

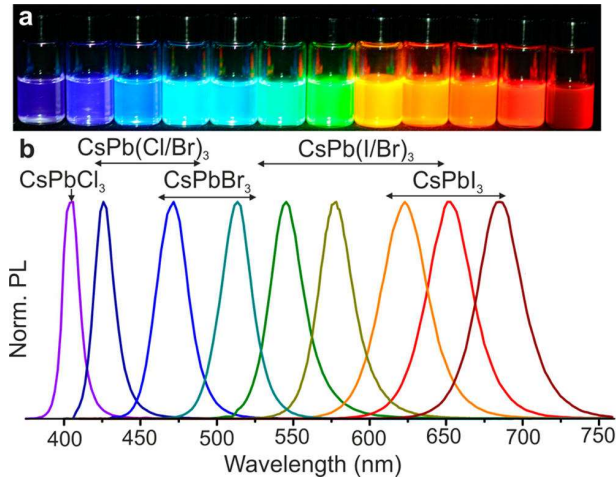
Demo: light-emitting perovskite nanoparticles in a stable host



Ted Cohen

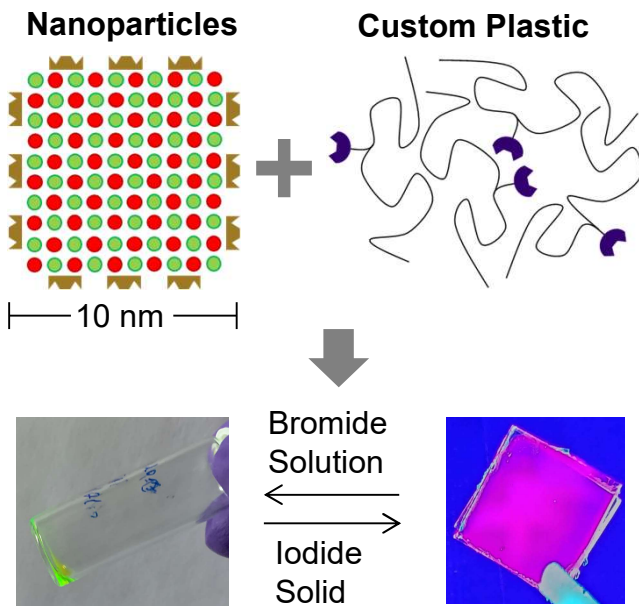
In collaboration with:

Yunping Huang, Tyler Milstein, J. Devin MacKenzie, Christine Luscombe, Daniel Gamelin



Protesescu, Yakunin, Bodnarchuk, Krieg, Caputo, Hendon, Yang, Walsh, Kovalenko. *Nano Lett.* **2015**, *15*, 3692.

Perovskite nanoparticles are incredibly small inorganic particles that are specifically designed to convert light to a very specific color with high accuracy and efficiency. Each individual particle is 10,000 times smaller than the width of a human hair, but a solid containing billions of these particles will glow dramatically when you shine a light on it. Many people want to use these particles in next generation TVs, but the particles typically dissolve over time and lose their ability to convert color.



In collaboration with the Luscombe, Gamelin and MacKenzie labs, we've developed a custom plastic material that can prevent these particles from dissolving. We designed these plastics to contain binding groups that strongly interlock with the surfaces of perovskite nanocrystals. With this technology, we have created perovskite solids that will convert color for as long as 9 months!

Try it for yourself!
Use the UV lights to illuminate the samples below and watch them shine!

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