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Constructing low-dimensional molecular networks on metal surfaces

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Stellingen

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Constructing low-dimensional molecular networks on metal surfaces

van

Tuan Anh Pham

1. The subtle interplay between molecule–molecule and molecule–substrate interactions plays a crucial role in the formation of supramolecular networks on metal surfaces (*chapter 4*).
2. Tuning the position and number of bromine functional endgroups will influence the resulting intermolecular interactions and thus, determines the formation and geometry of the final molecular networks (*chapter 5*).
3. The dimensionality of molecular coordination networks can be determined to be either 1D or 2D via the choice of the molecular building block, e. g. by using either *cis*- or *trans*-isomers of cyano-functionalized porphyrins (*chapter 6*).
4. When performing Ullmann coupling reactions on surfaces, the split-off bromine atoms may interfere with the newly formed polymer networks (*chapter 7*).
5. The Cu(111) surface does not only act as a support, but also as a catalyst for the dehalogenation reaction in on-surface reactions and strongly influences the formation of polymer networks (*chapter 7*).
6. Stepwise growth of polymer networks on metal surfaces can be achieved by using the concepts of protecting group chemistry (*chapter 8*).
7. Team work plays an important role for obtaining good and meaningful results in research. This is especially true when working with ultrahigh vacuum systems.
8. If the PhD student is afraid of making mistakes, he/she will never truly understand what he/she is doing.
9. Smart PhD students always have a plan B or even a plan C for their research work.