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(54) Title: INORGANIC HYDROGEN AND HYDROGEN POLYMER COMPOUNDS AND APPLICATIONS THEREOF (57) Abstract Compounds are provided comprising at least one neutral, positive, or negative hydrogen species having a binding energy greater than its corresponding ordinary hydrogen species, or greater than any hydrogen species for which the corresponding ordinary hydrogen species is unstable or is not observed. Compounds comprise at least one increased binding energy hydrogen species and at least one other atom, molecule, or ion other than an increased binding energy hydrogen species. One group of such compounds contains one or more increased binding energy hydrogen species selected from the group consisting of H_n, H_n^+, and H_n^-, where n is a positive integer, with the proviso that n is greater than 1 when H has a positive charge. Another group of such compounds may have the formula $[MH_mM'X]_n$ wherein m and n are each an integer, M and M' are each an alkali or alkaline earth cation, X is a singly or doubly negative charged anion, and the hydrogen content H_m of the compound comprises at least one increased binding energy hydrogen species. Methods of forming the compounds and numerous applications are disclosed.		