Photonics, a Key Enabling Technology and Development in Silicon Photonics

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Abstract:

Photonics technology has matured enough and the emerging silicon photonics is showing a great potential to combine both photonics and electronics on the same silicon chip. Design and optimization of silicon strip and slot waveguides and power, mode, and polarization splitters, spot-size converters and biosensors will be presented by using computationally efficient and rigorous full-vectorial finite-element based numerical approaches.

Keywords- Photonic Devices, Silicon Photonics

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B. M. Azizur Rahman received the B.Sc.Eng and M.Sc.Eng. degrees in Electrical Engineering with distinctions from Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh, in 1976 and 1979, respectively. He also received two gold medals for being the best undergraduate and graduate students of the university in 1976 and 1979, respectively. In 1979, he was awarded with a Commonwealth Scholarship to study for a PhD degree in the UK and subsequently in 1982 received his PhD degree in Electronics from University College London.

In 1988, he joined City, University of London, as a lecturer, and became a full Professor in June 2000. At City, he leads a large research group on Photonics Modelling, specialised in the use of rigorous and full-vectorial numerical approaches to design, analyse and optimise a wide range of photonic devices. He has published more than 550 journal and conference papers, and his journal papers have been cited more than 4900 times and h-index of 33. He has supervised 31 students to complete their PhD degrees as their first supervisor and received more than £11 M in research grants. Prof. Rahman is Life Fellow of the IEEE, and Fellow of the Optical Society of America and the SPIE.