

University of Groningen

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DOI:
[10.33612/diss.169358947](https://doi.org/10.33612/diss.169358947)

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2021

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Baker, B. (2021). *Molecular self-assembly of organic molecules on coinage metal surfaces*. University of Groningen. <https://doi.org/10.33612/diss.169358947>

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Propositions

Accompanying the dissertation

Molecular Self-Assembly of Organic Molecules on Coinage Metal Surfaces

by

Brian David Baker Cortés

1) Molecules seem to have life of their own when studying them at the nanoscale, their chemical structure is basically their personality – it allows them to either interact or not with other molecules.

2) The structure of two-dimensional networks on a surface may be influenced by the molecular coverage (Chapter 4).

3) The scanning tunneling microscope offers outstanding imaging capabilities at the nanoscale, which allow us to study atom exchange reactions that take place in the porphyrin core (Chapter 5).

4) Cyano endgroups allow higher in-plane coordination motifs on a surface compared to pyridyl endgroups (Chapter 5).

5) The substrate can sometimes supply the metal-atoms necessary for the formation of metal-organic coordination networks (Chapter 7).

6) An experiment under ultra-high vacuum conditions demands patience and resilience to unexpected outcomes.

7) The PhD journey requires a good degree of critical thinking and planning, but it also extends far beyond that and requires a good understanding of relational intelligence.

8) In scientific research we are immersed in a multicultural environment that lacks dedicated training of cultural awareness and that gives birth to unconscious biases.