

Abstract Submitted
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Design for a Superconductor Discovery Engine (SCODEngine)¹

O. PAUL ISIKAKU-IRONKWE², The Center for Superconductivity Technologies (TCST) — One of the grand challenges of superconductivity is achieving a paradigm shift from discovery by serendipity to discovery by design. Periodic Table-based Maps that involve electronegativity, valence electrons and atomic number that correlate with superconducting transition temperature can be used to design novel superconductors. Combining these maps with experimental databases on superconductors, databases of crystal structures and integrating material design software engine, we can re-design many known superconductor families and predict novel systems. By adding search engine technology with a “knowledge discovery engine”, we produce a superconductor discovery engine (SCODEngine). The SCODEngine enables us to discover novel superconductors with the accelerated speed of a Google search. We have produced a primitive SCODEngine that may revolutionize novel superconductor search and discovery.

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