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## Reduction of stress induced bending in MEMS suspended membrane

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**M**EMS suspended membrane is used as moveable mirror in tunable Fabry-Pérot (FP) filters and tunable Lasers. Since the electrical and optical properties of the FP filters and VSCSELs are highly dependent on the parallelism of the suspension holding the membrane in place, therefore, it has crucial role in the performance of these devices. Any bending in the suspensions results in displacement of the membrane which, in turn adversely affects the output

properties of these devices. In our research work we present a multilayer suspension design with the aim to produce bend-less suspensions by compensating the stress of the materials and balancing the clock wise and counter clock wise moments within the multilayered structure. This new approach enables us to successfully reduce the displacement of the membrane to 76.7nm from several micrometer.

### Biography

Muhammad Luqman Haider has completed his MS at the age of 24 years from Balochistan University of Information Technology, Engineering and Management Sciences, Quetta, Pakistan. He is currently working as Laboratory Engineer at Balochistan University of Information Technology, Engineering and Management Sciences, Quetta, Pakistan. His research paper on "Stress Optimization for a MEMS Multilayer fixed-fixed beam" is published on the OPTIK journal of Elsevier.

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