A Materials Research Science and Engineering Center Program Highlight

An Industry-University Partnership to JumpStart OLED Production

New materials for next-generation organic electronics

The CCMR JumpStart program partners New York State small businesses that have well-defined technical problems with Cornell scientists who can solve these problems.

Researchers at Molecular Glasses, Rochester NY, had a portfolio of designs for new organic molecules suitable for organic light-emitting diodes (OLEDs), but no one to make these molecules. Through the JumpStart program, the company enlisted a Cornell chemistry group to synthesize several of these new materials. The Cornell chemists used single-pot reactions to make five different electrically conductive mixtures suitable for further testing.

As proof-of-concept, Molecular Glasses then turned then to engineers at the University of Rochester to fabricate a light-emitting diodes from these new materials. The orange-yellow light produced by the devices, shown at right, demonstrates the promise of these materials for organic electronics.

Since partnering with the CCMR, the company has received a $50,000 Dept. of Energy award to fabricate and test 100 OLED devices. The data generated by this trial will be used to engage OLED manufacturers.

Y.-C. M. Wu, et al., *J. Org. Chem. 80*, 12740–12745 (2015).

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