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**Materials selection in micro- or nano-mechanical design: Towards new Ashby plots for small-sized materials**

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**Abstract**

Conventional Ashby plots for material selection may not appropriately describe material properties at small-length scales, new plots taking account of size effects are urgently needed for micro- or nano-mechanical design. Here, I show strength–modulus, strength–density, and size effect–Peierls stress plots for various solid materials at small scales.

Keywords: Size effect; Plastic deformation; Micro-compression; Focused ion beam; Small scales; Ashby plots

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**1. Introduction**

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