Polymerization effects and charge localization in eumelanin thin films

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We investigate which role is played by potassium atoms during the formation of eumelanin thin films. It is shown that the potassium effectively controls the granularity of the films. Of particular interest is the interplay with the substrate: on gold, for example, there exists evidence self-assembly. We also use density functional theory to study the dependence of the frontier orbitals on potassium content in the thin films.

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