PLASMA SCHOOL
Bad Honnef

Program of the school 2022

Saturday, October 1st:

Arrival/registration from 17.00 - 21.00 (dinner included)

Sunday, October 2nd:

08.45-09.00	Welcome and introduction (plot of the school, information) *Marc Böke and Marina Prenzel, Ruhr-Universität Bochum &* *Jan Benedikt and Holger Kersten, CAU Kiel, Germany*
09.00-10.30	Introduction I: Fundamentals of Plasma Physics *Achim von Keudell, Ruhr-Universität Bochum, Germany*
10.30-10.45	Coffee break
10.45-12.15	Introduction II: Fundamentals of Plasma Physics *Achim von Keudell, Ruhr-Universität Bochum, Germany*
12.30-13.30	Lunch
13.45-15.15	Plasma modelling I: Modelling of plasmas *Annemie Bogaerts, University of Antwerp, Belgium*
15.15-15.30	Coffee break
15.30-17.00	Plasma sources I: Non magnetized rf discharges *Michael Klick, Plasmetrex GmbH, Germany*
17.00-17.30	Forum with teachers
18.30-20.00	Dinner
20.00	Evening lecture: History of plasma physics *Holger Kersten, CAU Kiel, Germany*

Monday, October 3rd:

09.00-10.30	Plasma modelling II: Electron kinetics in atomic and molecular plasmas *Luis L. Alves, University of Lisbon, Portugal*
10.30-10.45	Coffee break
10.45-12.15	Plasma modelling III: Fluid modelling of discharge plasmas *Luis L. Alves, University of Lisbon, Portugal*
12.30-13.30	Lunch
13.45-15.15	Plasma diagnostics I: Basics of plasma spectroscopy *Sylvain Iseni, GREMI, CNRS/Univ. Orléans, France*
15.15-15.30	Coffee break
15.30-17.00	Plasma diagnostics II: Measuring electron density and ion flux *Felipe Iza, The Open University, United Kingdom*
17.00-17.30	Forum with teachers
18.30	School Dinner

Tuesday, October 4th:

09.00-10.30	Plasma sources II: High pressure thermal plasmas and sources *Tony Murphy, CSIRO, Australia*
10.30-10.45	Coffee break
10.45-12.15	Plasma sources III: High density magnetized plasma sources *Tsanko Tsankov, Ruhr-Universität Bochum, Germany*
12.30-13.30	Lunch
12.30-13.30	Modelling Workshop: 'Hands on a Boltzmann solver' *Luis L. Alves & Antonio Tejero, University of Lisbon, Portugal* **OR** Experimental Workshop I: 'Basics of laser absorption spectrocopy' *Olivier Guiatella, LPP, École Polytechnique, France* **OR** Experimental Workshop II: 'Spectroscopic instruments and their application' *Sebastian Burhenn, Ruhr-Universität Bochum, Germany &* *Sylvain Iseni, GREMI, CNRS/Univ. Orléans, France* **OR** Hiking etc. → Possible destinations can be requested from the organization team
18.30	Dinner

Wednesday, October 5th:

09.00-10.30	Plasma technology I: Material processing *Peter Awakowicz, Ruhr-Universität Bochum, Germany*
10.30-10.45	Coffee break
10.45-12.15	Plasma sources IV: Dielectric Barrier Discharges *Olivier Guaitella, CNRS, France*
12.30-13.30	Lunch
13.45-15.15	Plasma diagnostics III: Advanced optical diagnostics *Richard Engeln, ASML, Eindhoven, The Netherlands*
15.15-15.30	Coffee break
15.30-17.00	Demonstration on emission spectroscopy *Olivier Guaitella, CNRS, France &* *Sylvain Iseni, GREMI, CNRS/Univ. Orléans, France*
17.00-17.30	Forum with teachers
18.30	Dinner
20.00	Poster session

Thursday, October 6th:

09.00-10.30	Plasma diagnostics IV: Plasma-Surface Interactions *Jan Benedikt, CAU Kiel, Germany*
10.30-10.45	Coffee break
10.45-12.15	Plasma technologies II: Development at high pressure and in liquids *Peter Bruggeman, University of Minnesota, USA*
12.30-13.30	Lunch

Program of the master class 2022 on electric propulsion

Thursday, October 6th:

Arrival/registration from 17.00 - 21.00 (dinner included)

Regular lectures have duration of ~1.15h + 15min for final extended discussion

Friday, October 7th:

08:45-09:00	Welcome and introduction *Jan Benedikt and Holger Kersten, CAU Kiel, Germany*
09.00-11.00	Basics of electric propulsion for spacecraft: Hall thrusters: Principles, technologies and performance *Stephane Mazouffre, CNRS / U Orléans, France*
11.15-11.30	Coffee break
11.30-13.00	Diagnostics for EP in ground-based test facilities and in orbit *Thomas Trottenberg, CAU Kiel, Germany*
13.15-14.15	Lunch
14.30-16.00	Ion thrusters – from a niche technology to a game changer *Kristof Holste, U Gießen, Germany*
16.00-17.30	Master class poster session & coffee and biscuits
17.30- 19.00	In situ characterization of electric propulsion thrusters: Fundamentals, tools, and applications *Carsten Bundesmann, IOM Leipzig, Germany*
19.00	Dinner

Saturday, October 8th:

09.00-10.30	Basics of electric propulsion for spacecraft II: Gridded Ion Thrusters: Principles, technologies and performance *Hans Leiter, U Gießen, Germany*
10.30-10.45	Coffee break
10.45-12.15	Understanding the physics of ion thrusters with the help of modelling and simulations *Jean-Pierre Boeuf, U Toulouse, France*
12.15-12.20	Closing
12.30-13.30	Lunch