

**UK-Russia scientific workshop**  
**“Materials under extreme conditions”**

March 12-13, 2019

Conference hall,  
M.N. Mikheev Institute of Metal Physics, S. Kovalevskaya, 18

| TIME                              | TUESDAY, MARCH 12  |   |
|-----------------------------------|--|---|
| 9:15                              | COFFEE   |   |
| 9:45                              | Welcome speeches from<br>Director of the M.N.Mikheev Institute of Metal Physics<br><i>Academician Nikolay Mushnikov,</i><br>Chairman of the Ural Branch of Russian Academy of Sciences<br><i>Academician Valery Charushin,</i><br>and Her Majesty Consul-General in Ekaterinburg<br><i>Mr Richard Dewell</i> |   |
| Chair: <i>Prof. N. Mushnikov</i>  |  |   |
| 10:00                             | <i>Prof. P. Attfield</i>   | “Materials discovery at high pressure”  |
| 11:00                             | <i>Prof. S. Streltsov</i>  | “Novel iron oxides deep in Earth”   |
| 11:30                             | <i>Prof. S. Ovchinnikov</i>  | “Influence of spin crossover on electronic, magnetic and elastic properties of ferropericlase at lower Earth’s mantle conditions” |
| 12:00                             | LUNCH  |   |
| Chair: <i>Prof. P. Attfield</i>   |  |   |
| 13:00                             | <i>Prof. E. Gregorianz</i>   | “Superconducting hydrides: Experiment”  |
| 13:50                             | <i>Prof. I. Nekrasov</i>   | “Superconducting hydrides: Theory”  |
| 14:15                             | <i>Dr. E. Talantsev</i>  | “Classifying superconductivity in compressed H <sub>3</sub> S”  |
| 14:40                             | COFFEE   |   |
| Chair: <i>Prof. E. Gregorianz</i> |  |   |
| 15:00                             | <i>Dr. S. Skornyakov</i>   | “Electronic structure and phase transitions in the parent chalcogenide compound FeSe under pressure”                              |
| 15:20                             | <i>Dr. A. Belik</i>  | “High-pressure exploration of A-site columnar-ordered quadruple perovskites”  |
| 15:50                             | <i>Dr. A. Shorikov</i>   | “The influence of correlation effects on high spin to low spin and structural transition in FeS under pressure: DFT+DMFT study.”  |
| 16:10                             | RECEPTION: DRINKS AND INFORMAL DISCUSSIONS (Library hall)  |   |

| TIME                               | WEDNESDAY, MARCH 13      |  |
|------------------------------------|--------------------------|--|
| Chair: <i>Prof. S. Ovchinnikov</i> |                          |  |
| 10:00                              | <i>Prof. D. Khomskii</i> | “Systems with correlated electrons: pressure effects”  |
| 11:00                              | COFFEE                   |  |
| Chair: <i>Prof. S. Streltsov</i>   |                          |  |
| 11:20                              | <i>Dr. I. Leonov</i>     | “Electronic structure, magnetic state and lattice stability of correlated electron materials under extreme conditions” |
| 12:00                              | <i>Prof. V. Antonov</i>  | “Phase transformations in the H <sub>2</sub> O-H <sub>2</sub> system at high pressures”                                |
| 12:20                              | <i>Dr. I. Saitov</i>     | “Ab initio simulation of formation of conducting solid & fluid hydrogen under high pressures”                          |
| 12:40                              | CONCLUDING REMARKS       |  |
| 13:00                              | LUNCH                    |  |
| 14:00                              | CITY TOUR                |  |

| SPEAKER            | POSITION  |
|--------------------|---|
| J. Paul Attfield   | Chair of Centre for Science at Extreme Conditions,<br>Professor of Materials Science at Extreme Conditions,<br>School of Chemistry,<br>Centre for Science at Extreme Conditions,<br>University of Edinburgh, <i>Edinburgh, UK</i> |
| Sergey Streltsov   | Professor of RAS,<br>Head of Low Dimensional Spin Systems sector,<br>Quantum Nanospintronics laboratory,<br>Institute of Metal Physics, <i>Ekaterinburg, Russia</i>   |
| Sergey Ovchinnikov | Professor, Head of the scientific direction "Magnetism",<br>Kirensky Institute of Physics, <i>Krasnoyarsk, Russia</i>   |
| Eugene Gregoryanz  | Professor of High Pressure Physics,<br>School of Physics and Astronomy,<br>Centre for Science at Extreme Conditions,<br>University of Edinburgh, <i>Edinburgh, UK</i>   |
| Igor Nekrasov      | Corresponding member of RAS,<br>Principal researcher, Theoretical Physics laboratory,<br>Institute of Electrophysics, <i>Ekaterinburg, Russia</i>   |
| Evgeny Talantsev   | Senior researcher,<br>Department of Precision Metallurgy and Pressure Processing Technologies,<br>Institute of Metal Physics, <i>Ekaterinburg, Russia</i>   |
| Sergey Skornyakov  | Senior researcher, Optics of Metals laboratory,<br>Institute of Metal Physics, <i>Ekaterinburg, Russia</i>  |
| Alexei Belik       | Principal Researcher, Quantum Solid State Materials Group,<br>National Institute for Materials Science, <i>Tsukuba, Japan</i>   |
| Alexei Shorikov    | Senior researcher, Optics of Metals laboratory,<br>Institute of Metal Physics, <i>Ekaterinburg, Russia</i>  |
| Daniel Khomskii    | Professor, II Physical Institute,<br>University of Cologne, <i>Cologne, Germany</i>   |
| Ivan Leonov        | Researcher, Optics of Metals laboratory,<br>Institute of Metal Physics, <i>Ekaterinburg, Russia</i>   |
| Vladimir Antonov   | Head of High Pressure Physics laboratory,<br>Institute of Solid State Physics of RAS, <i>Chernogolovka, Russia</i>  |
| Ilnur Saitov       | Senior researcher, Atomistic Modelling & Simulation and Theory of<br>Condensed Matter and Nonideal Plasmas laboratory,<br>Joint Institute for High Temperatures of RAS, <i>Moscow, Russia</i>                                     |