

PROCESS FOR FORMING NICKEL MOLDS

ABSTRACT

[00105] For forming a nickel mold, a metal and a corresponding etchant are selected such that the etchant selectively etches the metal over nickel. The metal is sputtered onto a surface of a template having nano-structures to form a sacrificial layer covering the nano-structures. Nickel is electroplated onto the sacrificial layer to form a nickel mold, but leaving a portion of the sacrificial layer exposed. The sacrificial layer is contacted with the etchant through the exposed portion of the sacrificial layer to etch away the sacrificial layer until the nickel mold is separated from the template. Subsequently, the nickel mold may be replicated or scaled-up to produce a replicate mold by electroplating, where the replicate mold has nano-structures that match the nano-structures on the template. The metal may be copper.

FIGURE 1C