

## TOPICAL REVIEW

### 3D heterostructures and systems for novel MEMS/NEMS

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**Abstract.** In this review, we consider the application of solid micro- and nanostructures of various shapes as building blocks for micro-electro-mechanical or nano-electro-mechanical systems (MEMS/NEMS). We provide examples of practical applications of structures created by MEMS/NEMS fabrication. Novel devices are briefly described, such as a high-power electrostatic nanoactuator, a fast-response tubular anemometer for measuring gas and liquid flows, a nanoprinter, a nanosyringe and optical MEMS/NEMS. The prospects are described for achieving NEMS with tunable quantum properties.

**Keywords:** micro-electro-mechanical systems (MEMS), nano-electro-mechanical systems (NEMS), MEMS/NEMS heterostructures

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