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Advances in Integrated Photonic Signal Processing

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Abstract: Photonic signal processing is attractive because it leverages the advantages of the optical domain to benefit from the wide bandwidth, low loss, and natural immunity to electromagnetic interference (EMI) that photonics offers. Recently there has been a strong drive to realise photonic integrated circuits using silicon photonics. Advances in integrated microwave photonic signal processing and sensing are presented. These include optical single sideband modulators, optical vector network analysers with high resolution, multi-function processors, and integrated photonic sensors using optical micro-ring resonators that demonstrate extremely high sensitivity. These microwave photonic processors provide new capabilities for the realisation of high-performance signal processing and sensing.



Robert A. Minasian is a Chair Professor with the School of Electrical and Information Engineering, University of Sydney, Australia, and is the Director of the Fibre-optics and Photonics Laboratory. His research encompasses photonic signal processing and microwave photonics, optical communications and phased arrays. He has contributed over 360 publications in these areas.

Professor Minasian is a Fellow of IEEE, and is a Fellow of the Optical Society of America. He was the recipient of the ATERB Medal for Outstanding Investigator in Telecommunications, awarded by the Australian Telecommunications and Electronics Research Board.

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