

Supplementary Information

Organization of *para-tert*-butylcalix[6]arene molecules in Langmuir films and their interaction with cadmium ions

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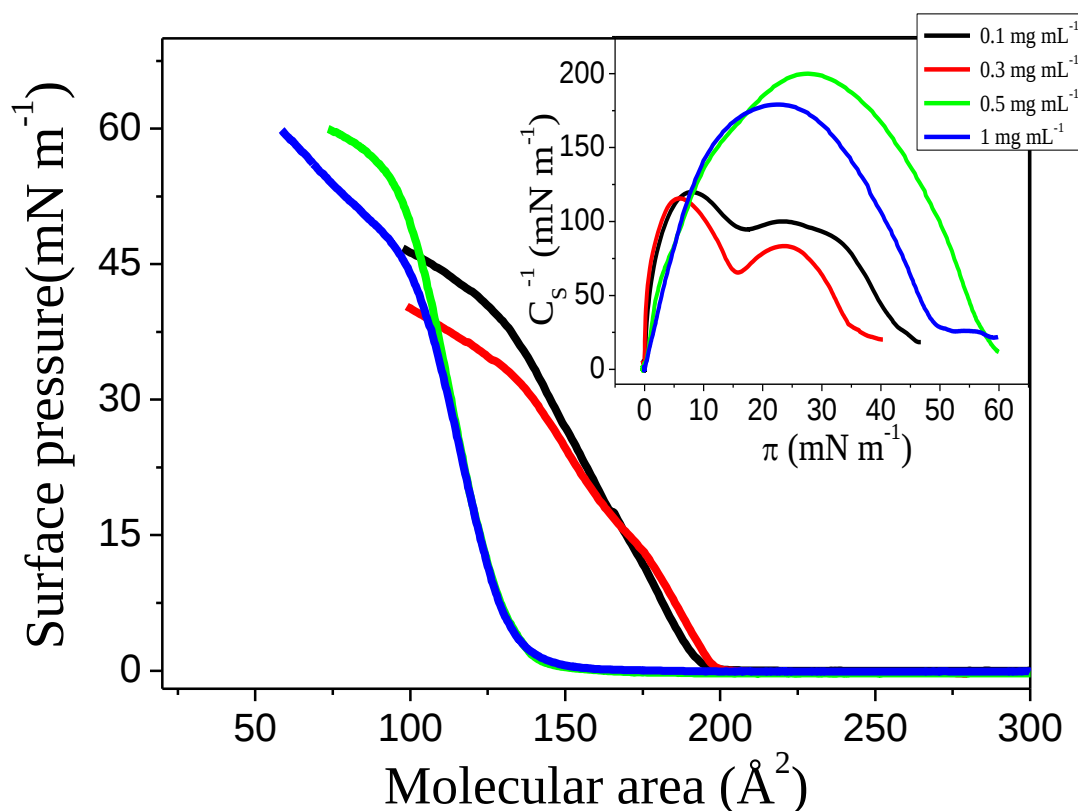


Fig. S1: π -A isotherms for *Calix6* monolayers in different concentrations (0.1; 0.3; 0.5 and 1 mg mL⁻¹). Insert: Compressibility modulus for *Calix6* monolayers in different concentrations (0.1; 0.3; 0.5 and 1 mg mL⁻¹).

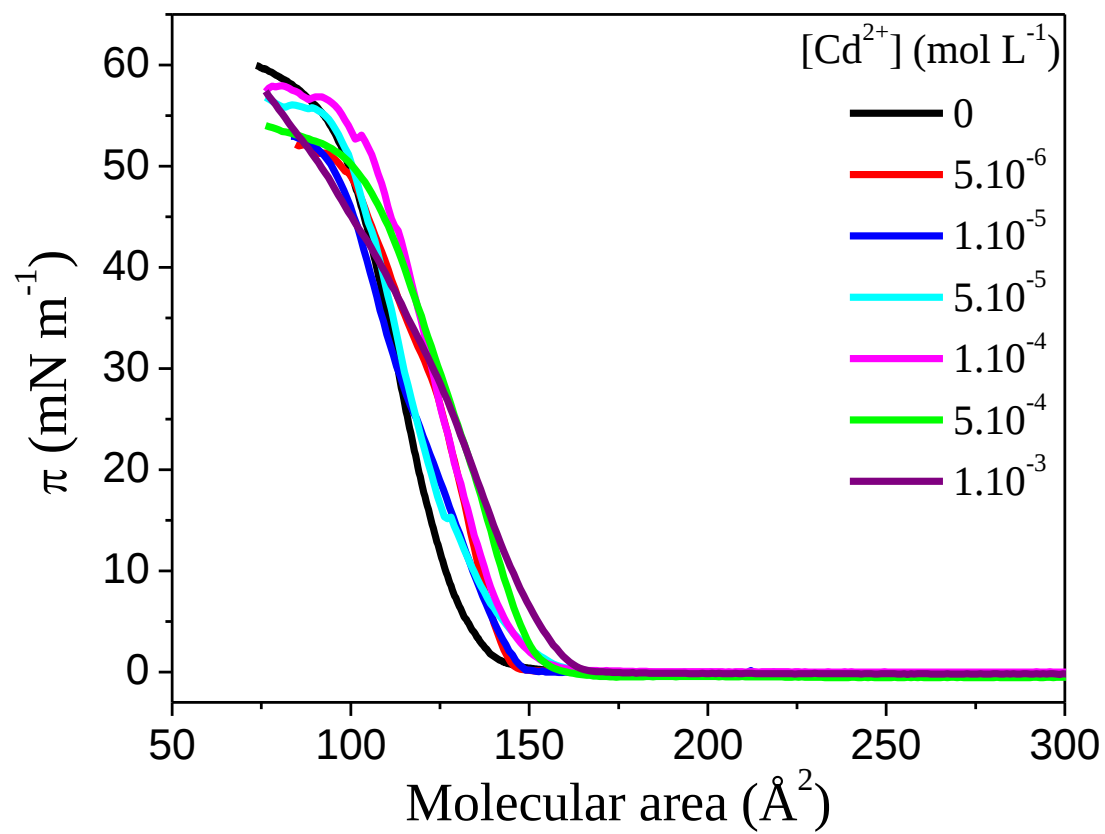


Fig. S2. Surface pressure-area isotherms of *Calix6* monolayers ($0.5 \text{ mg mL}^{-1}/\text{CHCl}_3$) on CdCl_2 in concentration range of $5 \cdot 10^{-6}$ to $1 \cdot 10^{-2} \text{ mol L}^{-1}$.

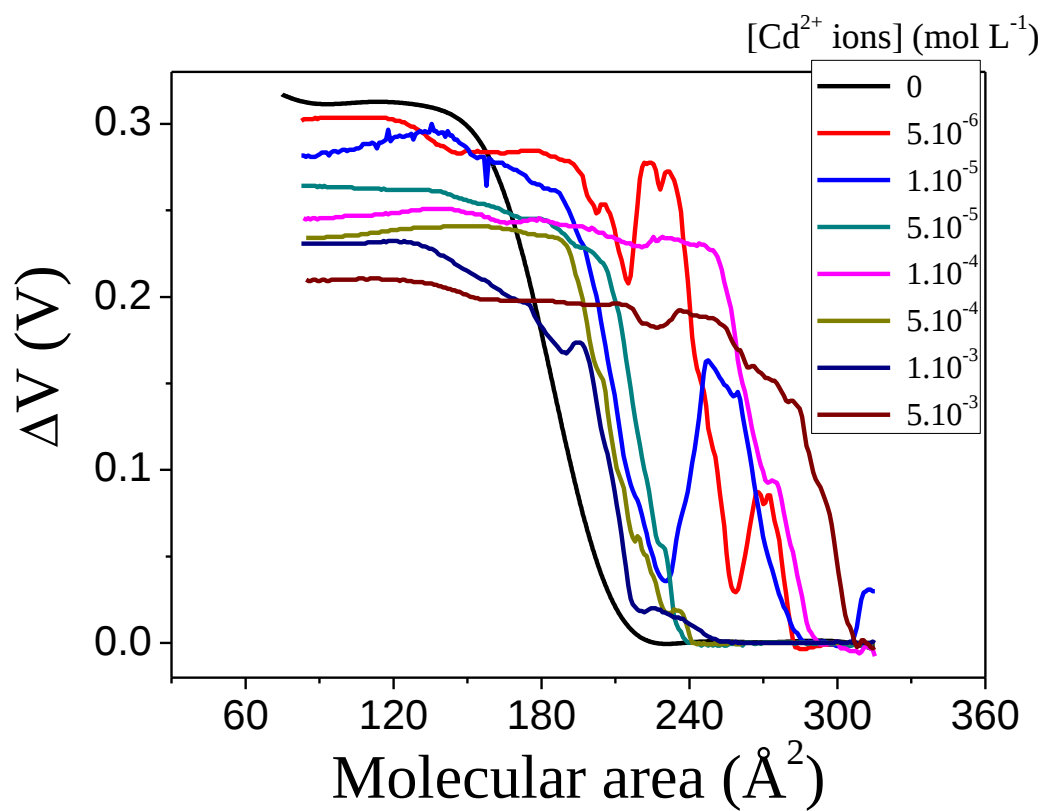


Fig. S3. Surface potential-area isotherm of *Calix6* monolayers ($0.5 \text{ mg mL}^{-1}/\text{CHCl}_3$) on CdCl_2 at concentrations from 5.10^{-6} to $5.10^{-3} \text{ mol L}^{-1}$

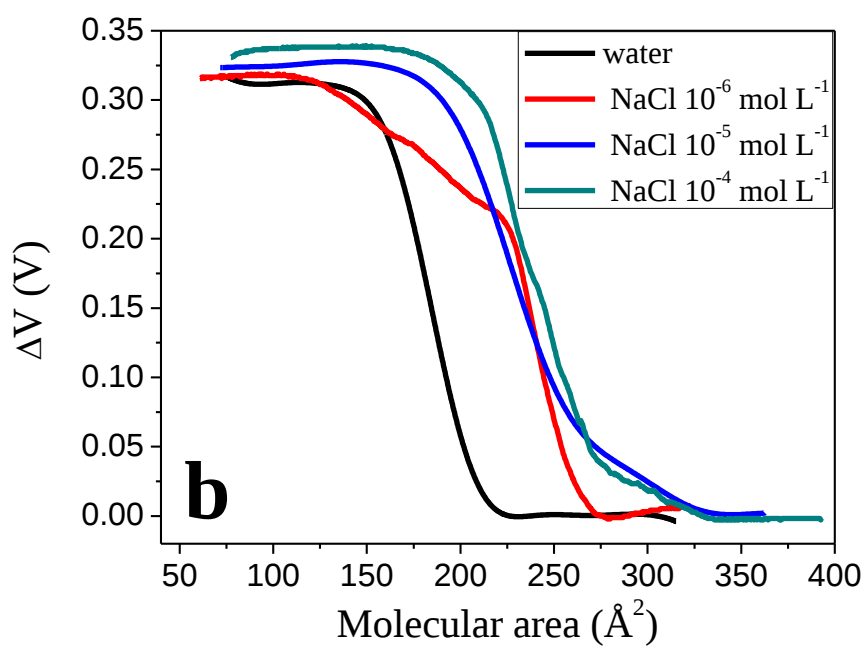
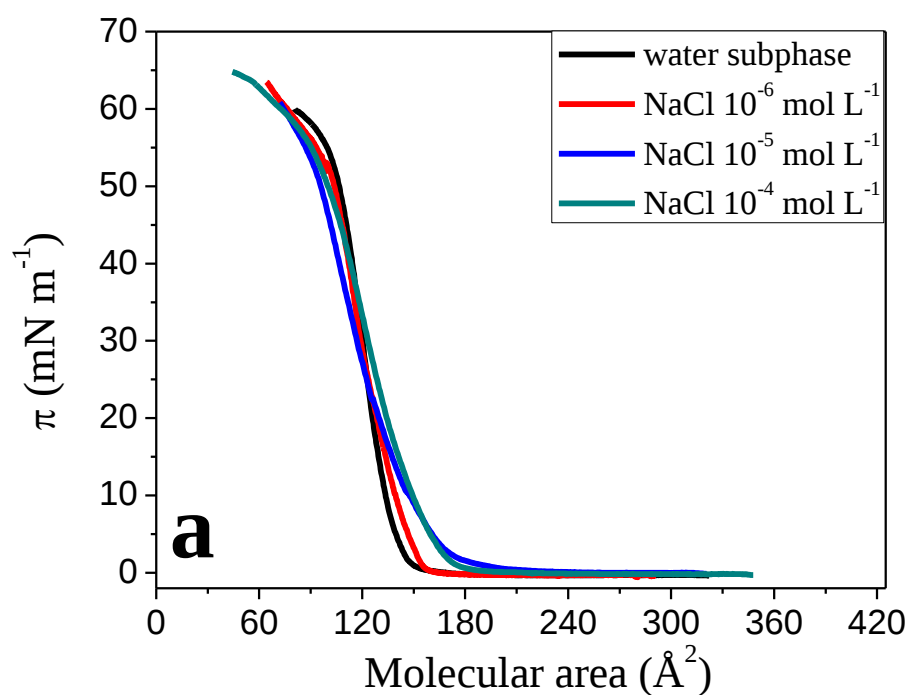


Fig. S4. Surface pressure-area isotherm (a) and Surface potential-area isotherm (b) of *Calix6* monolayers ($0.5 \text{ mg mL}^{-1}/\text{CHCl}_3$) on NaCl in concentration range of $1 \cdot 10^{-6}$ to $1 \cdot 10^{-4} \text{ mol L}^{-1}$.

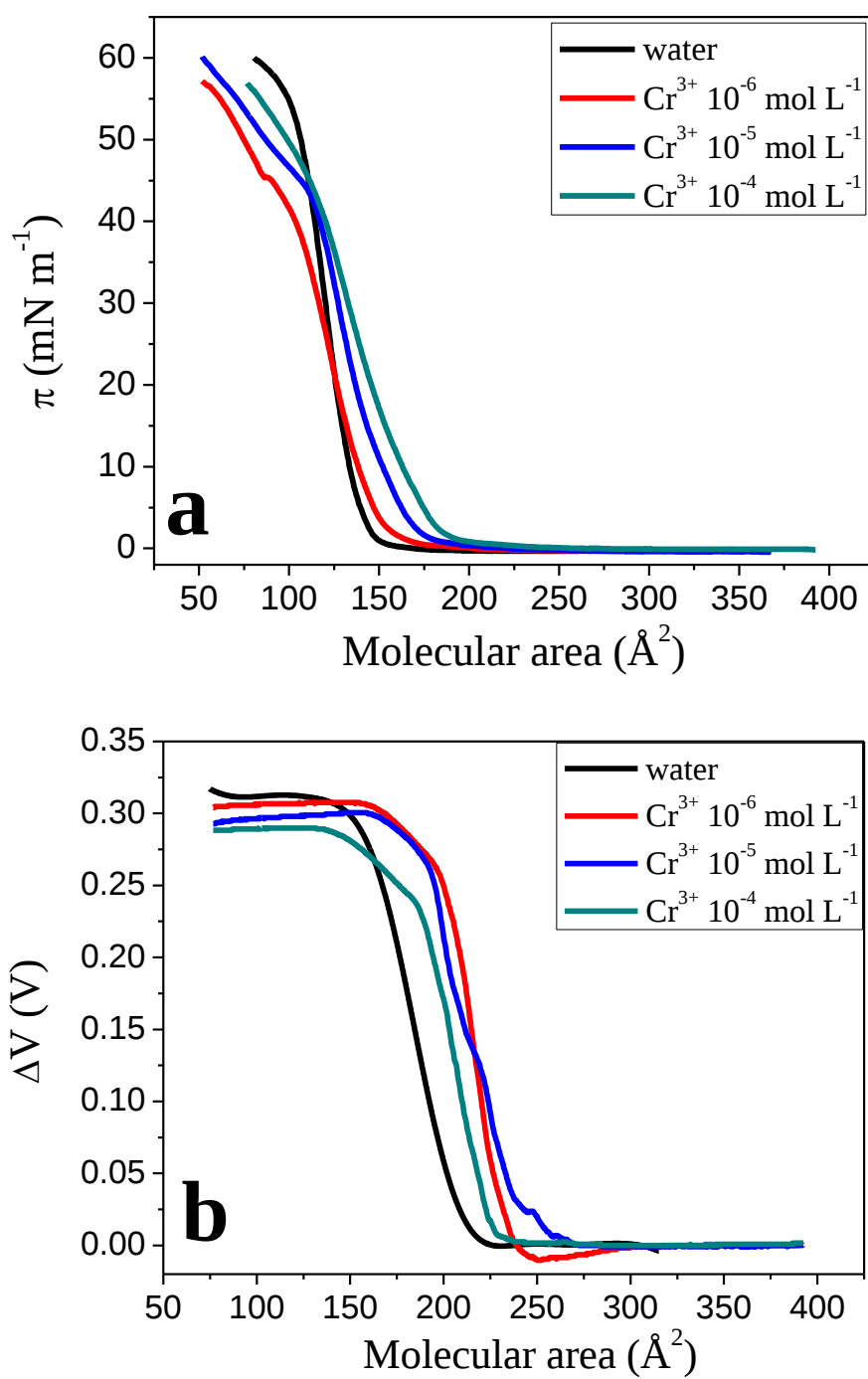


Fig. S5. Surface pressure-area isotherm (a) and Surface potential-area isotherm (b) of *Calix6* monolayers (0.5 mg mL⁻¹/CHCl₃) on CrCl₃ in concentration range of 1 × 10⁻⁶ to 1 × 10⁻² mol L⁻¹.

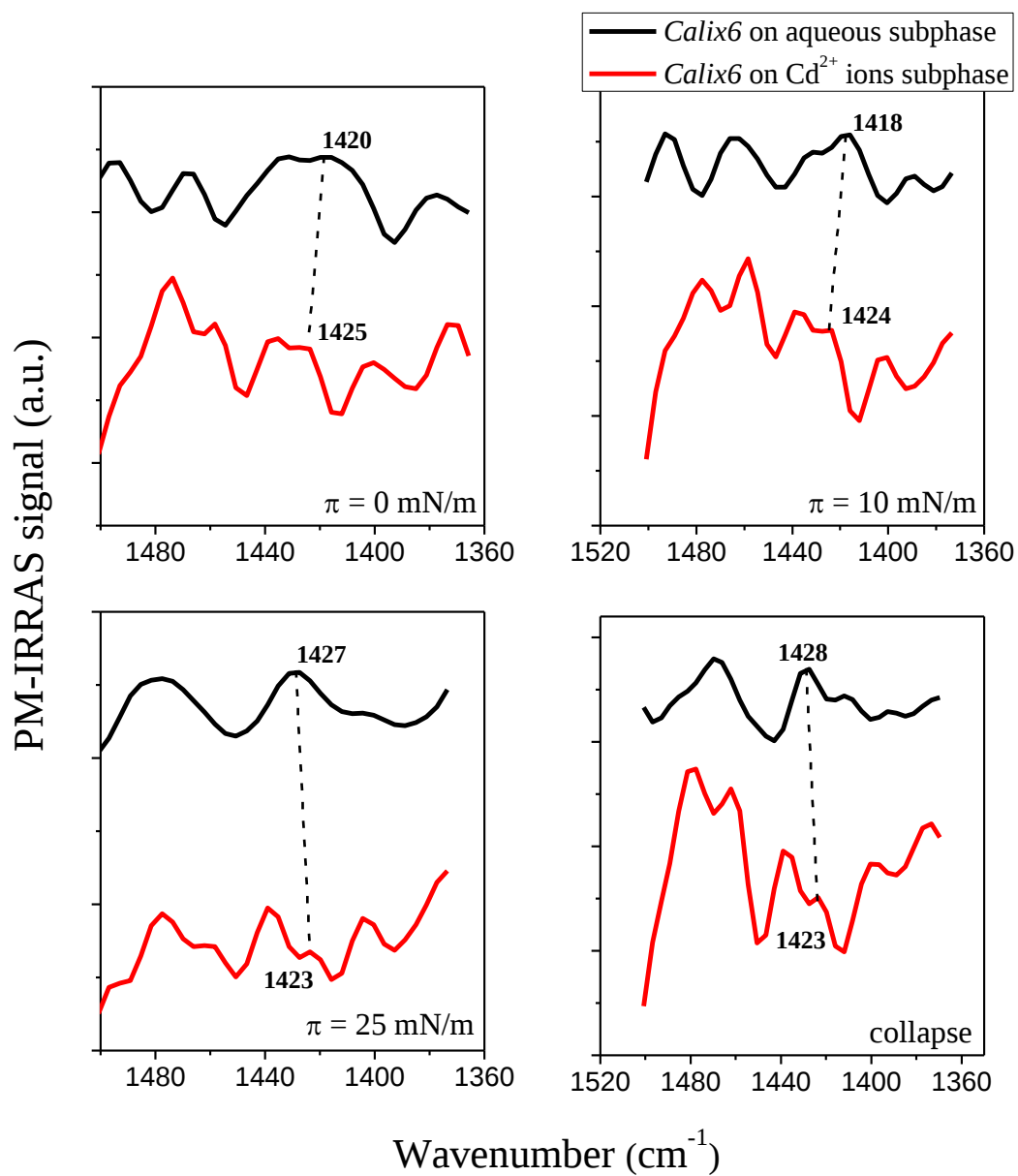
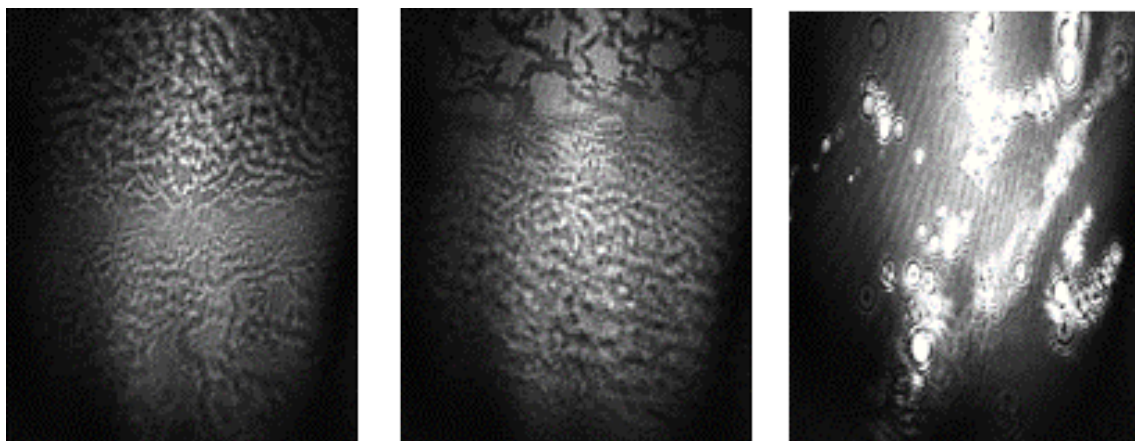


Fig. S6. PM-IRRAS spectra of *Calix6* monolayers ($0.5 \text{ mg mL}^{-1}/\text{CHCl}_3$) on pure water and Cd^{2+} ($9 \times 10^{-3} \text{ mol L}^{-1}$) subphases at $\pi = 0, 10, 25 \text{ mN m}^{-1}$ and in the collapse, in the range of C-OH in-plane bending vibration ($1800\text{-}1600 \text{ cm}^{-1}$)

***Calix6* on aqueous subphase**



***Calix6* on Cd^{2+} ions subphase**

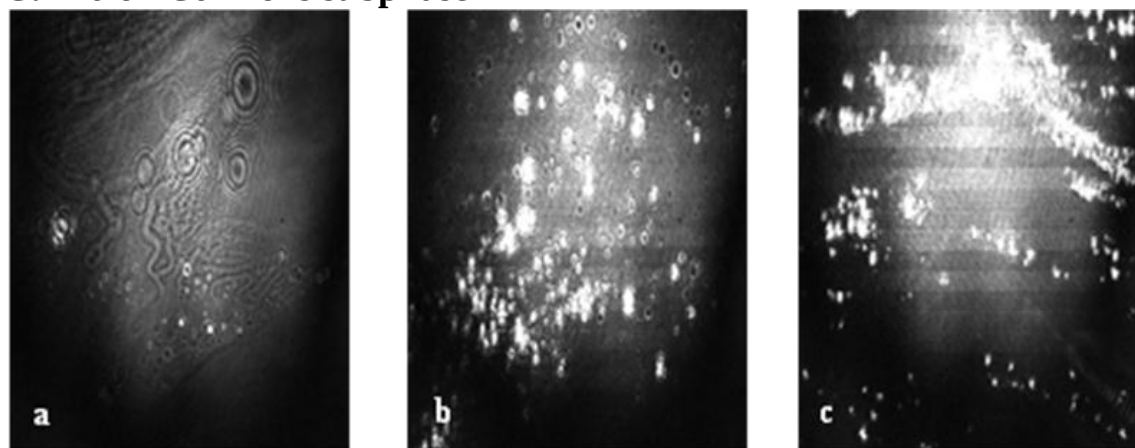


Fig. S7: BAM images for *Calix6* monolayers ($0.5 \text{ mg mL}^{-1}/\text{CHCl}_3$) on aqueous and Cd^{2+} subphases are shown under different surface pressures: (a) 0, (b) 5 and (c) 25 mN m^{-1} .