

***Pilot Program for Coupled Multidisciplinary
Training and Fundamental Knowledge on
Nanoscale Phenomena***

First Stage, May 12-13, 2006, IPC-BAS, Sofia

May 12, 2006

9:30-10:30 Claudine Buess-Herman (Belgium)

Nanostructured surfaces for electrocatalysis

10:30-12:30 Joachim Krug (Germany)

Introduction to steps dynamics and steps instabilities

14:00-16:00 Reinhard Miller (Germany)

***Dynamics of adsorption of surfactants, polymers
and their mixture***

Characterization of liquid-liquid interfaces

May 13, 2006

9:30-11:30 Kurt Binder (Germany)

***Statistical thermodynamics of nucleation phenomena and the
significance of spinodal curves: status and perspectives***

11:30-12:30 Andreas Zielenka (Germany)

Electrochemical processes for nanostructured materials

Lecture Hall at IPC-BAS, Acad. G. Bonchev str., bl. 11



Claudine Buess-Herman (Belgium), *Nanostructured surfaces for electrocatalysis*




ULB CHANI

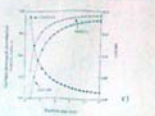
INTRODUCTION

Electrocatalysis is a main topic and remains a major challenge in Electrochemistry

Studies at well characterized single-crystal metal surfaces provide a model for nanoparticle catalysts



Low index surface electrodes
Stepped surfaces



Catalysis and Electrocatalysis, Ed. A. Wieckowski, E.R. Savinova, C.G. Vayenas, 2003, Marcel Dekker

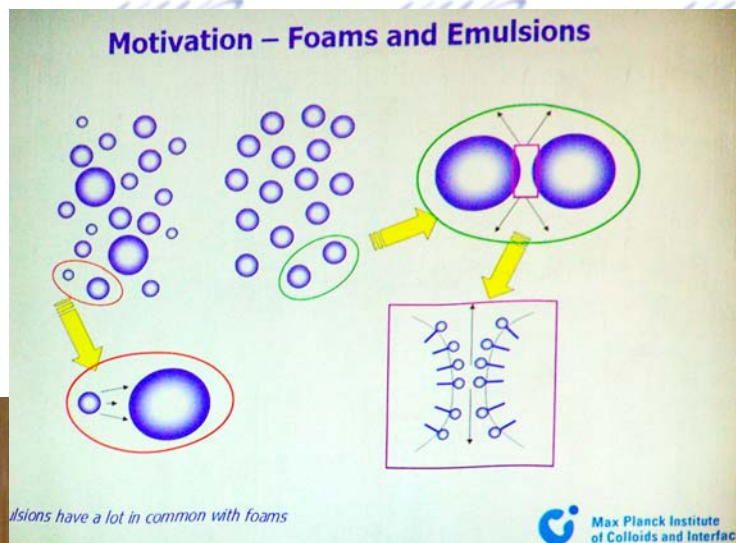


Joachim Krug (Germany), *Introduction to steps dynamics and steps instabilities*





Reinhard Miller (Germany), *Dynamics of adsorption of surfactants, polymers and their mixture Characterization of liquid-liquid interfaces*





Kurt Binder (Germany), *Statistical thermodynamics of nucleation phenomena and the significance of spinodal curves: status and perspectives*

STATISTICAL THERMODYNAMICS
OF NUCLEATION PHENOMENA:
Status and perspectives

OUTLINE

1. Introduction: homogeneous versus heterogeneous nucleation
2. Classical nucleation theory: static description
3. Extensions: dynamic descriptions
4. Density functional theories and nucleation near SPINODALS
5. Wetting phenomena and nucleation at walls
6. Spinodals as a Finite-Size Effect: The Droplet Evaporation/Condensation Transition





Andreas Zielonka (Germany), *Electrochemical processes for nanostructured materials*



