CURRICULUM VITAE

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CURRENT POSITION: Associate Provost (Graduate Studies & International Relations)

EMPLOYMENT HISTORY

- 1 May 1993 – 1 May 1996: Teaching and Research Assistant, NTU
- 20 Aug 1996 – 19 Nov 1996: Lecturer (Temporary), NTU
- 20 Nov 1996 – 31 Dec 1998: Lecturer, NTU
- 1 Jan 1999 – 31 Dec 2001: Assistant Professor, NTU
- 1 Jan 2001 – 30 June 2005: Sub-Dean (Student Affairs), EEE, NTU
- 1 Jan 2002 – 30 June 2009: Associate Professor, NTU
- 1 July 2005 – 31 Aug 2008: Head, Division of Circuits and Systems, EEE, NTU
- 1 July 2007 – 31 Aug 2008: Acting Director, Institute for Sustainable Nanoelectronics
- 1 Sep 2008 – 30 June 2011: Head, Division of Circuits and Systems, EEE, NTU
- 1 Jan 2009 – 31 Sep 2010: Founding Director/Acting Director, VIRTUS, IC Design Centre of Excellence
- 1 July 2009: Professor, NTU
- 23 Sep 2009 – 31 Aug 2014: NTU Senator
- 1 Jun 2011 – 31 May 2014: Associate Chair (Research), EEE, NTU
- 1 Sep 2012 – 31 Aug 2015: NTU Advisory Board Member
- 2 Jul 2014: Professor, SUTD and Associate Provost (International Relations & Graduate Studies)

ACADEMIC QUALIFICATIONS

BEng(Elec.)(Hons) Cl 2A – Nanyang Technological University – 1993
PhD – Nanyang Technological University – 1996

RESEARCH INTERESTS:

- Low-power IC design
- RF/mm-wave IC design
- Low-power and high-speed image sensors

LIST OF 5 MOST SIGNIFICANT PUBLICATIONS IN THE PAST 3 YEARS RELEVANT TO THE PROPOSAL (5, out of total 500+, including 7 books, 6 book chapters, 38 patents)

- B. Yu, K. Ma, F. Meng, K. S. Yeo, P. Shyam, S. Zhang and P. R. Verma, “Ultra Wideband Low Loss Switch Design in High Resistivity Trap-Rich SOI with Enhanced Channel Mobility,” in IEEE Trans. Microw. Theory Techn., Year: 2017, Volume: PP, Issue: 99, DOI: 10.1109/TMTT.2017.2696944

- B. Yu, K. Ma, F. Meng, K. S. Yeo, P. Shyam, S. Zhang and P. R. Verma, “DC-30 GHz DPDT Switch Matrix Design in High Resistivity Trap-Rich SOI,” in IEEE Trans. Electron Devices, Year: 2017, Volume: 64, Issue: 9, pp. 3548 - 3554
- W. Ye, K. Ma, K. S. Yeo, and Q. Zou, “A 65 nm CMOS Power Amplifier With Peak PAE above 18.9% From 57 to 66 GHz Using Synthesized Transformer-Based Matching Network,” IEEE Trans. Circuits Syst. I:Reg. Papers, vol. 62, no. 10, pp. 2533-2543, Oct. 2015.
- W. Ye, K. Ma, and K. S. Yeo, "A 2-to-6GHz Class-AB power amplifier with 28.4% PAE in 65nm CMOS supporting 256QAM," in IEEE ISSCC Dig. Tech. Papers, 22-26 Feb. 2015, pp. 38-39.
- K. Ma, T. B. Kumar, and K. S. Yeo, "A Reconfigurable K-/Ka-Band Power Amplifier With High PAE in 0.18 µm SiGe BiCMOS for Multi-Band Applications," IEEE Transactions on Microwave Theory and Techniques (TMTT), vol. 63, no. 12, pp. 4395-4405, Dec. 2015.

PROFESSIONAL AWARDS

- IEEE Fellow for contributions on “low-power IC design”
- Several best paper award at major international conferences and symposia, keynotes, invited papers, etc.
- 9 August 2009, National Day Award – The Public Administration Medal (Bronze) [PINGAT PENTADBIRAN AWAM (GANGSA)] awarded by the President of Republic of Singapore for outstanding efficiency, competence and industry.
- 24 October 2009, Nanyang Alumni Achievement Award in recognition of his exemplary achievements in research.
- 30 Aug 2012, Singapore Infocomm Technology Federation (SiTF) 2012 'Special Mention' Award under Emerging Technologies Category Awards for Singapore’s Next Generation WiFi Chipset.

SUMMARY OF MOST RELEVANT RESEARCH OUTCOMES FROM ALL PREVIOUS GRANTS

1. “An Ultra Low-Power RFIC Chip For Wireless and Communication” funded by A*STAR SERC ($1,210,020). This project was successfully completed. Specifically, a fully integrated 2.4GHz ISM band transceiver was developed for ultra low-power wireless and communication applications. All research milestones were achieved and delivered according to the project requirements. There were no variations/virements. The budget had an excellent overall utilization rate of 99.33%. 17 international publications including 6 journals and 11 conference papers were published, which include 3 IEEE Transactions. 2 post-docs and 11 research assistants were trained and many had spun out to the industry. In conclusion, this project had resulted in world-class scientific research and nurtured a pool of IC design talents for a vibrant knowledge-based economy for Singapore.

2. “60GHz RFIC Chipset Development (Radio Frequency Chipset)” funded by A*STAR ($3,400,000)

This project had successfully developed a low power 60GHz Transceiver SOC according to the IEEE 802.11ad standard. The 60GHz total solution based on integration with baseband and RF catering for the Gbps video streaming was also successfully demonstrated. A press release had been announced on the 60GHz RF chipset development by NTU. The team had also presented a live demonstration of the 60GHz capabilities at Computex, Taiwan in July 2011. 7 patents were filed and over 30 top-tier international journal and conference papers were published. One paper was awarded the prestigious IEEE SOC Best Paper Award and another two more papers received the Design Group Award and Excellent Paper Award, respectively. Together with the I2R baseband team, the combined team won the “Special Mention Award” of Emerging Technology at the Singapore Infocomm Technology Federation for the successfully development of the Singapore next generation Wi-Fi Chipset 2012.