

Special Issue

Next-Generation Metal Halides: Luminescence, Stability, and Device Applications

Message from the Guest Editor

Next-generation metal halides have become a key platform for optoelectronics and photonics. Their tunable electronic structures, strong light-matter interactions, and complex defect physics enable diverse luminescent behaviors, from excitonic to efficient self-trapped emission. They are promising for LEDs, lasers, photodetectors, and scintillators, but challenges such as stability, reproducibility, and lead-free alternatives limit large-scale use. Advances in compositional and dimensional engineering, passivation, and emission mechanisms have improved performance, enabling high efficiencies and stable prototypes. However, long-term stability remains critical. This Special Issue highlights progress in mechanisms, stability, synthesis, structural design, characterization, theory, and devices, aiming to guide scalable and durable technologies.

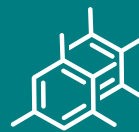
Guest Editor

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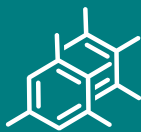


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