

**21<sup>st</sup> International Symposium on Small Particles and Inorganic Clusters  
ISSPIC XXI – Sunday, September 3<sup>rd</sup> to Friday, September 8<sup>th</sup> 2023 and  
Graduate Student Seminar Saturday, September 2<sup>nd</sup> to Sunday, September 3<sup>rd</sup>**

	Saturday 02.09.23	Sunday 03.09.23	Monday 04.09.23	Tuesday 05.09.23	Wednesday 06.09.23	Thursday 07.09.23	Friday 08.09.23		
09:00	Graduate Student Seminar	Graduate Student Seminar	Opening	Andrey Vilesov	Richard Palmer	Francesca Baletto	Bernd von Issendorff		
09:20			Scott Anderson	Lukas Bruder	Beatriz Roldán Cuenya	Yan Zhu	Gereon Niedner-Schatteburg		
09:40			María López						
10:00					Daniela Rupp	Christine Mottet	Joachim Sauer	Mihai Vaida	
10:20					Ewald Janssens		Knut Asmis	Lutz Schweikhard	
10:40					Stuart Mackenzie	Olof Echt	Gunther Andersson	Joost Bakker	Rajarshi Sinha Roy
11:00									Kevin Oldenburg
11:20					Lunch break	Lunch break	Lunch break	Lunch break	Uzi Landman Conclusion/Perspective
11:40									
12:00									
13:00	Lunch break	Registration Hotel Aquino	Simon Brown	Stefan Bromley	Excursions	Toshiharu Teranishi			
13:20									
13:40			Lai-Sheng Wang	Evan Bieske		Stefanie Dehnen			
14:00			Ori Cheshnovsky	Piero Ferrari		Matthias Hillenkamp			
14:20	Graduate Student Seminar		Peng Mao	Masashi Arakawa		Akira Terasaki			
14:40			Coffee	Coffee		Coffee			
15:00	Coffee		Tatsuya Tsukuda	Junko Yano		Ruth Signorell			
15:30			Ignacio Garzon	Nouari Kebaili		Denisia Popolan-Vaida			
15:50			Talks from Graduate Students	Mauro Stener		Kit Bowen			
16:10				Jiaye Jin		Olga Lushchikova			
16:30	Graduate Student Seminar								
16:50									
17:10									
17:30									
18:00		Welcome reception Hotel Aquino		Poster A		Poster B			
19:30					Evening event				

- 09:00 Opening
- 09:20 **Scott Anderson** (INV 1)  
*Sub-nano electrocatalysts: Cluster size and support effects*
- 10:00 **María J. López** (INV 2)  
*Activity of free and supported metal clusters for hydrogen applications*
- 10:40 **Ewald Janssens** (HT 1)  
*Hydrogen adsorption on transition metal doped aluminum clusters*
- 11:00 **Stuart Mackenzie** (HT 2)  
*Infrared investigations of molecular activation at metal centres*
- 11:20 Lunch
- 13:00 **Simon Brown** (INV 3)  
*Percolating networks of nanoparticles and brain-like computation*
- 13:40 **Lai-Sheng Wang** (INV 4)  
*Nanoclusters of Boron and metal borides*
- 14:20 **Ori Cheshnovsky** (HT 3)  
*Absorption measurements of hexagonal grown silicon nanorods utilizing Integrating sphere*
- 14:40 **Peng Mao** (HT 4)  
*Nanocluster assembly of disordered plasmonic metasurfaces*
- 15:00 Coffee break
- 15:30 **Tatsuya Tsukuda** (INV 5)  
*Electronic structures and optical properties of chemically-modified gold superatoms*
- 16:10 **Ignacio Garzon** (HT 5)  
*Effect of the metal-ligand interface on the chiroptical activity of cysteine-protected metal nanoparticles*
- 16:30 **Best talks from graduate student seminar**

- 09:00 **Andrey Vilesov** (INV 6)  
*Superfluid helium droplets*
- 09:40 **Lukas Bruder** (INV 7)  
*Coherent multidimensional spectroscopy of doped clusters in the gas phase*
- 10:20 **Daniela Rupp** (INV 8)  
*X-ray movies of melting and inflation in gas-phase plasmonic nanoparticles*
- 11:00 **Olof Echt** (HT 6)  
*The smallest dicationic rare gas clusters*
- 11:20 Lunch
- 13:00 **Stefan Bromley** (INV 9)  
*Silicate clusters and nanoparticles in the interstellar medium: Theory, experiment and observation*
- 13:40 **Evan Bieske** (INV 10)  
*Exploring structures and properties of carbon clusters – chains, rings and fullerenes*
- 14:20 **Piero Ferrari** (HT 7)  
*Laboratory infrared characterization of gas-phase sulfur clusters: solving the astronomic sulfur puzzle?*
- 14:40 **Masashi Arakawa** (HT 8)  
*Reaction of size-selected iron-oxide cluster cations with methane: A model study of chemical processes in mars' atmosphere*
- 15:00 Coffee break
- 15:30 **Junko Yano** (INV 11)  
*Water oxidation reaction in natural photosynthesis catalyzed by the  $Mn_4CaO_5$  cluster*
- 16:10 **Nouari Kebaili** (HT 9)  
*Reduction and biosorption of silver nanoparticles by bacteria*
- 16:30 **Mauro Stener** (HT 10)  
*Chiral metal clusters: efficient and accurate computational approaches for plasmons, Circular Dichroism and ligand dynamics*
- 16:50 **Jiaye Jin** (HT 11)  
*Ultrafast dynamics of mass-selected neutral silver clusters probed by femtosecond NeNePo spectroscopy*
- 17:30 Poster Session A

- 09:00 **Richard Palmer** (INV 12)  
*Nanoclusters in the real world: Insights into deposited clusters from aberration-corrected electron microscopy*
- 09:40 **Beatriz Roldán Cuenya** (INV 13)  
*From single atoms to clusters and nanoparticle catalysts in energy conversion*
- 10:20 **Christine Mottet** (INV 14)  
*General tendencies of chemical ordering in Pt-based nanoalloys*
- 11:00 **Gunther Andersson** (HT 12)  
*Atomic layer deposited overlayers on metal clusters*
- 11:20 Lunch
- 13:20 Conference Excursion
- 19:30 Evening Event (Museum of Natural History Berlin)

- 09:00 **Francesca Baletto** (INV 15)  
*And yet it moves: dynamical processes at the nanoscale*
- 09:40 **Yan Zhu** (INV 16)  
*Catalysis application in atomically precise metal clusters*
- 10:20 **Joachim Sauer** (HT 13)  
*Effect of Fe and Co substitution on the structure and reactivity of  $Al_8O_{12}^+$  cluster cations - a challenge for quantum chemistry*
- 10:40 **Knut Asmis** (HT 14)  
*Cryogenic ion trap vibrational spectroscopy of microhydrated  $Fe_3O_4^+$ : A gas phase model for iron oxide / water interactions*
- 11:00 **Joost Bakker** (HT 15)  
*IR characterization of metal mediated methane coupling*
- 11:20 Lunch
- 13:00 **Toshiharu Teranishi** (INV 17)  
*Transformations of inorganic nanocrystals by element substitution reactions*
- 13:40 **Stefanie Dehnen** (INV 18)  
*Multinary clusters: Atomically-precise nanoobjects with uncommon properties*
- 14:20 **Matthias Hillenkamp** (HT 16)  
*Are gold and silver miscible at the nanoscale?*
- 14:40 **Akira Terasaki** (HT 17)  
*Probing orbital characters of silver and doped-silver cluster anions by photoelectron imaging spectroscopy*
- 15:00 Coffee break
- 15:30 **Ruth Signorell** (INV 19)  
*Accelerated photochemistry within aerosol particles*
- 16:10 **Denisia Popolan-Vaida** (HT 18)  
*Evolution of submicron organic aerosol particles produced in wildfires: Cloud condensation nuclei activity of fresh and aged vanillic acid aerosol particles*
- 16:30 **Kit Bowen** (HT 19)  
*Electron-induced proton transfer (EIPT) and the nature of solvated electron-like clusters*
- 16:50 **Olga Lushchikova** (HT 20)  
*Solvation of  $Cu_n^{+/-}$  in He and  $H_2$  at ultra-cold temperatures*
- 17:30 Poster Session

- 09:00 **Bernd von Issendorff** (INV 20)  
*A closer look at the electronic structure of simple metal clusters*
- 09:40 **Gereon Niedner-Schatteburg** (HT 21)  
*Cryo studies of spontaneous N<sub>2</sub> activation and cleavage*
- 10:00 **Mihai Vaida** (INV 21)  
*Tracking the ultrafast reaction dynamics of methyl halide molecules adsorbed on metal clusters and embedded in molecular clusters at surfaces using femtosecond laser pulses*
- 10:40 **Lutz Schweikhard** (HT 22)  
*Delayed photodissociation of (poly)anionic tin clusters investigated at ClusterTrap*
- 11:00 **Rajarshi Sinha Roy** (HT 23)  
*Orbital magnetism in atomically precise metal clusters from ab-initio real-time TDDFT*
- 11:20 **Kevin Oldenburg** (HT 24)  
*Silver cluster plasmons revisited*
- 11:40 **Uzi Landman**  
 Conference conclusion and perspectives