Low-energy electron microscopy on two-dimensional systems : growth, potentiometry and band structure mapping

Kautz, J.

Propositions

accompanying the dissertation

"Low-Energy Electron Microscopy on Two-Dimensional Systems: Growth, Potentiometry and Band Structure Mapping"

1. No single experimental technique can accurately determine the structural composition of surfaces.
   Chapter 2 of this thesis

2. While the strong reaction of alkanethiols with silicon might lead to the formation of Self Assembled Monolayers (SAMs), their instability in air limits their applicability.
   Chapter 3 of this thesis

3. The short acquisition time for Low-Energy Electron Potentiometry makes potentiometric analysis of dynamic processes possible.
   Chapter 4 and 5 of this thesis

4. Band structure analysis of unoccupied states by electron reflectivity measurements can strengthen the interpretation of ARPES data.
   Chapter 6 of this thesis

5. The fact that several authors proposed different models for the Si(111)-Au-(5x2) structure based on DFT-calculations, shows that input from experiments remains indispensable.
   S. C. Erwin, Phys. Rev. Let. **91**, 206101 (2003), S. C. Erwin et al., Phys. Rev. B **80**, 155409 (2009), S. G. Kwon et al., Phys. Rev. Let. **113**, 086101 (2014).

6. While the review by Altman clearly shows that the large surface sensitivity of LEEM is one of its greatest strengths, the resulting sensitivity to contaminations makes it also its greatest weakness.
   M.S. Altman, "Trends in low energy electron microscopy." J. of Phys.: Cond. Mat. **22**, 084017 (2010).

7. The retrieval of phase information in LEEM as pursued by Duden et al. can shorten the acquisition time for LEEM potentiometry experiments even further.
   T. Duden et al., "Focal-Series Reconstruction in Low-Energy Electron Microscopy." Microsc. Microanal. **20**, 968 (2014).

8. Instead of philosophizing about the validity of Everett's relative-state theory as done by many authors in the book edited by Saunders et al., proponents of this theory should focus on problems that are difficult to solve by other quantum theories.
   S. Saunders et al., "Many Worlds?: Everett, Quantum Theory & Reality." Oxford University Press, (2010).

9. The recent decision of the Dutch government to stop paying for student allowances ("studiefinanciering"), will in the end cost more money than it saves.

10. In science, there is no such thing as a small project on the side.

11. Whether one is climbing a rock-face or the shoulders of giants, one should not forget to enjoy the climb itself as it might take a while before one can enjoy the view.

Jaap Kautz
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