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(54) Title: THE COMBINATORIAL SYNTHESIS OF NOVEL MATERIALS

(57) Abstract

Giant magnetoresistive cobalt oxide compounds are produced by combinatorial synthesis. Combinatorial synthesis is done by using a substrate having an array of diverse materials thereon prepared by delivering components to predefined regions on a substrate and simultaneously reacting the components to form at least two materials. Other materials that can be prepared using these methods are covalent network solids, ionic solids and molecular solids. Examples are inorganic, organometallic, intermetallic, ceramic organic polymeric and composite materials. Once prepared, these materials can be screened for useful properties such as magnetoresistance. Thus, the present invention provides for the parallel synthesis and analysis of novel material having useful properties.