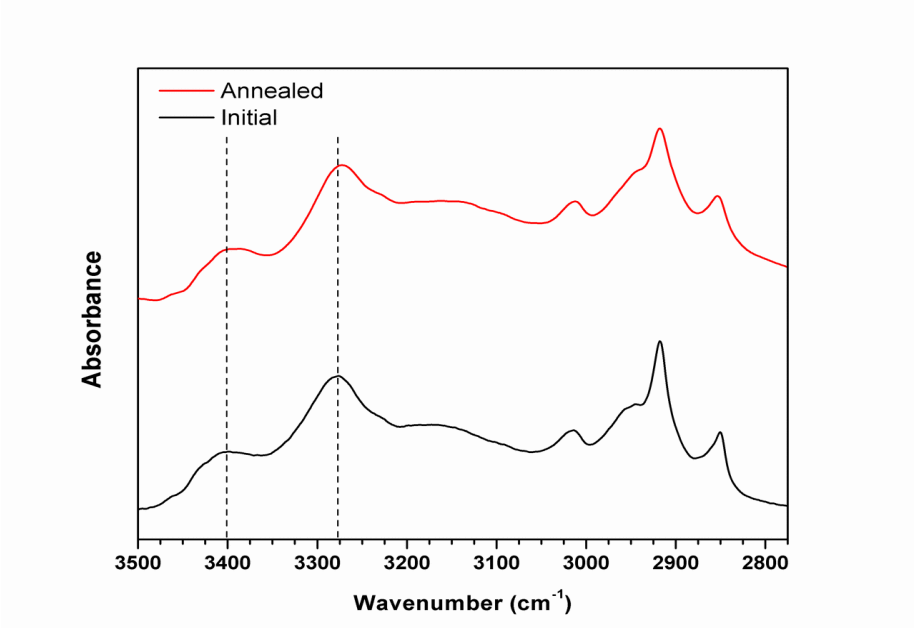
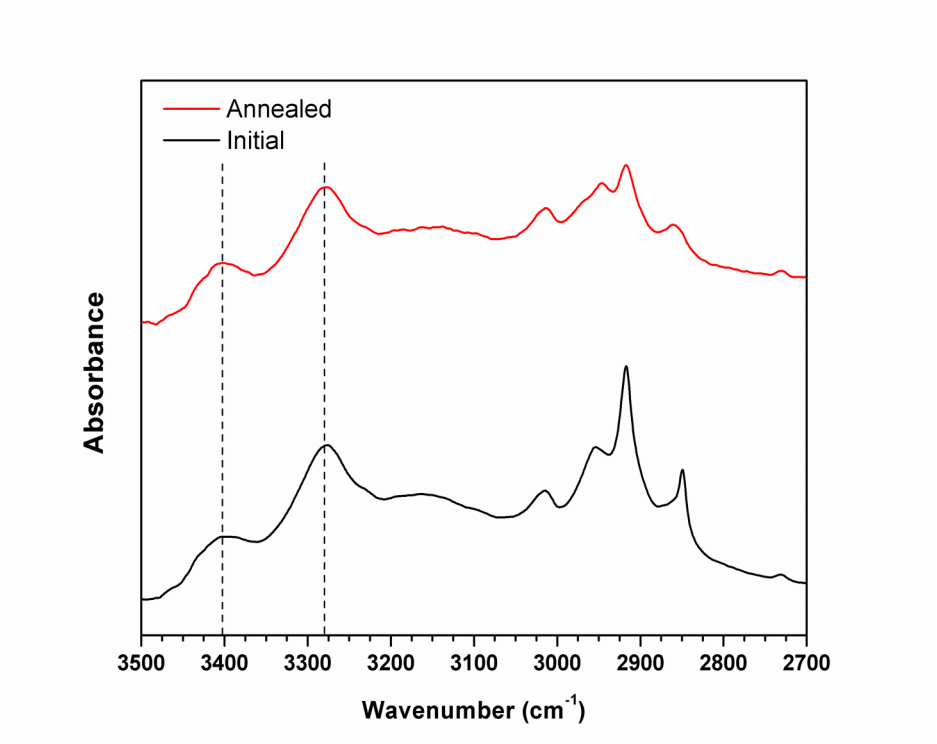


Figure S12. FT-IR spectra of films of compound **1** cast from a 0.02 M solution of dry or water-saturated ethyl ether on silanized glass substrates before and after 60 min of thermal annealing at 110 ºC. a) Dry ether, and b) water-saturated ether.

a)



b)

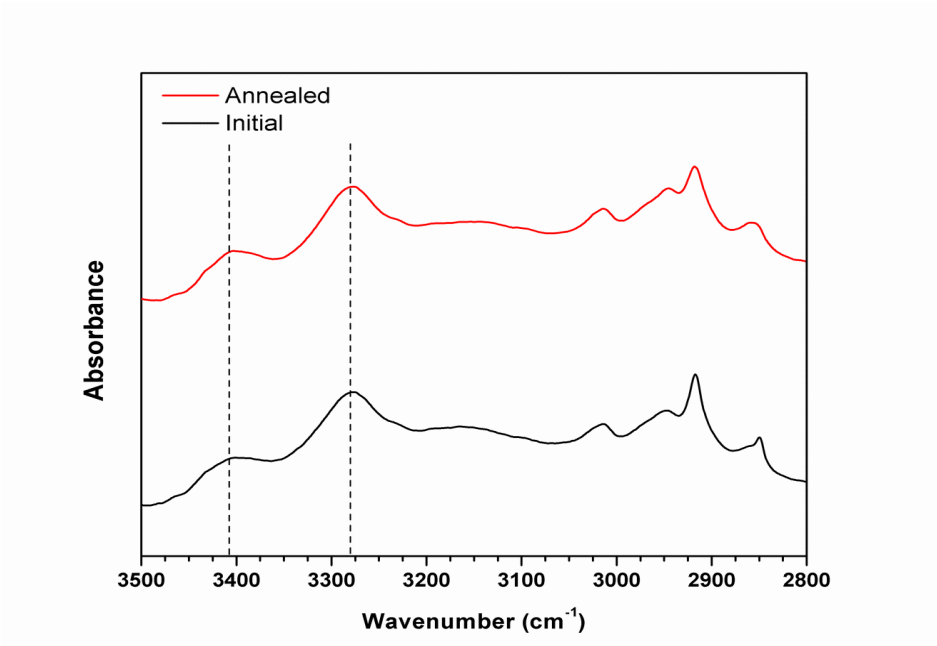


Figure S13. FT-IR spectra of films of compound **4** cast from a 0.02 M solution of ethanol on silanized glass substrates before and after 60 min of thermal annealing at 85 ºC.

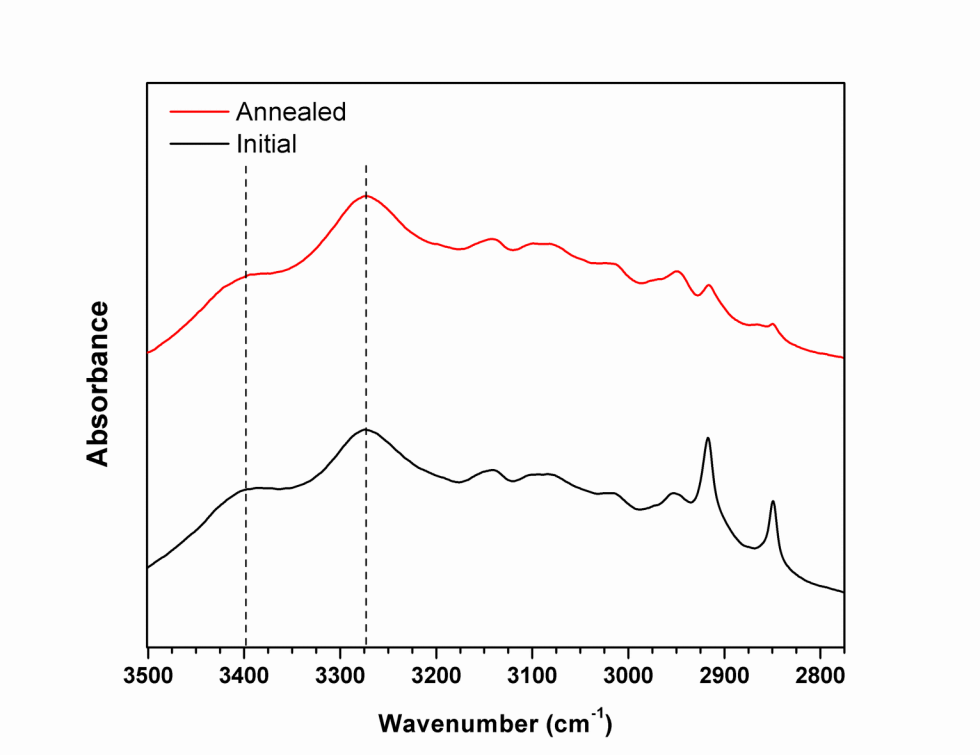
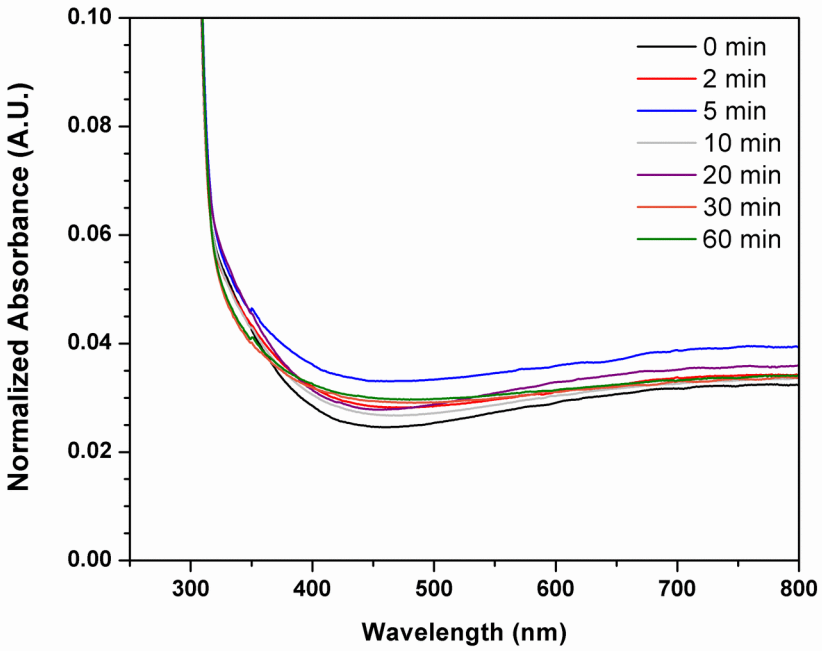
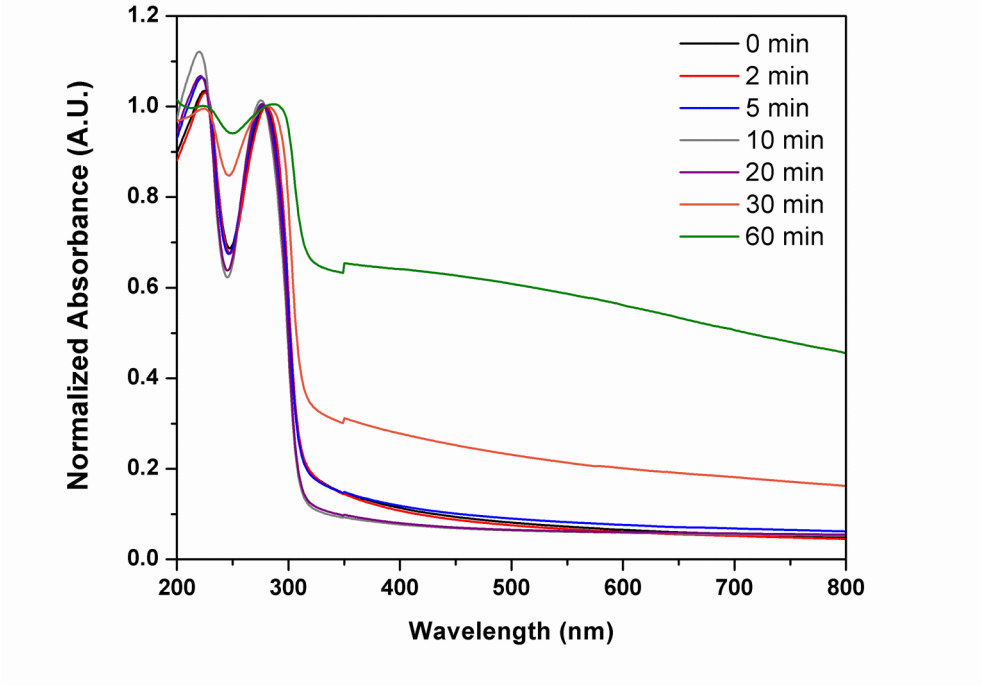


Figure S14. UV-Vis spectra of compound **1** cast from a 0.02 M solution of dry or water-saturated ethyl ether or acetone on untreated glass substrates after various times of thermal annealing at 110 °C. a) Dry ether, b) saturated ether, and c) acetone.

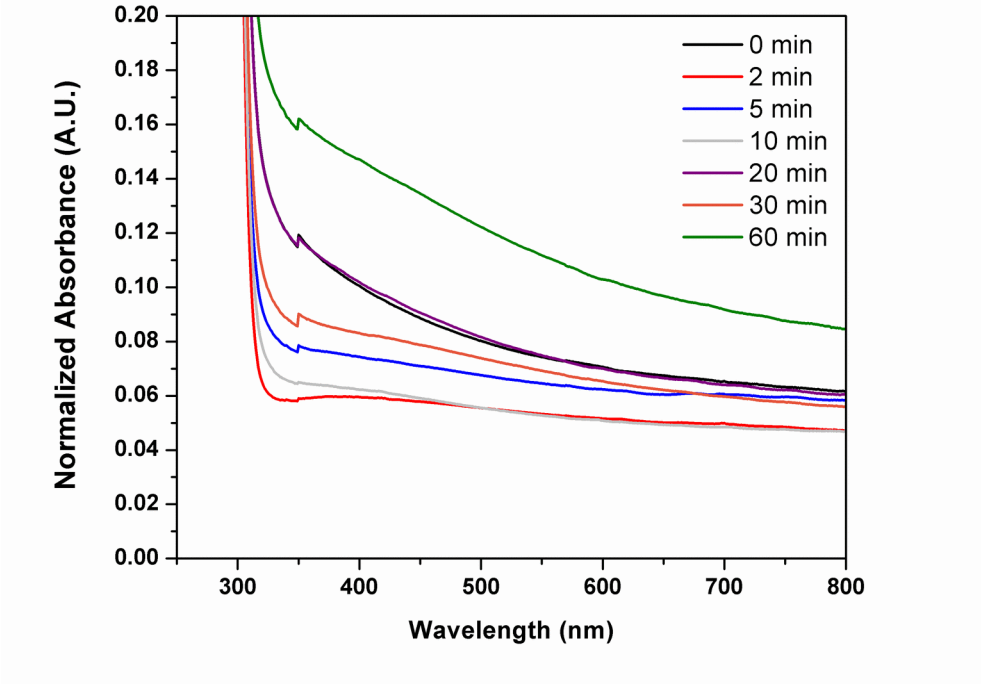
a)



b)


Normalized Absorbance (A.U.)
Wavelength (nm)
0 min
2 min
5 min
10 min
20 min
30 min
60 min

c)


Normalized Absorbance (A.U.)
Wavelength (nm)
0 min
2 min
5 min
10 min
20 min
30 min
60 min