Research Summary
(Independent Research)

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1 Background

The main topic that surrounds our research project is the use of CsPb-halide nanocomposites with organic passivating groups to make flexible Light Emitting Displays (LEDs). These CsPb-halide perovskites are a part of all halide perovskites, which are a subcategory of perovskites, which in the modern-day worldtodayhave become extremely viable and successful candidates in the generation and potential printability of different efficient light-emitting (screens) or absorbing (solar panels) displays.

While Light Emitting Displays and perovskites have existed for some years now, their efficiency is poor and they aren't the brightest displays one may find. With halide perovskites, what we observe is that there is better perovskite morphology, and more charge injection balance, which allows the CsPb-halide perovskite to be extremely bright and efficient in terms of energy usage and the output. The nanocomposite combination with the perovskite will allow us to develop more flexible LEDs.

2 About the Research

2.1 Research Questions

1. What is the effect of size and shape of perovskite nanocomposites on LED efficiency?
2. What developments in the appropriate combination of perovskites will help improve the white light generation capabilities of the perovskite nanocomposites?

2.2 Goal

Our overall research goal is to develop highly efficient white light generating light emitting displays that can be flexible.

3 Research Methodology

3.1 Procedures

A few steps we will be carrying out during this research project, are:

1. Synthesize perovskite nanocomposites of different sizes.
2. Make Light-Emitting Displays from these perovskite nanocomposites.

4 References

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