

# Supplementary Materials: The Chemistry of Polydopamine Film Formation: The Amine-Quinone Interplay

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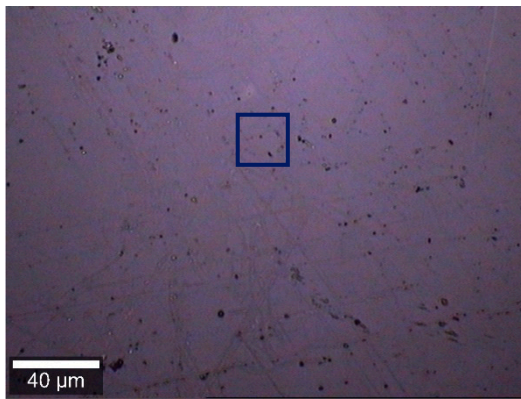
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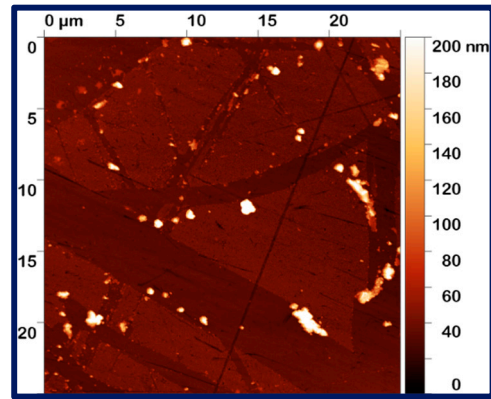
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**Ethylenediamine**



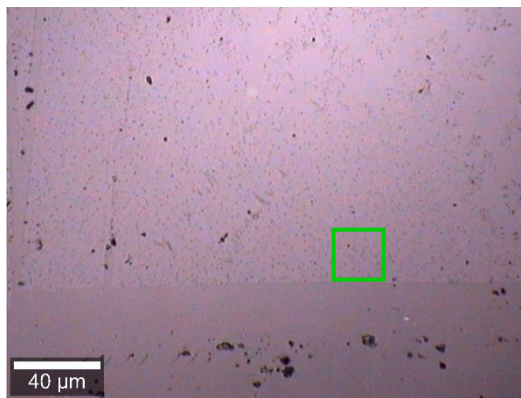
(a)

Mean Thickness: <5 nm



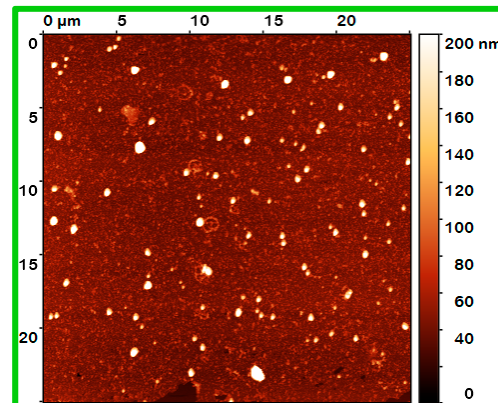
(b)

**Dodecylamine**



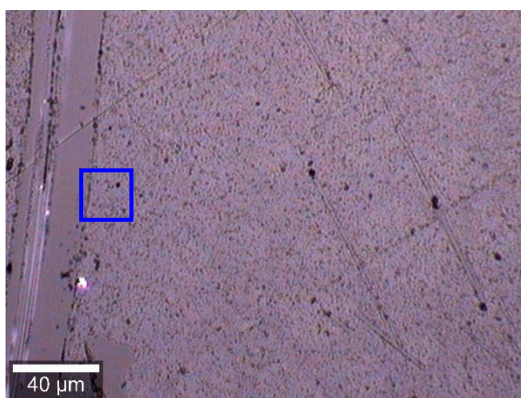
(a)

Mean Thickness:  $12 \pm 6$  nm



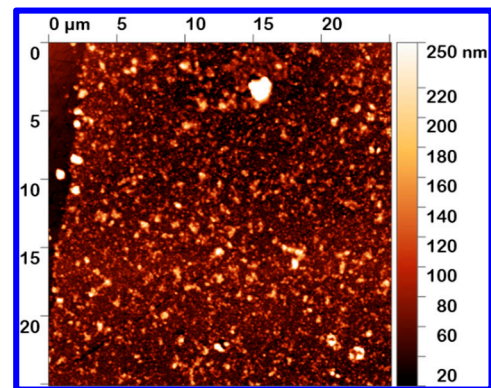
(b)

**1,4-Diaminobutane**



(a)

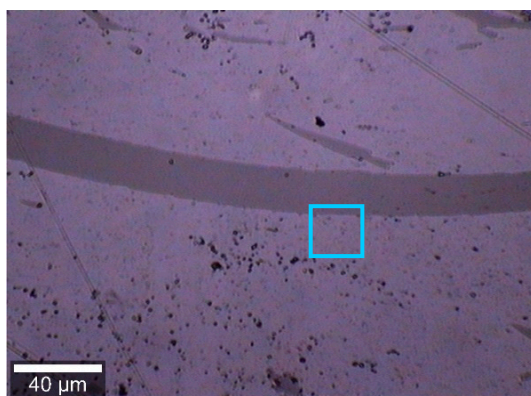
Mean Thickness:  $45 \pm 20$  nm



(b)

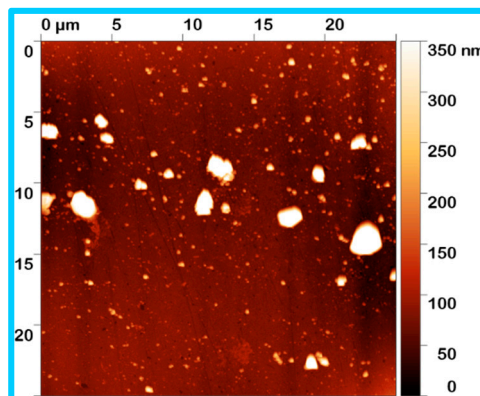
Figure S1. *Cont.*

### 1,10-Diaminododecane



(a)

Mean Thickness:  $53 \pm 15$  nm



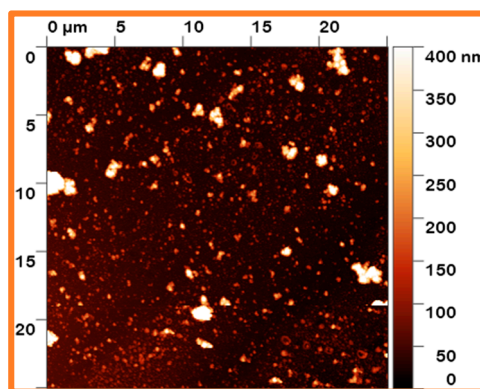
(b)

### 1,12-Diaminododecane



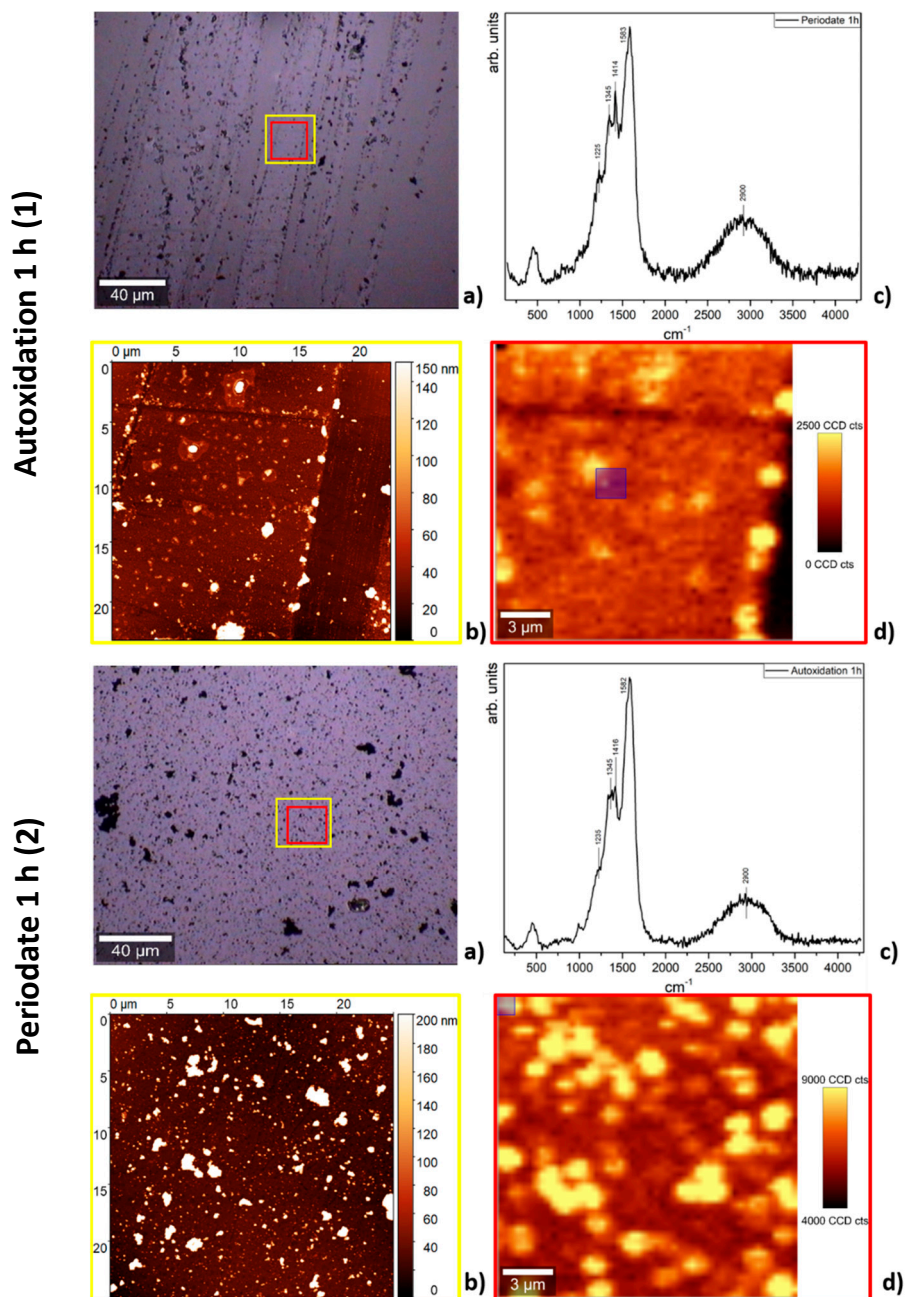
(a)

Mean Thickness:  $61 \pm 30$  nm

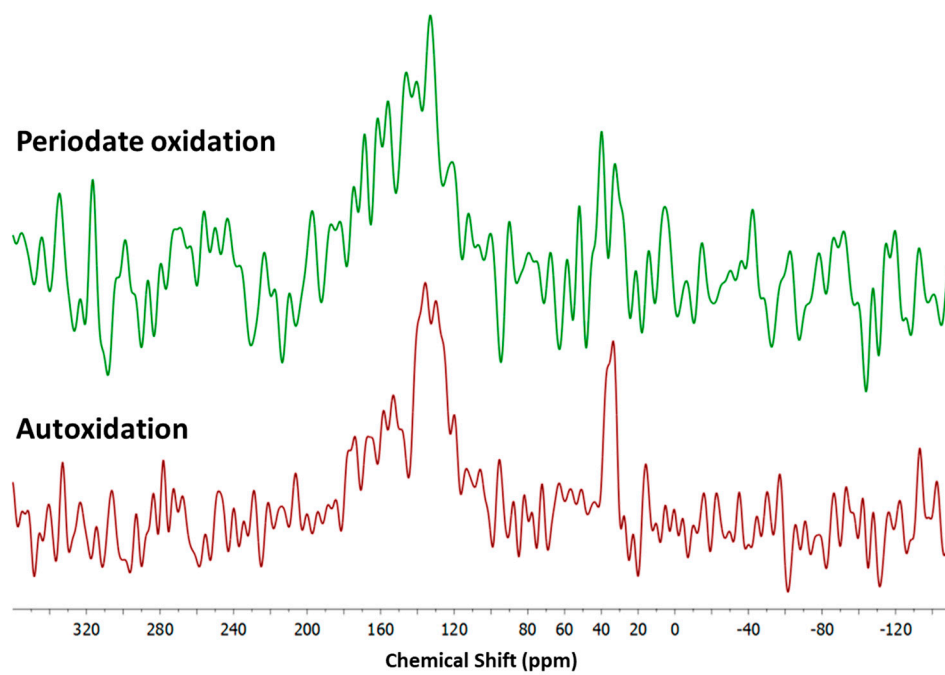


(b)

**Figure S1.** AFM analysis of the PDA film obtained in the presence of amines. (a) Bright-field image of the investigated sample region collected by 20× microscope objective. (b) AFM image of the area indicated by the square in the optical image.



**Figure S2.** AFM and micro-Raman analysis of PDA films obtained in the presence and in absence of periodate at 1 h oxidation time. (a) Bright-field image of the investigated sample region collected by 20× microscope objective. (b) AFM image of the area indicated by the yellow square in the optical image. Average grain size: 60 nm (1), 100 nm (2). Film thickness:  $17 \pm 7$  nm (1),  $70 \pm 15$  nm (2). (c) Raman spectrum. (d) Micro-Raman image relative to the red sample region in the optical image.



**Figure S3.**  $^{15}\text{N}$  spectra of samples produced by periodate oxidation (green spectrum) and autoxidation (red spectrum).