
Green Synthesis, Stability Improvement and Multifunctional Applications of luminescent metal halide nano crystal

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All inorganic metal halide nano- crystals are the key and core materials in the frontier hotspots such as display and photoelectric detection, etc. Unfortunately, they have suffered from poor moisture resistance, non-green synthesis, which are one of the main technical bottlenecks that greatly limit their potential application in the future. Moreover, their multi-functional applications are in urgent exploration. Here we reported several new strategies for improving moisture resistance, including the organic framework compound nesting, homogenous inorganic compound core-shell coating and super-hydrophobic nesting. The water resistance mechanisms are deeply and reasonably discussed. Finally, we successfully demonstrate their potential application in lighting, display, infrared night vision and information encryption, and liquid scintillator.



Short Bio:

Jing Wang received his Ph.D. degrees in Chemistry from Changchun Institute of Applied Chemistry, Chinese academy of sciences, China. He is a Professor of Sun Yat-Sen University, China. His research is concerning in the Nanoscience and Optical Functional Materials. He is the author and co-author of more than 200 peer-reviewed publications in scientific international journals including Adv. Mater., Light: Sci. & Appl., Adv. Funct. Mater., Adv. Sci., Small, etc. with total citations > 6300, h-index: 54. He has also granted more than 20 international and national patents. He got the Yunnan Province Science and Technology Award in 2019, Guangdong Province Science and Technology Award in 2019 and 2014 and Guangzhou Science and Technology Award in 2016.