Universal Structure Predictor: Evolutionary Xtallography (USPEX) workshops are pedagogical events aimed to train a new generation of users and developers of crystal structure prediction techniques. USPEX code is a powerful code, enabling prediction of 3D (crystals), 2D (surfaces, interfaces, 2D-crystals), 1D (polymers) and 0D (clusters) structures by global optimization. It has unique efficiency, especially for large and complex systems. In addition to the evolutionary crystal structure prediction, USPEX code features many other techniques, such as random sampling, metadynamics, minima hopping, particle swarm optimization, all of which can be used in real applications or tested against one another. USPEX is used by nearly 2100 researchers and several major companies, and is free for academic researchers.

Shiv Nadar University (SNU), U.P., India, in collaboration with Stony Brook University, NY, USA, organized the 8th USPEX workshop at SNU during January 20-24, 2015. The workshop was partially supported by Department of Science & Technology (DST), India, and International Union of Crystallography (IUCr), UK. This workshop has been organized first time in India and has received an overwhelming response since its announcement. In past, seven such workshops have been organized earlier to the current one at SNU. These were organized at Poitiers, France (June 2011), Xi’an, China (August 2011), Lausanne, Switzerland (October 2012), Stony Brook, USA (December 2012), Guilin, China (August 2013), Xi’an, China (January 2014), Montréal, Canada (August 2014).

The 8th USPEX workshop was attended by ~60 participants (undergraduate and graduate students, as well senior scientists) from all over the world. Workshop’s program involved theory based lectures, hands-on tutorial sessions, and round table discussions. Morning lectures were focused on the challenges for the crystal structure prediction, various ways to address them (in particular evolutionary algorithms), theory of energy landscapes, applications of crystal structure prediction and problems related to low-dimensional systems (clusters, surfaces, polymers). Afternoon tutorials were planned to expose participants to tackle a real research project, and special attention was paid to the tools for code installation, data analysis and visualization. This helped the participants to understand and use the USPEX code efficiently towards solving their research problems. In conclusion the 8th USPEX workshop was a huge success, with extremely positive feedback from all the participants and speakers.