

Preliminary program of the Symposium «The Periodic Table through Space and Time»

September 10, Tuesday

Morning session: **Plenary talks of the XXI Mendeleev Congress**

Please note that at this session E. van Dishoeck will present a plenary talk
“ORIGIN OF ELEMENTS AND CHEMISTRY IN SPACE”
All the participants are welcome.

Session 1: **Astrochemistry**

Chair: *E. van Dishoeck*

14:00-14:05 Opening the symposium

14:05-14:45 *Leen Decin*, Unravelling dust nucleation in astrophysical media using a self-consistent, non-steady state, non-equilibrium polymer nucleation model for AGB stellar winds (keynote talk)

14:45-15:15 *Masatoshi Ohishi*, Astrochemistry towards Seeds of Life (invited talk)

15:15-15:30 *Francesco Fontani*, Investigating the interstellar chemistry of phosphorus, the missing pre-biotic element

15:30-16:00 *Valery Shematovich*, Suprathermal atoms and molecules in astrochemistry (invited talk)

16:00-16:30 Coffee break

Chair: *V. Shematovich*

16:30-17:00 *Maria Drozdovskaya*, Ingredients for Solar-like Systems (invited talk)

17:00-17:15 *Pierre Hily-Blant*, The elusive origin of nitrogen in planetary systems

17:15-17:30 *Tamara Molyarova*, Astrochemical modelling of C/O ratio in protoplanetary disks

17:30-18:00 *Anton Vasyunin*, Complex Organic Molecules as Companions of Forming Stars (invited talk)

18:00-18:10 10 minutes break

18:10-18:25 *Maria Kirsanova*, Simulations of merged H/H₂ and C⁺/C/CO transitions in the Orion Bar

18:25-18:40 *Igor Zinchenko*, A survey of deuterated molecules in regions of high mass star formation

18:40-18:55 *Chris Ravindran Arumainayagam*, Cosmic chemistry: photochemistry vs. radiation chemistry

18:55-19:10 *Denis Sapirov*, Isomeric carbon-containing compounds of interstellar medium: structure, energy, and polarizability

19:10-19:25 *Aleksandr Nesterenok*, Chemical evolution in C-type shock waves

19:25-19:40 *Ekaterina Kuznetsova*, Investigating the iron 6.4 keV emission line origin in molecular clouds of the galactic center region

19:40-19:55 *Pavel Medvedev*, Elemental abundances in the hot intra-cluster medium

September 11, Wednesday

Morning Session: **Plenary talks of the XXI Mendeleev Congress**

Session 2: **Big Bang and Stellar Nucleosynthesis**

Chair: *A. Karakas* (tbc)

14:00-14:40 *Alain Coc*, Big Bang nucleosynthesis (keynote talk)

14:40-15:10 *Ken'ichi Nomoto*, Supernova Explosions of First Stars and their Nucleosynthesis (invited talk)

15:10-15:40 *Marco Limongi*, Massive stars: evolution, explosion and nucleosynthesis (invited talk)

15:40-15:55 *Vlad Yurchenko*, Nonthermal antineutrinos of Big Bang nucleosynthesis

16:00-16:30 Coffee break

Chair: *K. Nomoto* (tbc)

16:30-17:00 *Stephan Rosswog*, Neutron star mergers as sources of heavy elements (invited talk)

17:00-17:30 *Igor Panov*, Nucleosynthesis of heavy elements in extremely neutron-rich environments (invited talk)

17:30-18:00 *Amanda Karakas*, Heavy-element nucleosynthesis in low and intermediate-mass stars (invited talk)

18:00-18:10 10 minutes break

18:10-18:25 *Carolyn Doherty*, I-process heavy element nucleosynthesis

18:25-18:40 *Alexander Lutovinov*, INTEGRAL view of the production of elements in the space

18:40-18:55 *Kanji Mori*, Roles of ${}^7\text{Be}(n, p){}^7\text{Li}$ Resonances in Big Bang Nucleosynthesis with Time-dependent Quark Mass

18:55-19:10 *Yudong Luo*, Inhomogeneous primordial magnetic field and its impact on Big Bang nucleosynthesis

19:10-19:25 *Andrey Yudin*, Light nuclear clusters in supernova matter

19:25-19:40 *Sergei Blinnikov*, Nucleosynthesis reflected in light curves of type II Supernovae

September 12, Thursday

Morning Session: **Plenary talks of the XXI Mendeleev Congress**

Session 3: **Chemical Evolution of the Universe: Observations and Models**

Chair: *L. Mashonkina*

14:00-14:40 *Cristina Chiappini*, The Periodic Table and the assembly history of the Milky Way (keynote talk)

14:40-15:10 *Piercarlo Bonifacio*, The build-up of chemical elements through cosmic time: observations in the local Universe (invited talk)

15:10-15:40 *Chiaki Kobayashi*, The origin of elements and their evolution in galaxies (invited talk)

15:40-16:00 *Toshitaka Kajino*, Cosmic evolution of r-process elements: impact of neutron star merger and supernova (highlight talk)

16:00-16:30 Coffee break

Chair: *P. Bonifacio* (tbc)

16:30-17:00 *Lyudmila Mashonkina*, NLTE spectroscopy of metal-poor stars (invited talk)

17:00-17:30 *Nikos Prantzos*, On the impact of stellar rotation on the chemical evolution of the Milky Way thin and thick disks (invited talk)

17:30-17:45 *Andreas Koch*, Probing the periodic table in the outer halo

17:45-18:00 *Guillaume Guiglion*, Lithium: a journey through the Milky Way

18:00-18:10 10 minutes break

18:10-18:25 *Camilla Hansen*, An assessment of the origin of the elements through high-resolution stellar abundances

18:25-18:40 *Tatyana Sitnova*, Chemical composition of ancient stars as a key to nucleosynthesis in the first stars

18:40-18:55 *Boris Shustov*, How the Periodic Table travels from galaxies to voids

18:55-19:10 *Dominic McLoughlin*, Nucleosynthesis in nearby novae

19:10-19:25 *Maria Kalyashova*, Chemical composition of cosmic rays as a key to revealing their sources

19:25-19:40 *Dmitri Karasev*, Estimates of the extinction law and metallicity for the Galactic bulge stars

September 13, Friday

Session 4: **Elemental abundances: a key to stellar physics**

Chair: *B. Shustov*

9:00-9:40 *Corinne Charbonnel*, The chemical peculiarities of multiple stellar populations in globular clusters : Constraints from/for nuclear astrophysics (keynote talk)

9:40-10:10 *Sophie Van Eck*, Binary stars as fossils of past nucleosynthesis (invited talk)

10:10-10:40 *Norbert Przybilla*, Elemental abundances from massive stars: the present-day chemical composition of the local Milky Way (invited talk)

10:40-10:55 *Tatiana Ryabchikova*, Lanthanides in stellar atmospheres

10:55-11:25 *Grazina Tautvaisiene*, Carbon and nitrogen as probes of mixing processes in giant stars (invited talk)

11:25-11:55 *Hong-Liang Yan*, The lithium-rich giants and their origin (invited talk)

11:55-12:10 *Zeynep Bozkurt*, A chemical abundance survey of field red horizontal branch stars

12:10-12:25 *Melike Afsar*, Chemical abundances from the dust-obscured open cluster Trumpler 5

12:25-12:30 closing remarks

12:30-14:00 Farewell lunch

Posters

Astrochemistry

1. *Maria Kirsanova*, Desorption of complex molecules from dust grains in Orion Bar PDR
2. *Olga Kochina*, Deuterated isotopologues of water and other astrobiologically important species in regions of star formation
3. *Igor Zinchenko*, Chemical complexity in the S255IR region of high-mass star formation

Big Bang and Stellar Nucleosynthesis

4. *Jacqueline Den Hartogh*, The s process in rotating low-mass AGB stars: nucleosynthesis calculations in models matching asteroseismic constraints

Chemical Evolution of the Universe: Observations and Models

5. *Sergei Korotin*, Galactic evolution of copper in the light of NLTE computations
6. *Romain Lucchesi*, Extremely metal-poor stars in dwarf galaxies
7. *Roman Tkachenko*, Chemical evolution of the Galactic disc
8. *Evgeny Vasiliev*, Launching of hot gas outflow by disc-wide supernova explosions

Elemental abundances: a key to stellar physics

9. *Aleksandr Kholtygin*, What elements can be used to check the stellar pulsations?
10. *Sergei Korotin*, Carbon, nitrogen and oxygen in AFG- supergiants: the N/C vs N/O relation as an indicator of the star's evolution
11. *Mikhail Pogodin*, Herbig Ae/Be stars: spectroscopic signatures of magnetospheric accretion
12. *Anna Romanovskaya*, Abundances in atmospheres of Ap-stars: HD 188041 (V1291 Aql), HD 111133 (EP Vir), HD 118022 (78 Vir), HD 204411 and HD 110066 (AX CVn)
13. *Nadezhda Serebriakova*, Measurement of magnetic fields of stars with SLD method
14. *Andrey Stykovsky*, Tomography of high mass x-ray binary pulsars in the fluorescent 6.4 keV iron line
15. *Vadim Tsymbal*, Analysis of stellar spectra: SLD vs LSD
16. *Yaroslav Voronov*, Application of the probability current method to nuclear dynamical calculations in collisions with hydrogen
17. *Svetlana Yakovleva*, Inelastic processes in collisions with hydrogen