

A Band Structure Engineering Concept Applied in Design of Novel Light Emitting Materials

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In my talk I will discuss how publicly available electronic band structure calculation data can be applied in design of novel light emitting materials. In recent years, we have been studying ternary fluorides possessing ultrafast intrinsic emissions cross-luminescence and intraband luminescence [1, 2]. In order to investigate ultrafast emissions we have developed new setups for time-resolved luminescence spectroscopy, which were exploited at various beamline of synchrotron radiation centres MAX IV Lab (Lund, Sweden) and DESY Photon Science (Hamburg, Germany). The obtained results and challenges in such research will be discussed.

References

- [1] J. Saaring, A. Vanetsev, K. Chernenko, et al., J. Alloys Compd. 883 (2021) 160916.
- [2] J. Saaring, A. Vanetsev, K. Chernenko, et al. J. Luminescence 244 (2022) 118729.