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A versatile platform based on the wide-gap II-VI material system has been developed in recent years that allows for the realisation of various photonic nanostructures for different applications. By integration of emitters like quantum wells or quantum dots (QDs) into optical resonators (i.e. microcavities with planar or three-dimensional optical confinement), the optical and electronic density of states can be tailored with a high flexibility. These building blocks can be combined in order to fabricate structures for basic research like e.g. the investigation of light-matter interaction in the weak and strong coupling regime or for devices like surface emitting lasers (VCSEL). An important feature of this material system is the fact that room-temperature operation can be achieved e.g. for a QD-based single photon source due to the comparatively high band offsets that can be realised using II-VI heterostructures.

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