



## THE MORPHIC PROJECT: ENABLING LARGE SCALE PROGRAMMABLE PHOTONIC CIRCUITS USING MEMS

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**Abstract:** In MORPHIC, we are enhancing the capabilities of already established silicon photonics platform with low-power and non-volatile MEMS actuators to achieve programmability and re-configurability of the photonic circuits. The combining of high speed silicon photonics, non-volatile MEMS actuation, electronics controlled reconfigurable connectivity and high level design methodologies and programming interface in a package will lead to a complete Field-Programmable Photonic Integrated Circuits (FP-PIC) platform. Ultimately, technology platforms for both generic FP-PIC and Application-Specific Photonic Integrated Circuits (AS-PIC) with possibility of volume manufacturing will be demonstrated.

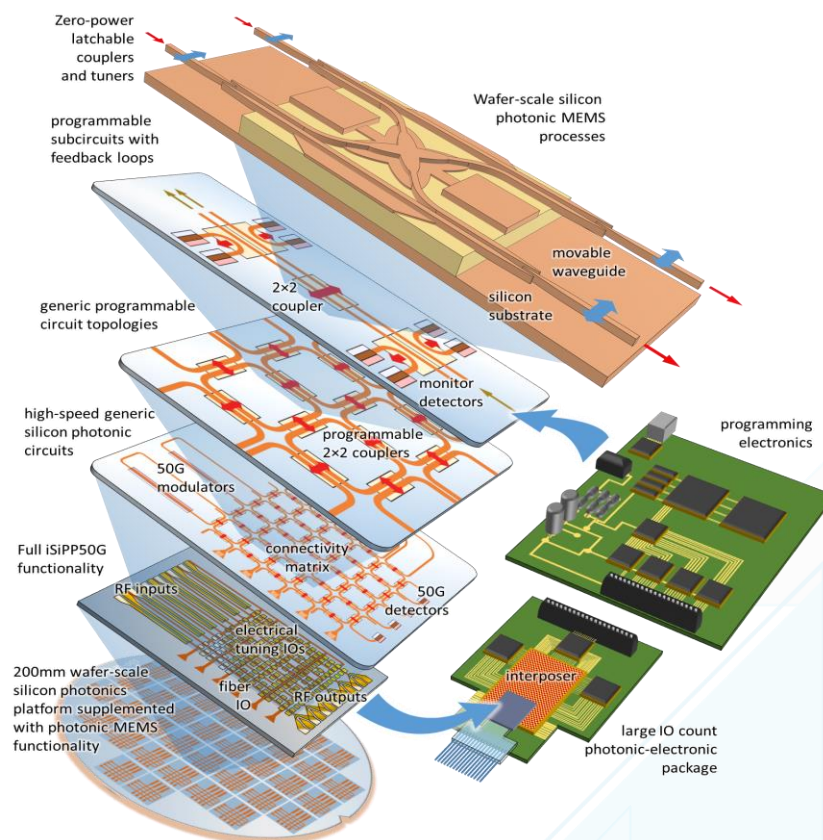


Fig 1: The proposed generic Field-Programmable Photonic Integrated Circuits (FP-PIC) using non-volatile MEMS building blocks.