

Curriculum Vitae

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Ming-Dou Ker (柯明道), Ph.D., *IEEE FELLOW*



CURRENT POSITIONS (現任職務)

- (1) **Distinguished Professor (特聘教授)** – 國立陽明交通大學 電子研究所
Institute of Electronics, National Yang Ming Chiao Tung University (NYCU),
1001 University Road, Hsinchu, Taiwan.
Tel: (+886)-3-5131573, E-mail: mdker@ieee.org ; mdker@nycu.edu.tw
<http://www.ics.ee.nctu.edu.tw/~mdker/>
- (2) **Director (中心主任)** – 生醫電子轉譯研究中心
Biomedical Electronics Translational Research Center (BETRC),
National Yang Ming Chiao Tung University (NYCU),
1001 University Road, Hsinchu, Taiwan.
<https://betrc.eic.nycu.edu.tw/>
- (3) **Chief Supervisor 常務監事(監事長)** – 台灣生醫電子工程協會
Taiwan Engineering Medicine Biology Association (TWEMBA)
<http://www.twemba.org.tw/>
- (4) **Chief Supervisor 常務監事(監事長)** – 台灣靜電放電防護工程學會
Taiwan ESD Association (T-ESDA)
<http://t-esda.org/index.html>
- (5) **Chief Supervisor 常務監事(監事長)** – 國際電機電子工程師學會 中華民國分會
IEEE Taipei Section
<http://www.ieee.org.tw/>
- (6) **Editor (國際期刊編輯)**
IEEE Transactions on Device and Materials Reliability
[https://eds.ieee.org/publications/transactions-on-device-and-materials-reliability/
editor-in-chief-and-editors](https://eds.ieee.org/publications/transactions-on-device-and-materials-reliability/editor-in-chief-and-editors)
- (7) **Editor (國際期刊編輯)**
IEEE Journal of the Electron Devices Society
[https://eds.ieee.org/publications/journal-of-the-electron-devices-society/editor-in-
-chief-and-editors](https://eds.ieee.org/publications/journal-of-the-electron-devices-society/editor-in-chief-and-editors)
- (8) **Guest Editor (國際期刊客座編輯)**
Frontiers in Neuroscience
Special issue on the microelectronic implants for central and peripheral nervous system
- (9) **Guest Editor (國際期刊客座編輯)**
IEEE Transactions on Electromagnetic Compatibility
Special issue on “Electrostatic Discharge and Immunity – from IC to System”

EDUCATION

Degrees / Year of Graduation/ Educational Institution/ Location

- [1] Ph.D., 1993, Institute of Electronics, National Chiao-Tung University, Taiwan.
- [2] Master, 1988, Institute of Electronics, National Chiao-Tung University, Taiwan.
- [3] Bachelor, 1986, Dept. of Electronics Engineering, National Chiao-Tung University, Taiwan.

PROFESSIONAL HISTORY (歷任職務)

Employment

- [1] 2010-now Distinguished Professor, National Yang Ming Chiao Tung University (NYCU), Taiwan. (國立陽明交通大學 電子研究所 特聘教授)
- [2] 2011-now Director, Biomedical Electronics Translational Research Center (BETRC), NYCU, Taiwan. (國立陽明交通大學 生醫電子轉譯研究中心 主任)
- [3] 2012-2015 Dean, College of Photonics, National Chiao-Tung University, Taiwan. (國立交通大學 光電學院 院長)
- [4] 2011-2015 Executive Director of National Program on Nano Technology (NPNT), Taiwan. (奈米國家型科技計畫 執行長)
- [5] 2010-2011 Executive Director of the National Program on System-on-Chip (NSoC), Taiwan. (晶片系統國家型科技計畫 執行長)
- [6] 2009-2010 Convener of the National Program on System-on-Chip (NSoC), Taiwan. (晶片系統國家型科技計畫 分項召集人)
- [7] 2006-2008 Associate Director of the National Program on System-on-Chip (NSoC), Taiwan. (晶片系統國家型科技計畫 副執行長)
- [8] 2008-2011 Vice President, I-Shou University, Taiwan. (義守大學 副校長 /借調專任)
- [9] 2008-2019 Chair Professor, I-Shou University, Taiwan. (義守大學 講座教授 /合聘)
- [10] 2004-2009 Professor, Dept. of Electronics Engineering, National Chiao-Tung University, Taiwan. (國立交通大學 電子工程學系 教授)
- [11] 2001-2004 Associate Professor, Dept. of Electronics Engineering, National Chiao-Tung University, Taiwan. (國立交通大學 電子工程學系 副教授)
- [12] 1999-2001 Assistant Professor, Dept. of Electronics Engineering, National Chiao-Tung University, Taiwan. (國立交通大學 電子工程學系 助理教授)
- [13] 1998-1999 Department Manager, VLSI Design Division, Industrial Technology Research Institute (ITRI), Hsinchu, Taiwan. (工業技術研究院 電腦與通訊工業研究所 體電路產品工程部 部門經理)
- [14] 1996-1998 Section Manager, Industrial Technology Research Institute (ITRI), Hsinchu, Taiwan. (工業技術研究院 電腦與通訊工業研究所 體電路產品工程部 課長/副理)
- [15] 1994-1996 Senior Engineer, Industrial Technology Research Institute (ITRI), Hsinchu, Taiwan. (工業技術研究院 電腦與通訊工業研究所 積體電路設計部 工程師)
- [16] 1993-1994 Post-Doctor Researcher, National Chiao-Tung University, Taiwan. (國科會 博士後副研究員)

ACADEMIC HONORS and AWARDS

1. Published over 600 technical papers in international journals and conferences. Most of them are in *IEEE*.
2. Granted with 244 U.S. patents and 219 Taiwan (R.O.C.) patents.
3. Top-Ten Outstanding Young Person in Taiwan, Junior Chamber International (JCI), 2003. (中華民國第 41 屆 十大傑出青年)
4. National Invention Award, Taiwan, 2005. (國家發明創作獎 經濟部)
5. *IEEE Fellow* (with the citation of “for contributions to electrostatic protection in integrated circuits, and performance optimization of VLSI micro-systems”), 2008. (國際電機電子工程師學會 會士)
6. One of the Top-Ten Distinguished Inventors in Taiwan, 2009. (第四屆 台灣十大傑出發明家)
7. Outstanding Engineering Professor, The Chinese Institute of Engineers, 2009. (中國工程師學會 『傑出工程教授』)
8. Outstanding Professor of Electrical Engineering, The Chinese Institute of Electrical Engineering, 2009. (中國電機工程學會 『傑出電機工程教授』)
9. Distinguished Technical Paper Award, *ISSCC* (IEEE International Solid-State Circuits Conference), 2013. (國際研討會 傑出技術論文獎)
10. Award for Outstanding Science and Technology Contribution, the Executive Yuan, Taiwan Government, 2015. (行政院傑出科技貢獻獎)
11. The 25th TECO Award on Science and Technology, TECO Technology Foundation, 2018. (第 25 屆「東元獎」, 2018 年)

ACADEMIC SERVICES

1. Funding President, Taiwan ESD Association, 2001 ~ 2005. (台灣靜電放電防護工程學會 創會理事長)
2. Distinguished Lecturer, IEEE Circuits and Systems Society, 2006~2007. (國際學術會 傑出講座)
3. Distinguished Lecturer, IEEE Electron Devices Society, 2008~2020. (國際學術會 傑出講座)
4. Vice Chair, IEEE Taipei Section, 2017~ 2019. (國際電機電子工程師學會 中華民國分會 副理事長)
5. President, Taiwan Engineering Medicine Biology Association (TWEMBA), 2017 ~ 2020. (社團法人台灣生醫電子工程協會 理事長)
6. Technical Program Committee and Session Chair of numerous international conferences of IEEE (including ISSCC, VLSI Symp., ISCAS, NEWCAS, SOCC, APCCAS, IRPS, IPFA, ...)
7. Speaker, Technical Forum (F6: Mixed-Signal/RF Design and Modeling in Next-Generation CMOS – ESD Protection Design in Nanometer CMOS), *ISSCC* (IEEE International Solid-State Circuits Conference), 2013.
8. Organizer, short course of “Bio- Sensors, Circuits, & Systems for Wearable and Implantable Medical Devices” in 2018 *IEEE Symposium on VLSI Circuits*.
9. Associate Editor, *IEEE Trans. on VLSI Systems*, 2005~2007. (國際期刊 副編輯)

10. Associate Editor, *IEEE TRANSACTIONS ON Biomedical Circuits and Systems*, 2018 ~ 2020. (國際期刊 副編輯)
11. Editor, *IEEE TRANSACTIONS ON DEVICE AND MATERIALS RELIABILITY*, 2012 ~ now. (國際期刊 編輯)
12. Editor, *IEEE Journal of the Electron Devices Society*, 2021~ now. (國際期刊 編輯)
13. Guest Editor, *Frontiers in Neuroscience*, 2021~ now. (國際期刊 客座編輯)
14. Guest Editor, *IEEE Transactions on Electromagnetic Compatibility*, 2021~ now. (國際期刊 客座編輯)

BRIEF BIOGRAPHY (簡歷)

Prof. Ming-Dou Ker (柯明道) received the Ph.D. degree from National Chiao-Tung University (NCTU), Hsinchu, Taiwan. He ever worked as the Department Manager with the VLSI Design Division, Industrial Technology Research Institute (ITRI), Hsinchu, Taiwan. Since 2004, he has been a Full Professor in the Department of Electronics Engineering, NCTU, Hsinchu. During 2008 ~ 2011, he was rotated to be a Chair Professor and the Vice President of I-Shou University, Kaohsiung, Taiwan. During 2012 ~ 2015, he was the Dean of College of Photonics, NCTU, Tainan Campus, Taiwan. He ever served as the Executive Director of National Science and Technology Program on System-on-Chip (NSoC) in Taiwan during 2010 ~ 2011, and also served as the Executive Director of National Science and Technology Program on Nano Technology (NPNT) in Taiwan during 2011 ~ 2015. Now, he is the Distinguished Professor in the Institute of Electronics, National Yang Ming Chiao Tung University (NYCU), Hsinchu, Taiwan, and also the Director of *Biomedical Electronics Translational Research Center (BETRC)*, NYCU, working on biomedical electronics translational projects.

In the technical field of reliability and quality design for microelectronic circuits and systems, he has authored/co-authored over 600 technical papers in international journals and conferences. He has proposed many solutions to improve the reliability and quality of integrated circuits, which have been granted with hundreds of U.S. patents. He had been invited to teach and/or to consult the reliability and quality design by hundreds of design houses and semiconductor companies in the worldwide IC industry. Some of his inventions or designs had been widely used in the modern IC products and electronic systems. His current research interests include the reliability and quality design for nanoelectronics and gigascale systems, as well as the circuits and systems for biomedical applications.

Prof. Ker had served as member of the Technical Program Committee and the Session Chair of numerous international conferences for many years, including *IEEE International Solid-State Circuits Conference (ISSCC)*, *IEEE Symp. on VLSI Circuits*,

IEEE International Symp. on Circuits and Systems (ISCAS), and *IEEE International Reliability Physic Symp. (IRPS)*. He ever served as the Distinguished Lecturer in the IEEE Circuits and Systems Society (2006–2007) and in the IEEE Electron Devices Society (2008–2020). He ever served as Associate Editor of *IEEE Transactions on VLSI Systems*, Associate Editor of *IEEE Transactions on Biomedical Circuits and Systems (TBioCAS)*, and the Guest Editor of *ISCAS2019 Special Issue in TBioCAS*. He was the Founding President of Taiwan ESD Association, and the 3rd President of Taiwan Engineering Medicine Biology Association. He ever served as the Vice-President of *IEEE Taipei Section*. Currently, he is serving as the Editor of *IEEE Transactions on Device and Materials Reliability*, Editor of *IEEE Journal of the Electron Devices Society*, Guest Editor for *Frontiers in Neuroscience* on the research topic of microelectronic implants for central and peripheral nervous system, and Guest Editor for *IEEE Transactions on Electromagnetic Compatibility* on the special issue of “Electrostatic Discharge and Immunity – from IC to System”.

Prof. Ker has been a Fellow of the *IEEE*, since 2008. In 2015, Prof. Ker received the Award for Outstanding Science and Technology Contribution, the Executive Yuan, Taiwan Government.