

# Oral Contributions

## [MS33] Molecular compounds under high pressure

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### [MS33-01] Two-Component Organic Crystals at High Pressure. Elena V. Boldyreva<sup>a, b</sup>

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The studies of organic crystals at high pressures by diffraction and spectroscopic techniques, including single-crystal studies, are a well-established research field. At the same time, much less is known about the behavior of two-component systems at extreme conditions, in general, and at high hydrostatic pressures, in particular. This can be partly explained by the fact that it was not possible until very recently to get enough diffraction data, to be able to solve and refine crystal structures studied in situ by X-ray diffraction for so many atoms in the asymmetric unit for low-symmetry (monoclinic and triclinic) crystals. However, the multicomponent crystals are now in the focus of research in view of their important applications as molecular materials and pharmaceuticals, and also because of their important for the fundamental problems of crystal engineering, crystal growth and design, intermolecular interactions, organic mechanochemistry. High-pressure research is relevant for all these fields. In the present contribution I shall review recent achievements in this new direction of high-pressure research. Several multicomponent systems containing carboxylic acids and amino acids will be considered. The bulk compressibility, the anisotropy of strain and the stability with respect to pressure-induced structural phase transitions will be compared with those for the phases of

individual components. Examples of pressure-induced proton transfer, disordering and switching over of hydrogen bonds, as well as of conformational changes will be discussed. The work was partly supported by Integration Project of SB RAS No. 108, Presidium of RAS Project 24.38, RAS Project 5.6.4, and the Ministry of Education and Science of the Russian Federation (agreement No. 14.B37.21.1093).

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**Keywords:** co-crystals; hydrogen bonds; high pressure; phase transitions; molecular complexes