



## Formation of cavities in prefabricated silicon wafers

### Solution and its benefits

Cavities (6) are formed in prefabricated silicon wafers by forming a thin porous layer on a surface to be processed such that etchants can be passed through the porous layer into the cavities being etched and depositing a supplementary layer (7) in order to render to material of the porous layer impermeable to gases.

### Competitive advantage

The process does not affect the thickness of the structural layer on silicon-on-insulator substrate.

### Technical description

Formation of cavities in prefabricated silicon (Si) wafers having first silicon (Si) layer (1) and second monocrystalline Si layer or a structural layer (3) oriented parallel with the first Si layer and an insulating layer (2) situated between the first and second layers involves:

- fabricating the second Si layers windows (4) extending through the thickness of the layer
- etching cavities in the insulating layer by etchants passed to the layer via the fabricated windows
- forming a thin porous layer on the surface to be processed such that etchants can be passed through the porous layer into the cavities being etched; and
- depositing a supplementary layer in order to the material of the porous layer impermeable to gases.

### Intellectual property

KIIHAMÄKI J: METHOD FOR FORMING A CAVITY STRUCTURE ON SOI SUBSTRATE AND CAVITY STRUCTURE FORMED ON SOI SUBSTRATE

- Priority date: 20011001
- WO 2003030234 A1, FI 2001001922 A, EP 1433199 A1, KR 2004037218, US 20040248376 A1, JP 2005504644 W, CN 1561539 A, US 6930366 B2, CN 1288724 C
- IPC RECLASSIF.: B81C0001-00 [I,A]; B81C0001-00 [I,C]; H01L0021-70 [I,C]; H01L0021-762 [I,A]



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#### 10 reasons for technology partnering with VTT

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8. Collaboration with TOP 50 R&D companies in Finland
9. Global R&D partnership with 50 Fortune 500 companies
10. Market driven multi-disciplinary solutions

### Additional information

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