

Publication

Transoid-to-Cisoid Conformation Changes of Single Molecules on Surfaces Triggered by Metal Coordination

JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)**ID** 4485497**Author(s)** Freund, Sara; Pawlak, Rémy; Moser, Lucas; Hinaut, Antoine; Steiner, Roland; Marinakis, Nathalie; Constable, Edwin C.; Meyer, Ernst; Housecroft, Catherine E.; Glatzel, Thilo**Author(s) at UniBasel** [Housecroft, Catherine](#) ; [Constable, Edwin Charles](#) ; [Freund, Sara](#) ; [Pawlak, Rémy](#) ; [Hinaut, Antoine](#) ; [Meyer, Ernst](#) ; [Glatzel, Thilo](#) ; [Marinakis, Nathalie](#) ; [Moser, Lucas](#) ; [Steiner, Roland](#) ;**Year** 2018**Title** Transoid-to-Cisoid Conformation Changes of Single Molecules on Surfaces Triggered by Metal Coordination**Journal** ACS Omega**Volume** 3**Pages / Article-Number** 12851-12856

Conformational isomers are stereoisomers that can interconvert over low potential barriers by rotation around a single bond. However, such bond rotation is hampered by geometrical constraints when molecules are adsorbed on surfaces. Here we show that the adsorption of 4,40-bis(4-carboxyphenyl)-6,60-dimethyl-2,20-bipyridine molecules on surfaces leads to the appearance of pro-chiral single-molecules on NiO(001) and to enantiopure supramolecular domains on Au(111) surfaces containing the transoid molecule conformation. Upon additional Fe adatom deposition, molecules undergo a controlled interconversion from a transoid to cisoid conformation as a result of coordination of the Fe atoms to the 2,20-bipyridine moieties. As confirmed by atomic force microscopy 1 images and X-ray photoelectron spectroscopy measurements, the resulting molecular structures become irreversibly achiral.

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