Removal Process of Si Sacrificial Layer for Ni 3-Dimentional Structure using F radicals and NO Gas

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Micromachining techniques involving release etch processes have been developed and used widely in the fabrication of Microelectromechanical systems(MEMS). We report on the release etching for removal process of polysilicon sacrificial layer for 3-dimensional metallic structure. A process is presented for the fabrication of Ni 3-dimensional structure, using isotropic silicon fast release etching process by NF_3 remote plasma with NO direct injection of bottom and side wall were newly proposed and investigated. The influence of opening width size, gas conditions, and release etching time has been studied.