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# Preparation and optical properties of Bi<sup>3+</sup>-doped K<sub>4</sub>SrGe<sub>3</sub>O<sub>9</sub> and corresponding glasses

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## Abstract

Optically active polycrystals, glasses and their combinations have applications in lighting, sensing and solar energy harvesting (1). In particular, materials with ultraviolet (UV) photoluminescence (PL) and persistent luminescence (PersL) exhibit great potential. Yet, only a few UV PersL materials have been discovered so far (2).

Here, we report a new UV PersL poly-crystal by taking K<sub>4</sub>SrGe<sub>3</sub>O<sub>9</sub> as a host and Bi<sup>3+</sup> ions as emitters, which was synthesized in air using a conventional solid-state reaction technique. The structure, morphology and optical properties of Bi<sup>3+</sup> doped K<sub>4</sub>SrGe<sub>3</sub>O<sub>9</sub> were characterized. In parallel, the compound was melt-quenched into corresponding glasses for a comparison.

## References

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(2) Xiong, Puxian, and Mingying Peng. *Optical Materials: X* 2 (2019): 100022.

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