

Abstract Submitted
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Searching for new superconductors using perspectives from both chemistry and physics¹ ROBERT CAVA, Department of Chemistry, Princeton University — Although some may claim otherwise, the view from the lab bench is that it remains very difficult if not impossible to make reasonable predictions for what will be an entirely new superconducting material. This lends a considerable amount of drama to this field, as spectacular superconductors are periodically known to appear out of the blue sky. Nonetheless if ones business is to find new superconductors, a rational approach has to be taken to the discovery process. In our research we try both chemistry and physics-based perspectives to guide us. Mostly, our searches fail but sometimes we have discovered new superconductors, and not by accident. In this talk I will describe some examples of searches from our current work that have yielded new (Low T_c) superconductors based on both chemical and physical ideas. The postdoctoral fellows in my research group who have had primary responsibility for the searches that I will describe are Huixia Luo and Weiwei Xie.

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Robert Cava
Department of Chemistry, Princeton University

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