

Program

Sunday

16:00 Informal get together

19:00 Dinner

20:15 Welcome by the speaker of the FGLA

Gerlich, Dieter, Fakultät für Naturwissenschaften, TU Chemnitz, Germany

20:30 Some spectroscopic issues in astrophysical chemistry 17

Kroto, Harry, Dept. of Chemistry and Biochemistry, The Florida State University, USA

Monday

Gas phase: spectroscopy and observations

09:00 Metastable H_3^+ near the galactic center: interplay between radiative and collisional interactions 19

Oka, Takeshi, (discussion leader) Department of Chemistry, University of Chicago, USA

09:30 Absorption spectra of dark interstellar clouds 21

Krelowski, Jacek, Nicolaus Copernicus University, Torun, Poland

10:10 State specific probing of H_3^+ using overtone excitation 78

Glosik, Juraj, Mathem. and Physics Faculty, Charles University Prague, Czech Republic

10:30 Coffee

10:50 Gas phase laboratory studies of electronic spectra of carbon containing molecules of relevance to astrophysics 23

Maier, John, Department of Chemistry, University of Basel, Switzerland

11:30 Carbon clusters as interstellar molecules and grains 25

Krätschmer, Wolfgang, MPI für Kernphysik, Heidelberg,

Germany

- 12:10 Supersonic plasma expansions and molecular laboratory astrophysics** 79
Linnartz, Harrold, Universiteit Amsterdam, The Netherlands

12:30 Lunch

Gas phase: reactions of astrochemical importance

- 14:00 Introduction by the discussion leader** 27
Smith, Mark, Department of Chemistry, University of Arizona, USA

- 14:20 Experimental investigation of neutral-neutral reactions and energy transfer at low temperatures** 29
Sims, Ian, PALMS, Université Rennes, France

- 15:00 Modeling: the budget of hydrocarbons and deuterated variants** 31
Roueff, Evelyne, Observatoire de Paris, Meudon, France

- 15:40 A computational study of PAH formation (TP 1)** 110
Barthel, Robert, Institut für Phys. Chemie und Elektrochemie, TU Dresden, Germany

16:00 Coffee

- 16:30 Astrochemistry in ICR traps** 33
Joblin, Christine, Centre d'Etude Spatiale des Rayonnements, Toulouse, France

- 17:00 Reactions of small hydrocarbon ions CH_n^+ with H and D atoms at low temperatures (TP 5)** 140
Luca, Alfonz, Fakultät für Naturwissenschaften, TU Chemnitz, Germany

- 17:30 Reaction dynamics of radicals of astrochemical interests** 35
Kaiser, Ralf-Ingo, University of Hawai'i at Manoa, USA

- 18:00 Forming interstellar molecules: the need to know** 37
Herbst, Eric, The Ohio State University, Columbus, USA

18:40 End of session

19:30 Dinner

21:00 Poster session I

Tuesday**Protoplanetary disk chemistry and astrobiology**

- 09:00 Introduction by the discussion leader (TP 3)** 125
*Henning, Thomas, Max-Planck-Institut für Astronomie,
 Heidelberg, Germany*
- 09:10 Chemistry in disks - an observational approach** 127
*Schreyer, Katharina, Astrophysical Institute and University
 Observatory Jena, Germany*
- 09:30 AB Aurigae - the complete modeling cycle (TP 3)** 127
*Semenov, Dmitry, Max-Planck-Institut für Astronomie,
 Heidelberg, Germany*
- 09:50 Molecules of astrobiological relevance** 39
Charnley, Steven, NASA Ames, USA

10:30 Coffee**Basic theory**

- 11:00 Introduction by the discussion leader (TP 1)** 109
*Seifert, Gotthard, Institut für Physikalische Chemie und
 Elektrochemie, TU Dresden, Germany*
- 11:10 Interaction of molecular H₂ with aromatic hydrocarbons (TP 1)** 115
*Heine, Thomas, Institut für Physikalische Chemie und
 Elektrochemie, TU Dresden, Germany*
- 11:30 Theoretical analysis of capture-controlled bimolecular reactions of ions and radicals under low-temperature conditions** 41
*Troe, Jürgen, Institute of Physical Chemistry, University of
 Göttingen, Germany*
- 12:10 One- and two-photon processes in the OH radical** 81
*van der Loo, Mark P.J., Institute of Theoretical Chemistry,
 Nijmegen, The Netherlands*

**12:30 Future of laboratory astrophysics and -chemistry:
funding research, inspiring cooperations, training
young researchers**

*Introduction to a round table discussion by: H. Hasan, NASA, F-
D. Kuchta, DFG, A. Witt, UWG, E. Roueff, PCMI, D. Gerlich,
FGLA*

13:00 Lunch

14:00 Free afternoon

Sight seeing, enjoying the park, discussions, posters

20:00 Conference dinner

Wednesday

PAH's in the lab and in space

**09:00 Photoinduced chemistry within cold coronene clusters
in the gas phase** 43

*Brechignac, Philippe (discussion leader), Photophysique
Moléculaire, Université de Paris Sud, France*

**09:30 PAH's and the diffuse interstellar bands -
What have we learned with the new-generation of
laboratory and observational studies?** 45

*Salama, Farid, Space Science Division, NASA Ames Research
Center, Moffett Field, USA*

**10:10 Electronic absorption spectroscopy of PAHs in
supersonic jets and helium nanodroplets (TP 11)** 199

*Huisken, Friedrich, Max-Planck-Institut für Astronomie,
Heidelberg and FSU Jena*

10:30 Coffee

**11:00 Observations of neutral and ionized PAH's in the red
rectangle** 47

Witt, Adolf, Astronomy, University of Toledo, USA

**11:40 The flame chemistry preceding PAH formation:
quantitative detection of intermediate species** 49
*Kohse-Höinghaus, Katharina, Physikalische Chemie I,
Universität Bielefeld, Germany*

**12:20 Excited state calculations and electronic absorption
spectra of PAH's (TP2)** 121
*Scholz, Reinhard, Fakultät für Naturwissenschaften, TU
Chemnitz, Germany*

12:40 Lunch

Dust formation, theory and astrophysics

14:00 Introduction by the discussion leader 51
*Sedlmayr, Erwin, Zentrum für Astronomie und Astrophysik, TU
Berlin, Germany*

14:10 Dust formation in circumstellar environments 53
*Gail, Hans-Peter, Institut für Theoretische Astrophysik, Univ.
Heidelberg, Germany*

**14:40 The formation of circumstellar silicates based on new
vapor pressure data for SiO** 55
*Nuth, Joseph, NASA Goddard Space Flight Center Greenbelt,
USA*

**15:10 Molecular clusters in astrophysical dust formation
processes as link between gas phase and solid state** 57
*Patzer, Beate, Zentrum für Astronomie und Astrophysik, TU
Berlin, Germany*

**15:40 Spectral properties and photobleaching of silicon
nanocrystals (TP 6)** 151
*von Borczyskowski, Christian, Fakultät für Naturwissenschaften,
TU Chemnitz, Germany*

16:00 Coffee

Dust formation, experiments

- 16:30 Introduction by the discussion leader (TP 8)** 171
Mutschke, Harald, Astrophysikalisches Institut und Universitäts-Sternwarte, Jena, Germany
- 16:40 Carbynoid species in large free and supported carbon clusters** 59
Milani, Paolo, University of Milano, Italy
- 17:10 Formation of solids from impact-produced vapors** 61
Gerasimov, Mikhail, Space Research Institute of the RAS, Moscow, Russia
- 17:40 Synthesis of nanoparticles by laser pyrolysis** 63
Reynaud, Cécile, CEA Saclay, France
- 18:20 Spectral and structural properties of gas-phase condensed carbon nanoparticles (TP 8)** 174
Jäger, Cornelia, Astrophysikalisches Institut und Universitäts-Sternwarte, Jena, Germany
- 18:40 End of session**
- 19:30 Dinner**
- 21:00 Poster session II**

Thursday

From basic experiments to complex systems

- 09:00 Introduction by the discussion leader**
Leisner, Thomas, Technische Universität Ilmenau, Germany
- 09:10 Manipulation of interstellar molecules with electric fields: the OH radical** 65
Meijer, Gerard, Fritz-Haber-Institut der Max-Planck-Gesellschaft, Berlin, Germany

09:50 Chemistry of protoplanetary discs 67
*Ilgner, Martin, Queen Mary and Westfield College -
 University of London, UK*

10:30 Coffee

Surfaces, H₂ formation

11:00 Introduction by the discussion leader
*Lemaire, Jean Louis, Observatoire de Paris & Université de
 Cergy-Pontoise, France*

**11:10 Isotopic segregation of molecular hydrogen on water ice
 surface at low temperature: importance for interstellar
 grain chemistry** 77
*Amiaud, Lionel, Observatoire de Paris & Université de Cergy-
 Pontoise, France*

**11:25 Detailed experimental studies of the desorption of
 molecules from surfaces** 69
*Zacharias, Helmut, Physikalisches Institut, Uni Münster,
 Germany*

**12:00 Hydrogen recombination on astrophysically relevant
 surfaces** 71
*Biham, Ofer, Racah Institute of Physics, the Hebrew University,
 Israel*

12:30 Stochastic simulation of surface reactions 73
Charnley, Steven, NASA Ames, USA

13:00 Lunch

Departure

