Charge State Switching of Single Molecules by AFM

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Abstract

p-phenylendiamines (PDs) serves as charge carriers in thin polymer films. Single molecules are charged by the AFM tip and Kelvin probe force microscopy is used to monitor the individual charge states of single polyPD molecules in real time.

Surface Potential of Single Molecule Charging

Redox Polyamines

Conclusions

• Polyamines are selectively charged in the PMMA films.
• Single molecule charging is demonstrated.
• Single molecules undergoing single electron transfer were observed in real time by AFM.

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