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(54) **ZEOLITIC MATERIALS WITH HETEROATOM SUBSTITUTIONS ON EXTERNAL SURFACE OF LATTICE FRAMEWORK**

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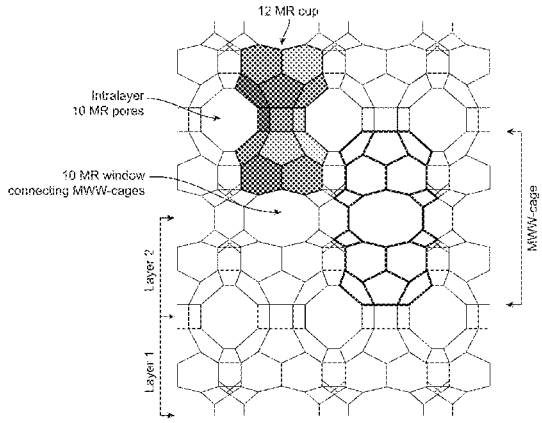
(57) **ABSTRACT**

A zeolite material is provided having non-boron heteroatoms on the external surface of the zeolitic material lattice framework and B heteroatoms, or silanols created from boron hydrolysis, throughout the remainder of the lattice framework. The lattice framework of the zeolite material comprises large pore 12 member ring or larger openings at the external surface of the framework, and 10 member ring or smaller openings beneath the external surface large pore openings. Also provided is a process for preparing the zeolitic material.

19 Claims, 2 Drawing Sheets