ABSTRACT

A METHOD OF FORMING A SURFACE COATING LAYER WITHIN AN OPENING WITHIN A BODY BY ATOMIC LAYER DEPOSITION

An improved new process for fabricating multilevel interconnected vertical channels and horizontal channels or tunnels. The method has broad applications in semiconductors, for copper interconnects and inductors, as well as, in the field of bio-sensors for mini- or micro-columns in gas or liquid separation, gas/liquid chromatography, and in capillary separation techniques. In addition, special techniques are described to deposit by atomic layer deposition, ALD, a copper barrier layer and seed layer for electroless copper plating, filling trench and channel or tunnel openings in a type of damascene process, to form copper interconnects and inductors.

FIGURE 4C