Minimizing the Variation in Performance by Optimizing the Design Parameters

A novel design algorithm dramatically reduces performance variations in Micro-electro-mechanical systems and other technologies, resulting in more reliable manufactured products.

Researchers at Purdue University have developed a design algorithm for Micro-electro-mechanical systems that minimizes the variation in performance due to fabrication or manufacturing. The algorithm works by looking at the variations that are possible with a fabrication technology and searching for the design that most reliably achieves the desired performance with those variations. The result is an optimized design with less performance variation due to the fabrication, manufacturing, or external disturbances. In practice the algorithm reduced the performance variation in MEMS and AFM designs by 60% and it can also be used for other technologies.

Advantages:

- Minimizes effects of process variation

TRL: 5

Intellectual Property:

Provisional-Patent, 2013-04-14, United States | PCT-Patent, 2014-03-20, WO | NATL-Patent, 2015-10-14, United States | NATL-Patent, 2015-11-13, India | NATL-Patent, 2016-03-01, European Patent

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