EDITORIAL

Frontiers in semiconductor-based devices

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EDITORIAL

Frontiers in semiconductor-based devices

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This special cluster of *Journal of Physics D: Applied Physics* reports proceedings from the Frontiers in Semiconductor-Based Devices Symposium, held in honor of the 60th birthday of Professor Pallab Bhattacharya by his former doctoral students. The symposium took place at the University of Michigan, Ann Arbor on 6–7 December 2009.

Pallab Bhattacharya has served on the faculty of the Electrical Engineering and Computer Science Department at the University of Michigan, Ann Arbor for 25 years. During this time, he has made pioneering contributions to semiconductor epitaxy, characterization of strained heterostructures, self-organized quantum dots, quantum-dot optoelectronic devices, and integrated optoelectronics. Professor Bhattacharya has been recognized for his accomplishments by membership of the National Academy of Engineering, by chaired professorships (Charles M Vest Distinguished University Professor and James R Mellor Professor of Engineering), and by selection as a Fellow of the IEEE, among numerous other honors and awards.

Professor Bhattacharya has also made remarkable contributions in education, including authorship of the textbook *Semiconductor Optoelectronic Devices* (Prentice Hall, 2nd edition) and the production of 60 PhD students (and counting). In fact, this development of critical human resources is one of the biggest impacts of Professor Bhattacharya’s career. His guidance and dedication have shaped the varied professional paths of his students, many of whom currently enjoy successful careers in academia, industry, and government around the world. This special cluster acknowledges the importance of Professor Bhattacharya’s influence as all of the contributions are from his former doctoral students.

The symposium reflects the significant impact of Professor Bhattacharya’s research in that the topics span diverse, critical research areas, including: semiconductor lasers and modulators, nanoscale quantum structure-based devices, flexible CMOS-based devices, plasmonic and photonic crystal resonators, infrared detectors and focal plane arrays, and photovoltaic devices and solar cells. This cluster presents a subset of the symposium topics, namely semiconductor emitters, semiconductor detectors, and semiconductor-based flexible devices.

Publisher’s note

Journal of Physics D: Applied Physics is delighted to present selected articles from a symposium held in honour of our Editor-in-Chief, Professor Pallab Bhattacharya. The symposium was arranged by his colleagues as a surprise for his 60th birthday, and I hope he, and our readers, will be pleased and impressed with the results. Professor Bhattacharya has been Editor of the journal since 2004 and has overseen a dramatic period of change and improvement; his guidance, enthusiasm and commitment have been vital to our success. Everyone at *Journal of Physics D* would like to wish him very many happy returns!