

CURRICULUM VITAE

Shen Shou Max Chung (鍾慎修)

Project Associate Professor

Department of Electrical Engineering

National Penghu University of Technology, Penghu, Taiwan, R.O.C.

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Cell Phone : 0932775652



● Personal Information

Geer: Male, Born 1961, Birth Place: Ping Dong, Taiwan, Citizen of Taiwan, and Republic of China

● Educations

- | | |
|---------------|--|
| 1988/8-1993/1 | Ph.D. in Electrophysics, Polytechnic University, NY, USA |
| 1986/8-1988/6 | M.S. in Electrical Engineering, Polytechnic University, NY, USA |
| 1979/8-1984/6 | B.S. in Electrophysics, National Chiao Tung University, Hsin Chu, Taiwan |

● Professional Experiences

- 2023/08- Now: Project Associate Professor, Dept. of Electrical Engineering, National Penghu University of Science and Technology, Penghu, Taiwan
- 2019/02-2023/07: Project Assistant Professor, Dept. of Electrical Engineering, National Penghu University of Science and Technology, Penghu, Taiwan
- 2017/8-2019/1: Adjunct Assistant Professor, Dept. of Aviation & Communication Electronics, Air Force Institute of Technology, Gansan, Taiwan
- 2014/1-2017/7: Consultant, Hong Son Limited, Taipei, Taiwan
- 2013/10-2013/12: Post Doc. Research Fellow, Institute of Biophotonics, National Yang Ming University, Taipei, Taiwan
- 2012/8-2013/7: Post Doc. Research Fellow, Center of Space Remote Sensing Research, National Central University, Chungli, Taiwan
- 2011/9-2012/7: Post Doc. Research Fellow, Dept. of Physics, National Tsing Hua University, Hsinchu, Taiwan
- 2002/8-2011/7: Assistant Professor, Dept. of Electronics Engineering, Southern Taiwan University of Technology, Tainan, Taiwan
- 2001/8-2002/7: Assistant Professor, Dept. of Electronics Engineering, Chien Kuo Institute of Technology, Chang Hwa, Taiwan
- 1993/8-1994/2: Post Doc. Research Fellow, Dept. of Physics, Steven Institute of Technology, Hoboken, NJ
- 1987/8~1993/1: Research Assistant, Full Scholarship, Weber Research Institute (WRI), Polytechnic University

- **Certificates:**

- 副教授證書: 副字第 150819 號, 中華民國 112 年 8 月 1 日
Ministry of Education Associate Professor Certificate, A150819, 20230801
- 助理教授證書: 助理字第 00 六八八九號, 中華民國九〇年十一月十三日
Ministry of Education Assistant Professor Certificate, A006889, Nov. 13, 2001
- 證照: 94 年第 2 次輻射防護專業測驗及格人員
Radiation Protection Specialist, Qualified in 2nd Test of 2015

- Ph.D. Thesis, “The Electrostatic Plasma Injection Switch and Monte Carlo Simulation of Gas Discharge with Electron-electron Collision and Electron-electron-ion Three Body Recombination”, Polytechnic University, NY, Jan. 1994.

- **Fields of Specialty**

- Pulsed Power: EPIS (Electrostatic Plasma Injection Switch), spark gaps, pseudospark, photoconductive switch, thyratrons, PFN, Marx Banks, 100 KV system, ps and ns lasers
- Plasma Simulation: MC-PIC code, streamer simulations, low temperature plasma, MAGIC, CST
- High Power Microwave: Vircator, MDO simulations, PEOS simulations, CNT field emission cathode
- Railgun: Railgun model, Pulsed Power Supply
- Carbon Nanotube: arc discharge & CVD growth, field emission cathode, CNT-FED.
- Nanoimprint: focused ion beam manufacture of nanostructures, <100 nm nanoprint
- Electrospinning: nanofiber, nanocomposite, nanoparticles doped nanocomposite, ZnO, nano Fe₃O₄
- Nanoelectronics: CNT-FET.
- Electromagnetic Simulation: RCS simulations, photonic crystals, metamaterials, GEMS, HFSS, FEKO.
- Radar: HFSWR, CODAR, plasma interaction with microwaves, Plasma Stealth, Electronic Warfare
- RF Engineering: antenna design, filter design, plasma antenna, circuit model simulation
- THz Science and Technology: Microwave Photonics, THz or Sub-mmW communication
- Microscopic weather energy balance: remote sensing
- Biophotonics: Picosecond Pump-Probe Microscopy

- **Statistics as of 2023/01/01**

Years in Taiwan Academic Community: 22, SCI Journal Publications: 11, EI Journal Publication: 1, Chinese (Taiwan) Journal Publications: 3, Popular Science Journal Article: 2. Book Chapter: 1, Executed Projects: 27 (23 as PI, 1 as Co-PI, 3 as Post Doc., 1 as actual investigator), Conference Publications: 287 [International Conference Publications (IEEE or EI Index): 133, Local (Taiwan) Conference Publications and Invited Talks: 154], Master Students Supervised/Graduated: 10/5, Courses Taught in Undergraduate & Graduate Schools: 23. Academic Activities Attended without publication: 876. Dr. Chung review >30 journal submissions/year for 25 journals, and write 5~10 proposals a year during years as Assistant Professor.

- **Courses Taught**

Undergraduate

- Physics (Vincent P. Colletto)

- Solid State Physics (C. Kittel)
- Semiconductor Devices (Sze)
- Modern Physics (Bernstein)
- Engineering Drawing (AUTOCAD)
- Engineering Mathematics (Kreyszig), Linear Algebra (Kreyszig)
- Electric Circuit (J. W. Nilsson & S. A. Riedel, also Charles K. Alexander, Matthew N. O. Sadiku)
- Microelectronics Circuits (Sedra & Smith, Neamen)
- Electromagnetism (various Chinese textbooks)
- Introduction to Electro-Optics (Kassap)
- Optoelectronics Engineering (various Chinese textbooks)
- Microcontroller System and Design (ARM Cortex-M0)
- Fiber Optics Communications (Keiser)
- Introduction to Quantum Mechanics (various textbooks)
- Introduction to Flat Panel Display (various Chinese textbooks)
- Introduction to Circuit Design and Simulation
- Introduction to VLSI Manufacture Technique (Quirk, Serda)
- Application of Computer Software (OrCAD)
- Computer Programming (Visual Basic)
- Computer Programming (Python)
- Invention and Patent
- Computer Assisted Engineering Analysis (FEKO Electromagnetic Simulation)
- Control System Engineering (Norman S. Nise)
- Introduction to Computer (various Chinese textbooks)
- Introduction to Sensors (various Chinese textbooks)

Graduate Levels

- Advanced Circuit Design (ADS)
- Microwave Engineering (Pozar)
- Introduction to Nanotechnology (various introduction level Chinese book)
- Introduction to Plasma Physics (Frances Chen)
- Optical Simulation (LightTools Simulation)
- Planned: Introduction to Pulsed Power Engineering (J. Lehr).

● **Professional experiences:**

- IEEE Senior Member, 2020
- Listed in “Who is Who” for several years, “Lifetime Achievement”.
- Dr. Chung was a member of APS, SID, SPIE, AAAS, and is a continuing member of IEEE. He was

member of several societies, including VTS, ComS, APS, MTTs, NPSS, EDS, and DEIS.

- Top 40 teachers in STU for extra NT\$10000/month stipend for 1 year.
- Best poster, IAAT2006.
- Dr. Chung is also a member of Taiwan Nuclear Society, Taiwan Plasma Society, and funding member of Taiwan Laser Application Society.
- Prof. Chung also served on the Technical Program Committee of: IEEE Electron Device and Solid State Circuit, Tainan (EDSSC 2007)
- **Prof. Chung served as session chairman in:**
 - IEEE NANO 2007, Hong Kong
 - IEEE TENCON 2007, Taipei
 - IEEE EDSSC, Tainan, 2007
 - IEEE ICMMT, Nanjing, 2008.
 - IEEE IWEM, Penghu, 2020.
 - IEEE ICCEM, Singapore, 2020
 - 29th National Defense Technology Conference, Taiwan
 - IEEE APMC, Hong Kong, 2020
 - IEEE IET ICETA 2022, Changhua, Taiwan
- **Prof. Chung is among the peer reviewer of:**
 - IEEE Pulse Power Conference (PPPS)
 - IEEE Power Modulator Conference (PMC)
 - International Display Manufacturer Conference (IDMC)
- **Prof. Chung also serves as reviewer for the following conferences:**
 - WSMEAP' 2015 (2015 World Symposium on Mechatronics Engineering & Applied Physics), Sousse, Tunisia
 - ICSPDM' 2015 (2015 International Conference on Single Processing & Data Mining), Eresin Taxim Premier, Istanbul, Turkey
 - ICACCI 2015 Special Session on Biomedical Imaging and Instrumentation in Healthcare, Kochi, India
 - 2015 International Conference on Mechanics & Applied Physics (ICMAPH' 2015), Crowne Plaza St. Peter's Rome, Italy.
 - Third International Conference on Information systems Design and Intelligent Applications-INDIA-2016, Visakhapatnam (Andhra Pradesh), India, January 8-9, 2016.
 - WSMEAP 2016 (2016 World Symposium on Mechatronics Engineering & Applied Physics).
 - ICACCI-2018, 2018 International Conference on Advances in Computing, Communications and Informatics (ICACCI)
 - INTELEC 2019 (41th International Communication Energy Conference)
 - ISPACS 2019 (International Symposium on Intelligent Signal Processing and Communication Systems)

- IWEM 2020 (IEEE International Workshop on Electromagnetics: Applications and Student Innovation Competition)
- 5th International Conference on Mechanical, Electric and Industrial Engineering (MEIE2022)
- The 2022 International Symposium on Antennas and Propagation (ISAP 2022)
- 2022 IET International Conference on Engineering Technologies and Application (IET ICETA 2022)
- 2023 International Symposium on Antennas and Propagation (ISAP 2023)

● **Journal Referee:**

- Applied Physics Letters
- Aerospace Science and Technology
- Contributions to Plasma Physics
- Engineering Research Express
- International Journal of Plasma Science and Technology
- IEEE Trans. on Plasma Science
- IEEE Trans. on Dielectric Insulation
- IEEE Tran. on Antenna Propagation
- IEEE Transactions on Aerospace and Electronic Systems
- IEEE Electron Device Letters
- Indian Journal of Science and technology
- IET Electronics Letters
- IET Microwaves, Antennas & Propagation
- Journal of Applied Physics
- Journal of Optics
- Journal of Physics D: Applied Physics
- Journal of Progress In Electromagnetic Research (PIER)
- Journal of Zhejiang University Science C (Computers & Electronics)
- Nanotechnology
- Physica Scripta
- Review of Scientific Instrument
- Universal Journal of Electrical and Electronic Engineering
- MDPI: Aerospace
- MDPI: Coatings
- MDPI: Electronics
- MDPI: Sensors

● **Invitations to join the Editorial Board (did not accept)**

- American Journal of Physics and Applications, (ISSN Print: 2330-4286, Online:

2330-4308)

- American Journal of Modern Physics, (ISSN Print: 2326-8867, ISSN Online: 2326-8891)
- American Journal of Electromagnetic and Applications
- American Journal of Science, Engineering and Technology (AJSET)
- Current Chinese Science
- Current Microwave Chemistry
- Current Nanomedicine
- Current Smart Materials
- Engineering and Applied Sciences (ISSN Print:2575-2022 ISSN Online: 2575-1468)
- International Journal of Modern Physics and Application, ISSN: 2375-3870
- International Journal of Petroleum Technology
- International Journal of Informatics and Communication Technology (IJ-ICT)
- International Journal of Information and Communication Sciences
- Insight - Electronic
- Journal of Business Data Communications and Networking (JBDCN)
- Journal of Basic & Applied Sciences, (ISSN:(online): 1927-5129
ISSN:(print): 1814-8085 °
- Micro and Nanosystems
- Modern Plasma Medicine, (MPM, ISSN 2788-807X)
- Nanomedicine
- Pharmaceutical Nanotechnology (PNT)
- Remote Sensing(ISSN:2315-4632), PiscoMed Publishing Pte Ltd., Singapore
- Science Journal of Circuits, Systems and Signal Processing
- Science and Education Publishing (SciEP), USA
- Sensors (MDPI)
- The Open Signal Processing Journal
- Universal Journal of Educational Research
- Universe Scientific Publishing Pte. Ltd.
- Whioce Publishing Pte. Ltd., Singapore
- World Journal of Textile Engineering and Technology
- World Journal of Applied Physics

● Executed Projects

1. 奈米碳管印刷電極之試作, 主持人, 國科會
Initial Study of Printed Carbon Nanotube Electrode, PI, NSC, 2003/11-2004/10, NT\$228900, NSC 92-2626-E-218-001
2. 大氣壓電漿與 TiO₂ 奈米光觸媒之空氣清靜應用研究, 主持人, 國科會小產學, 鋒澤科技
Application Research on Atmospheric Pressure Plasma with Nano-Catalyst for Air Cleaning, PI, NSC, 2004/5-2005/7, NT\$720000, NSC 93-2112-M-218-001-CC3
3. 二次電子發射材料研究計畫, 共同主持人, 清華大學材料系, 工研院材料所, 業界科專
Studies on the secondary electron emission materials, Co-PI, Ministry of Economic Affairs, 2004/8-2005/7, NT\$100000, 93A0310J4
4. 開發高電壓低干擾尖端電場分布模擬及設計技術, 主持人, 工研院化工所
Simulation and Design of High Voltage Low Interference Apparatus for Electrospinning, PI, Ministry of Economic Affairs, 2005/1-2005/12, NT\$400000
5. X 光影像顯示系統之球面像差及灰階研究, 主持人, 國科會小產學, 祿興國際
Investigation on the Spherical Aberration and Gray Scale of X-ray Image System, PI, NSC, 2005/5-2006/4, NT\$720000, NSC 94-2622-E-218-001-CC3
6. 以聚焦離子術製作奈米結構作為奈米壓印之模板以應用於奈米電子應用之研究, 主持人, 工研院機械所, 成大微奈米中心
Investigation of Focused Ion Beam Produced Template for Nanoimprint in Nanoelectronics Applications, PI, Ministry of Economic Affairs, 2006/2-2006/12, NT\$600000
7. 真空元件改善研究(提高真空度), 主持人, 工研院影像顯示中心
Investigation of the Degassing Mechanism of CNT-FED, PI, Ministry of Economic Affairs, 2006/1/1-2006/12/31, NT\$400000
8. 高功率紫外光發光二極體激發之高壓火花開關研究, 主持人, 國科會小產學, 利梭貿易
Research on UV LED Triggered High Voltage Spark Gap Switch, PI, NSC, 2006/11/1-2007/10/30, NT\$749000, NSC 95-2622-E-218-012-CC3
9. 天線面盤之前安裝使用低溫等離子幕之可行性研究, 主持人, 國科會國防計畫
Feasibility Study of Low Temperature Plasma Screen for Antenna Stealth, PI, NSC-Defense Project, NSC, 2007/1/1-2007/12/31, NT\$706000, NSC 96-2623-7-218-001-D
10. 奈米壓印技術在奈米電子上的應用, 主持人, 國家毫微米實驗室
Application of Nanoimprint on Nanoelectronics, PI, National Nano Device Laboratory, NDL: P-96-1A-109, 執行期間: 2007/10/1-2008/9/30, 儀器設備使用費: NT\$500000 元
11. 以大氣微型電漿處理中央靜脈導管內外壁以減少血循感染之研究, 主持人, 奇美醫院研究專題計畫
Investigation on Surface Processing of Medical Tube with Micro Plasma, PI, Chi Mei Medical Center, 執行期間: 2008/1/1-2008/12/31, NT\$240000 元
12. 微奈米壓印技術的現況及前瞻展望, 主持人, 成大工研院合作研究計畫
Current status and future trend of advanced micro/nano patterning technologies, PI, NCKU/ITRI, Ministry of Economic Affairs, 執行期間: 2008/1/1-2008/11/31, NT\$300000 元

13. 3C 家電之無線充電初步研究，主持人，金屬中心，徠傑科技，中小企業關懷計劃，
Initial Study on Wireless Charging, PI, Metal Center, Ministry of Economic Affairs, 執行期間：
2009/2/01-2009/8/31, NT\$72000
14. 脈沖電漿產生器之最佳化研究，主持人，核能所
Optimization of Pulsed Power for Plasma Generation, PI, Institute of Nuclear Energy Research,
982001INER021, 執行期間：2009/2/19-2009/12/31, NT\$500000
15. 訊號處理研究-電漿對電磁波吸收研究，主持人，中科院
Signal Processing Research-The Effect of Plasma on Electromagnetic Wave Absorption, PI,
National Chung San Institute of Science and Technology (NCSIST), XU98F22P, 執行期間：
2009/6/01-2009/11/31, NT\$700000
16. 超視距雷達技術應用研究，主持人，中科院
Application Research on Over the Horizon Radar, PI, National Chung San Institute of Science and
Technology (NCSIST), XU99101P072, 執行期間：2010/3/01-2010/11/31, NT\$630000

Involved Project as Post Doc:

17. 兆赫光子科技: V和W 頻段無線與超寬頻訊號光纖通訊之關鍵元件及技術之研究—總計畫
暨子計畫一：超寬頻訊號載於光纖通訊之基礎與應用研究，國科會NSC 100-2811-E-007-055,
NT\$ 4,608,000, Aug. 1, 2009-July 31, 2012, 主持人: 潘犀靈教授，鍾博士任博士後研究員，
2011/09/01-2012/07/31, 物理系，清華大學，新竹
Key Device and Technology Development for V and W Band Wireless and Ultrawide Band Signal
for Optical Communication: Sub-project 1: Basic and Application Study on Ultrawide Band
Signal for Optical Communication, Post Doc., Department of Physics, National Tsing Hua
University, NSC100-2811-E-007-055, NT\$ 4,608,000, 2011/09/01-2012/07/31.
18. 地表過程參數化及觀測之研究，國科會 NSC 101-2811-M-008-087，NT\$1,980,000,
2012/08/01-2013/07/31, 主持人: 劉說安教授，鍾博士任博士後研究員，2012/08/01-2013/07/31
太空遙測中心，中央大學，中壢
Parameterization and Observation of Ground Weather Process, Post Doc., Hydrology Remote
Sensing Lab, Center for Space and Remote Sensing Research, National Central University, NSC
101-2811-M-008-087, 2012/08/01-2013/07/31.
19. 同調螢光偵測與生命期影像，國科會 NSC 102-2112-M-010-003-MY3, NT\$5,438,000,
2013/10/01-2013/12/31, 主持人: 高甫仁教授，鍾博士任博士後研究員，
2013/10/01-2013/12/31，
生醫光電所，陽明大學，台北
Coherent Fluorescence Detection and Lifetime Imaging, Post Doc., Modern Optics Laboratory,
Institute of Biophotonics Engineering, National Yang Ming University, NSC
102-2112-M-010-003-MY3, 2013/10/01-2013/12/31.

Involved Project as Adjunct Assistant Professor

20. 風力發電機對於雷達之影響研究，科技部 MOST 106-2221-E-161-002，NT\$538,000
2017/08/01-2018/07/31，主持人: 段世中教授，鍾教授任協同主持人，亞東技術學院，板橋，
台北

Analysis on the Impact of Wind Turbine on Radar, Department of Communication Engineering, Oriental Institute of Technology, Taipei, Taiwan, Co-PI, MOST 106-2221-E-161-002 , NT\$538,000, 2017/08/01-2018/07/31.

21. 兆瓦(MW)級以上脈衝功率關鍵技術設計評估，主持人，中科院資通所，SXC0700352，NT\$98000，20180706-20180915。
Design and Evaluation of MW Class Pulsed Power Key Technology, Principle Investigator, SXC0700352，NCSIST, 20180706-20180915, NT\$98000.
22. 兆瓦(MW)級以上電磁輻設源模擬設計，主持人，中科院資通所，SXC0700352，NT\$98000。20180915-20181130。
Simulation and Design of MW Class Electromagnetic Radiation Source, Principle Investigator, SXC0700352，NCSIST, 20180915-20181130, NT\$98000.

Involved Project as Project Assistant Professor in NPU since Feb. 2019

23. 磁場與脈衝功率系統阻抗對衍射型磁控管共振狀況的影響，主持人，澎湖科技大學，教育部躍升計畫，NT\$50000，20190101-20190731。
Influence of the Magnetic Field and Impedance of Pulsed Power System on the Resonance of Magnetron with Diffraction Output, Principle Investigator, National Penghu University of Science and Technology Up_Rise Project, NT\$50000，20190101-20190731.
24. 5G 通訊毫米波天線研究，主持人，澎湖科技大學，教育部躍升計畫，NT\$50000，20190801-20200731。
Research on Antenna for 5G Millimeter Wave Communication, National Penghu University of Science and Technology Up_Rise Project, NT\$50000，20190801-20200731.
25. 脈衝功率系統對相對論性磁控管的影響之模擬研究與高能微波場型顯示器之製作，主持人，科技部鼓勵技專校院從事實務型研究專案計畫，NT\$700000，科技部，109-2637-M-346-001，2020/08/01~2022/03/31
Simulation Study on the Influence of Pulsed Power System on Relativistic Magnetron and the Manufacture of the Field display Panel for High Power Microwave, PI, Ministry Of Science and Technology for Practical Application Project, NT\$700000，MOST 109-2637-M-346-001，2020/08/01~2021/12/31
26. 110年 國防科技前瞻計劃-分項[微波武器]，主持人，國防部軍備局，成新科技股份有限公司，20210701~20211130，NT\$90000。
Year 110 Defense Foresight Project-Report on High Power Microwave Weapon, PI, Ministry of Defense, 4DMEN Technology Co. Ltd., 20210701-20211130，NT\$90000.
27. 11 年國家中山科學研究院「國防先進科技研究計畫-突破式國防科技研發計畫」-[極超音速環境高溫熱防護材料熱衝循環數值模擬分析與驗證技術開發]，20220101-20251231。(後來因故退出此計劃)

Year 112 National Chung-Shan Institute of Science and Technology (NCSIST) [Defense Advanced Technology Research Project- Breakthrough Defense Technology Research Project]-[The establishment of technology verification platform and numerical simulation analyses for thermal protection materials under hypersonic cycle], 20220101-20251231. (Withdraw from this project later)

Google Scholar

The screenshot shows the Google Scholar profile for Shen Shou Max Chung. The profile includes a profile picture, a bio, and a list of publications with their citation counts and years. A bar chart shows the citation count over time from 2016 to 2023.

Shen Shou Max Chung
 Dept. of Electrical Engineering, National Penghu University of Science and Technology, Taiwan, R.O.C.
 在 ms3.hinet.net 的電子郵件地址已通過驗證 - 變更
 Pulsed Power Plasma High Power Microwave

引用次數 查看全部
 全部 自 2018 年
 引文 140 48
 H 指數 5 3
 I10 指數 4 2

標題	引用次數	年份
Synthesis and characterization of magnetic nanoparticles embedded in polyvinyl pyrrolidone nanofiber film by electrospinning method C.R. Lin, T.C. Tsai, M. Chung, S.C. Lu Journal of Applied Physics 105 (7)	44	2009
FDTD simulations on radar cross sections of metal cone and plasma covered metal cone M. Chung, SSM Chung Vacuum 86 (7), 979-984	38	2012
Properties of DC biased plasma antenna M. Chung, Y.H. Chen, Y.H. Yu, Z.Y. Liu 2988 International Conference on Microwave and Millimeter Wave Technology 3 ...	16	2008
Capacitive coupling return loss of a new pre-ionized monopole plasma antenna M. Chung, W.S. Chen, S.R. Huang, C.C. Chang, K.T. Fu, Y.H. Yu, T.W. Suen TENCON 2007-2007 IEEE Region 10 Conference, 1-4	10	2007
Novel Trigger Mechanism High Power Switch: The Electrostatic Plasma Injection Switch SSM Chung Vacuum 86 (7), 979-984	7	2012
Electrospray magnetic thin film M. Chung, S.F. Ho, C.R. Lin 2987 IEEE Conference on Electron Devices and Solid State Circuits, 309-311	5	2007
The electrostatic plasma injection switch (EPIS) M. Chung, E. Kurhurd Digest of Technical Papers, PDP-2003, 14th IEEE International Display Power	4	2003

共同作者 編輯
 Yonhua (Tommy) Tzeng
 National Chung Kung University ...

ResearchGate

The screenshot shows the ResearchGate profile for Shen Shou Max Chung. The profile includes a bio, research statistics, and a list of research items. A notification indicates that 70% of research items are missing full-text.

Shen Shou Max Chung
 Professor - Position - Institution
 Location | Website
 Current activity

Research Interest Score 447.4
 Citations 203
 h-index 6
 Citations over time

Profile Research (221) Stats Following Saved list

Business card Edit

Shen Shou Max Chung
 Professor
 Skills
 RF Engineering - Pulsed Power - railgun + 12 others

Your card was viewed 3 times in the last week.

About me Edit

Introduction
 Prof. Chung's research interests include pulsed power; plasma simulation; high-power microwave; railguns; carbon nanotubes; nanosystems; rf/plasma; electrospinning; THz; ablation

70 of your research items are missing a full-text
 Add full-texts to help increase the visibility of your work.
 View research items

Cited you

Shih Chung Tuan
 Oriental Institute of Te... Follow

Mohd Taufiq Jusoh
 Malaysian Development Bank Follow

● Publications

SCI and EI Journal Publications:

- J1.M. Chung and E. E. Kunhardt, “Electrostatic Plasma Injection Switch”, *Appl. Phys. Lett.* 66 (16), 17, pp.2051-2053, April 1995. DOI: <http://dx.doi.org/10.1063/1.113689> (2020 SCI: 3.597, ranking in Physics: Applied 21/144, Citations:2) (<http://aip.scitation.org/doi/abs/10.1063/1.113689>).
- J2.Max Chung, and E. E. Kunhardt, “Novel Trigger Mechanism High Power Switch: The Electrostatic Plasma Injection Switch”, *IEEE Trans. on Plasma Science*, Vol. 34, No. 5, pp.1626-1639, Oct, 2006. DOI: [10.1109/TPS.2006.881885](https://doi.org/10.1109/TPS.2006.881885) (2020 SCI: 1.56, ranking in Physics, Fluids & Plasmas: 21/31, Citations: 6) (<http://ieeexplore.ieee.org/document/1710020/>).
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Biography

Dr. Chung grew up in Ping Dong, Taiwan. After graduate from elementary and junior high with distinction, he studied at Kaohsiung High School and Chien Kuo High School. He was then accepted at the Dept. of Electrophysics, NCTU, and briefly studied at the Dept. of Mathematics, NTU, and then return to Dept. of Electrophysics, NCTU to finish the BS degree. Afterwards he served in the Army 73 Independent Brigade, and in 1986 he began his study at the Polytechnic University, NY. In 1988 he gained the MS in EE, and in January 1993 the PhD in Electrophysics, then he went to the Dept. of Physics of the Steven Institute of Technology, NJ as a Post-Doctoral researcher. In February 1994 Dr. Chung return to Taiwan for family reasons and work as a farmer. In 2001, he began to serve as an Assistant Professor in Dept. of Electronics Engineering in Chien Kuo Institute of Technology, Chang Hua, Taiwan. In 2002 Dr. Chung move to Dept. of Electronics Engineering, Southern Taiwan University of Technology, also as an Assistant Professor, and in 2011 he resigned from that position and worked as a Post Doc. in the Dept. of Physics in National Tsing Hua University. In 2012 he served as Post Doc. in the Center of Space Remote Sensing Research of National Central University. In 2013 he served as Post Doc in the Institute of Biophotonics Engineering in National Yang Ming University. Since 2014 he had been with Hong Song Limited as a consultant on FEKO simulation on various topics. From 2017 to 2018 he was with the Dept. of Aviation and Communication Electronics, Air Force Institute of Technology, Taiwan as an Adjunct Assistant Professor. Since Feb. 2019 he is with the Department of Electrical Engineering, National Penghu University of Science and Technology, Taiwan.

Dr. Chung's early work in US belongs to the Pulsed Power and Plasma Science Society. He realized the invention of Electrostatic Plasma Injection Switch (EPIS), which is a high-power plasma switch in the tens of MW range that was meant to improve the bottleneck facing thyratrons. Besides this, Prof. Chung also developed a Monte Carlo Particle-in-Cell code in FORTRAN to simulate streamer propagation in the breakdown stages of gases. The MC-PIC code contains advanced electron-electron and electron-electron-ion three body recombination models. These kinds of technologies have applications in radar, accelerator, fusion, and advanced defense technologies. When Dr. Chung moved back to Taiwan, because there is no such research in Taiwan, Dr. Chung switched to study the arc-discharge and CVD growth and applications of Carbon Nanotube (CNT). Also, he was involved in X-ray imaging system, UV-LED triggered spark-gap, wireless charging, plasma sterilization, experiment and simulation of electrospinning for nanofiber, electric and magnetic field controlled electrospinning, Fe₃O₄ doped nanofiber. Besides these, he also developed focused ion beam nano-manufacturing technique for nanoimprint mold with features sizes less than 100 nm and demonstrated nanoimprint. He also worked on plasma antenna, and make considerable simulations on radar cross section and plasma stealth. He also wrote articles on high power microwave, high frequency surface wave radar, and made simulations on photonic crystals, metamaterials. He is also interested in fusion.

In NTHU as post Doc. he worked in generation and detection of THz waves, particularly in 100 GHz sub-mmW communication. In CSRSR as post Doc. he works on residue energy balance in earth surface. In NYMU he was involved in using stimulated emission to obtain biophotonic microscopy

images. Afterwards he worked on RCS simulation, HPM, and railgun simulations.

Dr. Chung has taught the following courses: Physics, Solid State Physics, Semiconductor Devices, Modern Physics, Engineering Mathematics, Linear Algebra, Electric Circuit, Microelectronics Circuits, Electromagnetism, Introduction to Electro-Optics, Fiber Optics Communications, Introduction to Quantum Mechanics, Introduction to Flat Panel Display, Introduction to VLSI Manufacture Technique, Application of Computer Software (OrCAD), Invention and Patent, Computer Programming (Visual Basic), Python, Computer Assisted Engineering Analysis (FEKO), Control System Engineering, Introduction to Computer, Introduction to Sensors, Advanced Circuit Design (ADS), Microwave Engineering, Introduction to Nanotechnology, and Introduction to Plasma Physics.

Up to 2023, he executed 27 projects (21 as PI), published 11 SCI journal papers, 1 EI journal paper, 1 book chapter, about 300 conference papers, 2 domestic journal papers, 1 popular science article, educated 5 master students, taught 16 courses, wrote about 10 proposal and review about 30+ journal submission per year. Dr. Chung is familiar with simulation software like MAGIC, VOPAL, GEMS, HFSS, LightTools, FEKO, CST and familiar with various semiconductor manufacture process.

Dr. Chung was a member of APS, SID, SPIE, AAAS, and is a continuing member of IEEE. He was elevated to IEEE Senior Member in 2020. He was member of several IEEE societies, including VTS, COM-S, APS, MTTs, NPSS, EDS, and DEIS. Prof. Chung was also a member of Taiwan Nuclear Society and Taiwan Plasma Society. Prof. Chung also served on the Technical Committee of IEEE Electron Device and Solid State Circuit (EDSSC 2007), and also served as session chairman in IEEE NANO 2007, Hong Kong, IEEE TENCON 2007, Taipei, IEEE EDSSC, Tainan, 2007, IEEE ICMMT, Nanjing, 2008.

Dr. Chung is among the peer reviewer of IEEE Pulse Power Conference (PPPS), IEEE Power Modulator Conference (PMC), International Display Manufacturer Conference (IDMC), IEEE Trans. on Plasma Science, IEEE Trans. on Antenna and Propagation, IEEE Trans. on Dielectric Insulation, IEEE Electron Device Letters, International Journal of Applied Physics, Journal of Plasma Science and Technology, Journal of Zhejiang University of Science and Computer (ZUSC), Review of Scientific Instruments, etc.

All this research were related to projects Dr. Chung has executed, but Dr. Chung's interests reach far beyond these topics, he is also interested in 3DIC, Nano-CMOS, MRAM, STO, mmW radar and communication, Graphene, GaN, PSS, Photonic Crystal LED, Li-air battery, Gas insulation for OLED, Laser Wake Field Accelerator, μ -Catalyzed Fusion, Cold Fusion, FEL etc. He constantly updates his knowledge in these topics through seminar and meetings, and so far, the meetings he attended without presenting a paper has exceeded 1000 times.

Dr. Chung feels deeply that most of the popular technologies today were results of defense related research topics decades ago, so he is very interested in advanced defense research going on today. Also, most of the scientific and technological breakthroughs are often results of cross-discipline communication, so he tries his best to learn everything new within the limit of time. Dr. Chung enjoys journey in the quest of breakthroughs in science and advanced technologies.