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(54) **Title:** LOW-TEMPERATURE FORMATION OF GROUP 13-15 CERAMICS AND GROUP 13-15-16 CERAMICS

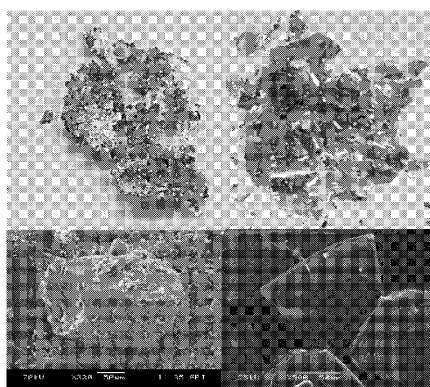


FIG. 2

(57) **Abstract:** Methods of making a ceramic of a Group 13-15 type or a Group 13-15-16 type by thermolyzing a discrete molecular precursor to the ceramic in an oxygen-containing atmosphere. In some embodiments, the discrete molecular precursor is bench-stable and comprises a Lewis acid-base pair or small cyclic compound containing at least one Group 13 element and at least one Group 15 element but does not include indium and phosphorus in combination with one another unless a Group 16 element is present. The thermolysis can be carried out in air, at atmospheric pressure, and at a temperature below about 400°C, if desired. In some embodiments, the discrete molecular precursor can be placed in a mold having a desired shape and the thermolysis performed while the discrete molecular precursor is in the mold so as to produce a ceramic product having the desired shape.

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