

Compliant Mechanism made by Additive Manufacturing

Lionel Kiener, CSEM, Switzerland

The current status of the development of a Compliant Mechanism based on Additive Manufacturing (COMAM) will be presented. This GSTP project is done in partnership with Almatech (CH) and 3D Precision (CH). The new geometric possibilities offered by Additive Manufacturing (AM) have allowed us to develop, build and test innovative concepts for compliant mechanisms with almost no support structure under the flexure blades. Bringing together CSEM's experience in the design and development of high-performance flexural elements and mechanisms for more than 30 years has opened the doors to new opportunities. The design for AM, topology optimization, manufacturing, followed by the 3D metrology will be presented to highlight the complete development flow of this compliant rotational reducer mechanism