



# Atoms, Molecules, and Materials in Extreme Environments



## MONDAY

08:00 REGISTRATION

08:30 TRYGVE HELGAKER  
& CARL FREDRIK STRAUMSHEIM  
*Opening*

08:50 ANAND THIRUMALAI  
*Glimpses of an Alien Chemistry: Atoms in Neutron  
Star Atmospheres*

09:30 STELLA STOPKOWICZ  
*Electronic Structure in Strong Magnetic Fields*

10:10 COFFEE BREAK

10:40 BERNIE SCHLEGEL  
*Computational Simulation of Molecules Interacting  
with Intense Laser Fields*

11:20 ROBIN SANTRA  
*Molecules at High X-ray Intensity:  
Challenges for Theory*

12:00 LUNCH

14:00 WOJCIECH GROCHALA  
*Alice in the High Pressure Wonderland--  
or Learning How to Be A Humble Theoretician*

14:40 WOJCIECH BARTKOWIAK  
*Molecular Electric Properties upon Spatial  
Confinement*

15:20 ROBERTO CAMMI  
*The eXtreme Pressure Polarizable Continuum  
Model*

16:00 COFFEE BREAK

16:30 PETER SCHMELCHER  
*Ultralong-Range Molecules in External Fields*

17:10 RAYMOND ASHOORI  
*A Method for Studying Tunnelling into Insulators:  
Discovery of a Sharp Tunnelling Resonance from  
Phonons of an Electronic Wigner Crystal*

17:50 POSTER SESSION

## TUESDAY

08:30 EUGENE GREGORYANZ  
*Solid Hydrogen and Its Isotopes at Extreme  
Conditions*

09:10 KRZYSZTOF PACHUCKI  
*Precision Physics with the Hydrogen Molecule*

09:50 COFFEE BREAK

10:20 AGNÈS DEWAELE  
*Synthesis of New Chemical Compounds Under  
Pressure*

11:00 ELKE PAHL  
*Melting in Extreme Environments*

11:40 LUKÁŠ FÉLIX PAŠTEKA  
*From Atomic Confinement to High Pressure*

12:20 LUNCH

14:00 DAVID CEPERLEY  
*Simulations of Dense Hydrogen*

14:40 EVA ZUREK  
*Theoretical Predictions of Unique Hydride Phases  
Under Pressure*

15:20 ANDREAS HERMANN  
*Quantum Modelling of Hydrogen-Rich Planetary  
Materials*

16:00 COFFEE BREAK

16:30 CARLO RIZZO  
*Rubidium Atoms in High Magnetic Field*

17:10 ANDY TEALE  
*Climbing Jacob's Ladder Under Extreme Conditions:  
Density-Functional Approximations with Non-Local  
Contributions for Atoms and Molecules in Strong  
Magnetic Fields*

17:50 TORU SHIOZAKI  
*Open-Shell Molecules in Strong Magnetic Fields*

20:00 BANQUET

## WEDNESDAY

08:30 HEIKO APPEL  
*Real-Time Evolution of Coupled Ehrenfest-Maxwell-  
Kohn-Sham Equations for Molecules Exposed to  
Strong Magnetic Fields and Intense Laser Fields*

09:10 ERIK TELLGREN  
*Quantum Chemistry of Molecules in Strong  
Magnetic Fields*

09:50 COFFEE BREAK

10:20 THOMAS JAGAU  
*Differences and Similarities Between  
Autoionization and Strong-Field Ionization*

11:00 LORENZ CEDERBAUM  
*On Systems With and Without Excess Energy in  
Environment: ICD and Other Interatomic  
Mechanisms*

12:00 PETER SCHWERDTFEGER  
*Closing*

12:10 LUNCH