Specificity of Phase Diagrams with Molecular Compounds

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When compared to metals and inorganic compounds, molecular compounds offer particular features which will be examined during the lecture.

1) Number of systems…..
2) A large number of molecular compounds are chemically fragile.
3) Sequential ordering in the solid state (mesophases: i.e. liquid crystals)
4) Purification of the starting components could be a critical issue.
5) The propensity to crystallize could be low.
6) The crystal can be made of a large number of independent molecules.
7) Dynamic disorders or static disorder could be observed in the solid state.
8) Relatively high molecular mass: this introduces a great distortion between phase diagrams with solvents expressed in mass fraction and in mole fraction.
9) Most of the molecular compounds have several degrees of freedom in their conformations
10) Polymorphism is frequent and can reach large numbers (just think about water!)
11) Solvates, hetero-solvates, mixed solvates are frequent.
12) Specific bonds could exist e.g. steric interaction in host-guest associations., charge transfer, …..
13) Cocrystal, salts, hybrids salt-cocrystals, ‘abnormal salts’, ionic co-crystals, Clathrates, MOF, etc…
14) Miscibility gap in the liquid state are also frequent
15) Chirality is an important variable.
16) Racemization could blurr the variable: enantiomeric excess.

Starting from pure elements like Nitrogen and Sulfur, the lecture will exemplify various features of this attractive world up to proteins.
Preferred type of contribution:

☐ Poster

X Oral

NB: The final decision belongs to the Scientific Committee