

ABSTRACT OF THE DISCLOSURE

METHOD TO ETCH NON-VOLATILE METAL MATERIALS

5 A method for etching a stack with at least one metal layer in one or more cycles is provided. An initiation step is preformed, transforming part of the at least one metal layer into metal oxide, metal halide, or lattice damaged metallic sites. A reactive step is performed providing one or more cycles, where each cycle comprises providing an organic solvent vapor to form a solvated metal, metal halide, or metal oxide state and
10 providing an organic ligand solvent to form volatile organometallic compounds. A desorption of the volatile organometallic compounds is performed.

Fig. 1