

# Publications List of Prof. Shen-Li Chen

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## **Research Fields (Expertise):**

- Power Electronics, BCD Process (HV, UHV)
- VLSI Reliability
- ESD/EOS Protection Design
- CMOS Latchup Free Design/Testing
- System EMC/EMS Testing and Troubleshooting

## **A. Referred Journal papers: (2014~2021)**

1. Shen-Li Chen\*, Po-Lin Lin, Hung-Wei Chen, and Yi-Mu Lee, "High Reliabilities Design of Stacked Ultra-high-voltage nLDMOSs in a 0.5- $\mu$ m BCD Semiconductor Technology," [Modern Concepts in Material Science](#), vol. 4(5), pp. 593-1–593-6, Nov. 2021.
2. Shi-Zhe Hong, Shen-Li Chen\*, Hung-Wei Chen, and Yi-Mu Lee, "Drain Side Area-modulation Effect of Parasitic Schottky Diode on ESD Reliability for High Voltage P-channel Lateral-Diffused MOSFETs," [IEEE Electron Device Letters](#), vol. 42(10), pp. 1512-1515, Oct. 2021.
3. Tien-Yu Lan, Shen-Li Chen\*, Hung-Wei Chen, and Yi-Mu Lee, "Research on ESD Protection of Ultra-high Voltage nLDMOS Devices by Super-junction Engineering in the Drain-side Drift Region," [IEEE Journal of the Electron Devices Society](#), vol.9, pp. 763-777, Aug. 2021.
4. Shi-Zhe Hong and Shen-Li Chen\*, "ESD Design and Analysis by Drain Electrode-embedded Horizontal Schottky Elements for HV nLDMOSs," [Electronics](#), vol. 10(1), pp. 178-1–178-15, Jan. 2021.
5. Po-Lin Lin, Shen-Li Chen\* and Sheng-Kai Fan, "Enhance the ESD Ability of UHV 300-V Circular LDMOS Components by Embedded SCRs and the Robustness P-body Well," [IEEE Journal of the Electron Devices Society](#), vol.9, pp. 108-113, Jan. 2021.
6. Po-Lin Lin, Shen-Li Chen\* and Sheng-Kai Fan, "ESD-Performance Enhancement of Circular Ultra-High-Voltage 300-V N-Channel Lateral-Diffused MOSFETs by Source/Drain Embedded Schottky Diodes," [IEEE Electron Device Letters](#), vol. 41(11), pp. 1673-1676, Nov. 2020.

7. Hung-Wei Chen, Shen-Li Chen\*, Yu-Ting Huang, and Hsun-Hsiang Chen, "ESD improvements on power N-channel LDMOS devices by the Composite Structure of super junctions integrated with SCRs in the drain side," [IEEE Journal of the Electron Devices Society](#), vol.8, pp. 864-872, Jul. 2020.
8. Shen-Li Chen\* and S.P. Lee, "Optimized Design of the 100-V Silicon Based Power N-channel LDMOS Transistor," [Modern Concepts in Material Science](#), vol. 3(2), pp. 559-1–559-6, Jul. 2020.
9. Shen-Li Chen\*, Pei-Lin Wu and Yu-Jen Chen, "Robust ESD-Reliability Design of 300-V Power N-channel LDMOSs with the Elliptical Cylinder Super-junctions in the Drain Side," [Electronics](#), vol. 9(4), pp. 730-1–730-14, Apr. 2020.
10. Sheng-Kai Fan, Shen-Li Chen\*, Po-Lin Lin, and Hung-Wei Chen, "Layout Strengthening the ESD Performance for High-voltage N-channel Lateral Diffused MOSFETs," [Electronics](#), vol. 9(4), pp. 718-1–718-20, Apr. 2020.
11. Po-Lin Lin, Shen-Li Chen\* and Sheng-Kai Fan, "ESD-Immunity Impacts in 300 V nLDMOS by Comprehensive Drift-region Engineering," [Electronics](#), vol. 8(12), pp. 1469-1-1469-14, 2019.
12. Shen-Li Chen\*, Pei-Lin Wu, Yu-Lin Jhou, Po-Lin Lin and Sheng-Kai Fan, "ESD-Protection Design of UHV Circular N-channel LDMOSs by the Drift Region with Elliptical Cylinder Super-junctions," [Advances in Technology Innovation](#), Dev. 2019 (accepted).
13. Shen-Li Chen\*, Pei-Lin Wu and Po-Lin Lin, "ESD-Reliability Enhancement of Circular UHV 300-V Power nLDMOSs by the Drain-side Superjunction Structure," [IEEE Electron Device Letters](#), vol. 40(4), pp. 597-600, Apr. 2019.
14. Shen-Li Chen\*, Yi-Cih Wu, "Sensing and Reliability Improvement of Electrostatic-Discharge Transient by Discrete Engineering for High-Voltage 60-V N-Channel Lateral-Diffused MOSFETs with Embedded Silicon-Controlled Rectifiers," [Sensors](#), vol. 18(10), pp. 3340-1-3340-10, Oct. 2018.
15. Shen-Li Chen\*, Yu-Ting Huang, and Shawn Chang, "Design and Impact on ESD/LU Immunities by Drain-side Super-junction Structures in Low-(High-)Voltage MOSFETs for the Power Applications," [IEICE Trans. on Electronics](#), vol. E101-C (3), pp. 141-150, Mar. 2018.
16. Shen-Li Chen\*, Chun-Ju Lin, and Yu-Ting Huang, "Impacts of ESD Reliability by Different Layout Engineering in the 0.25- $\mu$ m 60-V High-voltage LDMOS Devices," [Physical Sciences Reviews](#), vol.3, issue 2, pp. 1-15, Feb. 2018.
17. Shen-Li Chen\*, Yu-Ting Huang, and Yi-Cih Wu, "Design of High-ESD Reliability in HV Power pLDMOS Transistors by the Drain-side Isolated SCRs," [IEICE Trans. on Electronics](#), vol. E100-C (5), pp. 446-452, May 2017.
18. Shen-Li Chen\* and Min-Hua Lee, "Impacts of Leakage-Biasing Failure-mode Identification in the Transmission-Line Pulse Testing for Low-voltage/High-voltage MOSFET Components," [IEEE Transactions on Industry Applications](#), vol. 53(3), pp.2888-2893, Mar. 2017.

19. Shen-Li Chen\* and Shawn Chang, "Robust Reliability and Electrical Performances by the Bulk-Contact in 60-V p-channel LDMOS Power Components," [International Journal of Green Energy](#), vol. 14(3), pp. 239-244, Mar. 2017.
20. Shen-Li Chen\* and Dun-Ying Shu, "Measurement Forecast of Anomalous Threshold Voltages in BCD LV Submicron n-MOSFETs with Two Artificial Intelligence Methods", [Measurement](#), vol. 100, pp. 93-98, Mar. 2017.
21. Shen-Li Chen\*, Kuei-Jyun Chen, H.-W. Chen, "ESD Protection Design and Enhancement in the Power 60-V N-channel LDMOS by Embedded-SCR Anode Islands," [Electronics Letters](#), vol. 52(19), pp. 1639-1640, Sep. 2016.
22. Shen-Li Chen\* and Yu-Ting Huang, "Design and Layout Strategy in the 60-V Power pLDMOS with Drain-End Modulated Engineering of Reliability Considerations", [IEEE Transactions on Power Electronics](#), vol. 31(7), pp.5113-5121, Jul. 2016.
23. Hung-Wei Chen, Yi- Mu Lee, and Shen-Li Chen, "The Taste Sensors with Conductivity Measurement," [The Open Materials Science Journal](#), vol. 10, pp. 37-43, 2016.
24. Yeong-Lin Lai, Edward Y. Chang, Shen-Li Chen, K. B. Wang, Chun-Yi Zheng and Wen-Jung Chiang, "Characteristics of GaAs Power MESFETs with Double Silicon Ion Implantations for Wireless Communication Applications," [The Open Materials Science Journal](#), vol. 10, pp. 29-36, 2016.
25. Shen-Li Chen\*, Chin-Chai Chen, Yeong-Lin Lai, Wen-Jung Chiang and Hung-Wei Chen, "PL Intensity and Life-time Enhancements of the n-GaN Light-Emitting Diode During the Device Fabrication," [The Open Materials Science Journal](#), vol. 10, pp. 20-28, 2016.
26. Shen-Li Chen\*, "Editorial: Advanced Microelectronic and Nanoscale Semiconductor Materials & Applications," [The Open Materials Science Journal](#), vol. 10, pp. 18-19, 2016.
27. Shen-Li Chen\* and Min-Hua Lee, "ESD-Reliability Influences of an HV nLDMOS with Different Embedded SCR Structures in the Drain Side", [International Journal of Electrical and Electronics Engineering Research](#), vol. 6 (2), pp. 37-44, Apr. 2016.
28. Shen-Li Chen\* and Min-Hua Lee, "Reliability Analysis of P<sup>+</sup> Pickup on Anti-ESD Performance in Four CMOS Low-voltage Technology Nodes," [IETE Journal of Research](#), vol. 62(6), pp. 752-761, Apr. 2016.
29. Shen-Li Chen\* and Yu-Ting Huang, "Design of Reliability Improvement in HV p-channel LDMOS DUTs by a 0.25  $\mu\text{m}$  60-V BCD Process", [International Journal of Electronics and Electrical Engineering](#), vol. 4 (3), pp. 210-214, Mar. 2016.
30. Shen-Li Chen\*, Min-Hua Lee, and Chun-Ju Lin, "Protection Design of the SCR Cooperation on ESD Reliability Performance in Microelectronics of Low-voltage/High-voltage N-channel MOSFET Devices," [Wulfenia \(Journal\)](#), vol. 22 (12-pt.2), pp. 7-21, Dec. 2015.
31. Shen-Li Chen\* and Yi-Sheng Lai, "Strengthen Anti-ESD Characteristics in an HV LDMOS with Super-Junction Structures," [IEEE Transactions on Power Electronics](#), vol. 30 (5), pp. 2375-2382, May 2015.

32. Shen-Li Chen\*, "The I-V Characteristic Prediction of BCD LV pMOSFET Devices Based on an ANFIS-Based Methodology", [Advances in Fuzzy Systems](#), vol. 2015, pp. 824524-1 ~ 824524-8, Feb. 2015.
33. Shen-Li Chen\*, Shawn Chang, Chun-Hsing Shih, Hsun-Hsiang Chen, "ESD-Reliability Analysis and Strategy of the GaN-based Light-Emitting Diodes", [Key Engineering Materials](#), vols. 656-657, pp. 57-62, May 2015.
34. Shen-Li Chen\*, Tsung-Shiung Lee, Yu-Ting Huang, "Impacts of MOS Device Characteristic Under Different Oxygen-Dose Participations in the Silicon Substrate", [Key Engineering Materials](#), vols. 656-657, pp. 8-13, May 2015.
35. Shen-Li Chen\*, Shawn Chang, Yu-Ting Huang, Shun-Bao Chang, "Reliability Enhancement in the 60 V Power pLDMOS by a Bulk-FOD Engineering," [Advanced Materials Research](#), vols. 1079-1080, pp. 506-509, Jan. 2015.
36. Shen-Li Chen\* and Hung-Wei Chen, "Pseudo-Failure Impacts on ESD Robustness in Integrated Circuits I/O Ports by the Parasitic Capacitance", [The Open Electrical and Electronic Engineering Journal](#), vol. 8, pp. 143-251, Dec. 2014..
37. Shen-Li Chen\*, "Enhanced Electrostatic Discharge Reliability in GaN-Based Light-Emitting Diodes by the Electrode Engineering", [IEEE/OSA Journal of Display Technology](#), vol. 10, no.10, pp. 779-785, Oct. 2014.
38. Shen-Li Chen\* and Chun-Ju Lin, "Layout Structure Dependence of 60-V nLDMOS Devices in the Anti-ESD Reliability Consideration", [Journal of Electrical and Control Engineering](#), vol. 4(5), pp. 1-9, Oct. 2014.
39. Shen-Li Chen\* and Shih-Hua Hsu, "Design of a High Performance Green-Mode PWM Controller IC with Smart Sensing Protection Circuits," [Sensors and Transducers Journal](#), vol. 176, issue 8, pp. 210-218, Aug. 2014.
40. Shen-Li Chen\* and Min-Hua Lee, "A Comprehensive Evaluation of Drain-side Layout Topologies on the Power nLDMOS ESD/LU Reliabilities," [Research Journal of Applied Sciences, Engineering and Technology](#), vol. 8(4), pp. 496-502, Jul. 2014.
41. Shen-Li Chen\* and Yi-Sheng Lai, "Anti-ESD Improvement of a Power nLDMOS with a Perpendicular Super-junction Construction in the Drain Side", [Applied Mechanics and Materials](#), Vol. 595, pp. 195-200, Jun. 2014.
42. Shen-Li Chen\*, Wen-Ming Lee and Chi-Ling Chu, "ESD Failure Analysis and Robustness Design in Vertical-Diffused MOS Transistors", [Advanced Materials Research](#), Vols. 926-930, pp.456-461, Jun. 2014.
43. Shen-Li Chen\*, Wen-Ming Lee, Chi-Ling Chu, "EMMI Failure-Distributed Analysis of ESD Zapping and Protection Designs in Power VDMOS ICs", [International Journal of Energy Science](#), vol.4, issue 3, pp. 77-84, Jun. 2014.
44. Shen-Li Chen\* and Dun-Ying Shu, "By Using Grey System and Fuzzy-Neural Network to Predict the Threshold Voltage of Complicated Sub-micron MOSFETs", [WIT Transactions on Engineering Sciences](#), vol. 92, pp. 537-544, Jun. 2014.
45. Shen-Li Chen\*, Wen-Ming Lee and Chi-Ling Chu, "ESD Hazard Analysis of VDMOS Power Components by Photoemission Spectroscopy", [WIT Transactions on Information and Communication Technologies](#), vol. 56, pp. 721-728, May 2014.

46. [Shen-Li Chen\\*](#) and Min-Hua Lee, "Highly ESD Reliable HV Power nLDMOS Device with the Bulk FODs Design Technique", [Energy Education Science and Technology, Part A: Energy Science and Research](#), vol. 32 (5), pp.3115-3124, May 2014.
47. [Shen-Li Chen\\*](#) and Min-Hua Lee, "ESD Reliability Improvement of an HV nLDMOS by the Bulk FODs Engineering", [AASRI Procedia -Journal- Elsevier](#), USA, vol. 7, pp. 114-119, May 2014.
48. [Shen-Li Chen\\*](#) and Min-Hua Lee, "Impacts of the Drain-side nWell Adding on ESD Robustness in 0.25- $\mu$ m LV/HV nMOSTs", [AASRI Procedia -Journal- Elsevier](#), USA, vol. 7, pp. 51-56, May 2014.
49. [Shen-Li Chen\\*](#), Min-Hua Lee, "Drain Side nWell Influences on the Reliability Immunity of 0.25- $\mu$ m LV/HV GGnMOS Devices by TLP Testing and EDA Simulation", [WIT Transactions on Modelling and Simulation](#), vol. 60, pp. 1181-1185, Apr. 2014.
50. [Shen-Li Chen\\*](#), Der-Ann Fran, "Improvement on ESD Protection of Output Driver in DC Brushless Fan ICs by the FOD Protection Block", [Advanced Materials Research](#), Vols. 850-851, pp.449-453, Mar. 2014.
51. [Shen-Li Chen\\*](#), Min-Hua Lee, "Impact of Drain-side nWell Engineering on ESD Robustness in 0.35  $\mu$ m LV MOSTs", [Advanced Materials Research](#), Vols. 850-851, pp.7-11, Mar. 2014.
52. [Shen-Li Chen\\*](#) and Yang-Shiung Cheng, "Signal Sensing by the Architecture of Embedded I/O Pad Circuits", [International Journal on Smart Sensing and Intelligent Systems](#), vol. 7, no. 1, pp.196-213, Mar. 2014.
53. [Shen-Li Chen\\*](#), Min-Hua Lee, "A Novel ESD/LU Protection Structure with Drain FODs for High-voltage nLDMOS Applications", [WIT Transactions on Information and Communication Technologies](#), vol. 49, pp. 533-540, Feb. 2014.
54. [Shen-Li Chen\\*](#), Chun-Ju Lin, "Layout-type Dependence on ESD/LU Immunities for LVTnSCR Devices in LV Applications", [WIT Transactions on Information and Communication Technologies](#), vol. 49, pp. 525-532, Feb. 2014.
55. [Shen-Li Chen\\*](#) and Der-Ann Fran, "Implementation of ESD Protection for Output Driver ICs with SCR Circuits Techniques", [Applied Mechanics and Materials](#), vol. 464, pp.139-144, Feb. 2014.
56. [Shen-Li Chen\\*](#), Yi-Sheng Lai, "Effects of Source Pick-up Adding and ESD Implanted Layer on ESD Reliability of LV GGnMOSTs", [WIT Transactions on Engineering Sciences](#), vol. 87, pp. 175-182, Jan. 2014.
57. [Shen-Li Chen\\*](#), Min-Hua Lee, "The Pick-up Strategy of Multi-finger GDpMOSTs on ESD Robustness in a 0.35  $\mu$ m Process Technology", [WIT Transactions on Engineering Sciences](#), vol. 87, pp. 165-173, Jan. 2014.
58. [Shen-Li Chen\\*](#), Min-Hua Lee, "Impact of FODs Adding on the ESD/LU Reliabilities in 0.35  $\mu$ m 3.3 V LV nMOSTs", [WIT Transactions on Engineering Sciences](#), vol. 87, pp. 155-163, Jan. 2014.

## B. Book Chapter Series: (2014~2021)



1. Shen-Li Chen\*, "The I-V Characteristic Prediction of BCD LV pMOSFET Devices based on an ANFIS-Based Methodology," [Prime Archives in Electronics](#), (ISBN: 978-93-90014-22-4), pp.1-20, Hyderabad, India, Jan. 2021.
2. Shen-Li Chen\*, Pei-Lin Wu and Yu-Jen Chen, "Robust ESD-Reliability Design of 300-V Power N-channel LDMOSs with the Elliptical Cylinder Super-junctions in the Drain Side," [Industrial Applications of Power Electronics](#) (ISBN: 978-3-03943-483-1), pp. 265-278, MDPI Publisher(Editor: Eduardo M. G. Rodrigues), Basel, Switzerland, Dec. 2020.
3. Po-Lin Lin, Shen-Li Chen\* and Sheng-Kai Fan, "ESD-Immunity Impacts in 300 V nLDMOS by Comprehensive Drift-region Engineering," [Intelligent Electronic Devices](#) (ISBN: 978-3-03928-973-8), pp. 91-104, MDPI Publisher(Editor: Teen-Hang Meen), Basel, Switzerland, May 2020.
4. Shen-Li Chen\*, Yi-Cih Wu, "Sensing and Reliability Improvement of Electrostatic-Discharge Transient by Discrete Engineering for High-Voltage 60-V N-Channel Lateral-Diffused MOSFETs with Embedded Silicon-Controlled Rectifiers," [Top 5 Contributions on Sensor and Biosensor Technology](#), 2nd Edition (ISBN: 978-93-88170-19-2), pp. 2-22, AVID SCIENCE Publisher(Editor: Priyanka), Berlin, Germany, Dec. 2018.
5. Shen-Li Chen\*, Chun-Ju Lin, and Yu-Ting Huang, "Impacts of ESD Reliability by Different Layout Engineering in the 0.25- $\mu$ m 60-V High-voltage LDMOS Devices," [Nano Devices and Sensors](#) (ISBN 978-1-5015-1050-2), pp. 177-197, De Gruyter Publisher, Berlin, Germany, Mar. 2016.
6. Shen-Li Chen\*, Shawn Chang, Yu-Ting Huang, Shun-Bao Chang, "Anti-ESD Improvement by the Bulk-FOX Structure in HV nLDMOS Devices," [Lecture Notes in Electrical Engineering](#) (ISBN: 978-3-319-17313-9), vol. 345, Chap. 73, pp.571-577, New York, USA, Springer publisher, Jan. 2016.
7. Shen-Li Chen\*, Yu-Ting Huang, Shawn Chang, Shun-Bao Chang, "N+ Extended-Distribution Influences on Anti-ESD Ability in the 60-V pLDMOS-SCR (NPN arranged-type)," [Lecture Notes in Electrical Engineering](#) (ISBN: 978-3-319-17313-9), vol. 345, Chap. 74, pp.579-585, New York, USA, Springer publisher, Jan. 2016.
8. Shen-Li Chen\*, Min-Hua Lee, Chun-Ju Lin, Yi-Sheng Lai, Shawn Chang, and Yu-Ting Huang, "ESD Performance Influence of a 60-V Lateral-diffused-MOST by the FOD Based (& Dotted-OD) Drain", [Lecture Notes in Electrical Engineering-Intelligent Technologies and Engineering Systems](#) (ISBN: 978-3-319-04572-6), vol. 293, Chap. 108, pp.883-890, New York, USA, Springer publisher, 2014.
9. Shen-Li Chen\*, Min-Hua Lee, Yi-Sheng Lai, Chun-Ju Lin, Yu-Ting Huang, and Shawn Chang, "Effect of Drain FODs on ESD/LU Immunities in the 60V High-voltage nLDMOS", [Lecture Notes in Electrical Engineering- Intelligent Technologies and Engineering Systems](#) (ISBN: 978-3-319-04572-6), vol. 293, Chap. 107, pp.875-882, New York, USA, Springer publisher, 2014.

### C. Referred Conference Papers: (2014~2021)

1. Zhi-Wei Liu, Shen-Li Chen\*, Jhong-Yi Lai, Xing-chen Mai, Yu-Jie Chung, "Enhance the ESD Reliability of HV pLDMOS Transistors with the Embedded Horizontal SCR and Schottky Diode Techniques," [The 5th IEEE International Future Energy Electronics Conference](#), Taipei, Taiwan, Nov. 2021, pp.1-6.
2. Jhong-Yi Lai, Shen-Li Chen\*, Zhi-Wei Liu, Yu-Jie Chung, Xing-chen Mai, "ESD-capability Improvement of Ultra-high Voltage nLDMOS Components by the Drain Side Engineering," [The 5th IEEE International Future Energy Electronics Conference](#), Taipei, Taiwan, Nov. 2021, pp.1-6.
3. 賴忠義、陳勝利\*、林柏霖、劉誌瑋、麥新承, "超高壓 nLDMOS 操作電壓調整對 ESD 可靠度能力探討," [T-ESD & Reliability Conference](#), Hsinchu, Taiwan, Nov. 2021, pp.C2-1- C2-5.
4. Zhi-Wei Liu, Shen-Li Chen\*, Jhong-Yi Lai, Xing-Chen Mai, "圓形超高壓 nLDMOS 同心圓式 Poly 2 與漂移區超接面離散調變對抗 ESD 能力之影響," [T-ESD & Reliability Conference](#), Hsinchu, Taiwan, Nov. 2021, pp.C1-1- C1-4.
5. Xing-Chen Mai, Shen-Li Chen\*, Shi-Zhe Hong , Jhong-Yi Lai, Zhi-Wei Liu and Yu-Jie Chung, "Study on the ESD Immunity of High-voltage pLDMOS with the Vertical Parasitic Schottky/SCR Structures in the Drain Electrode," [8th IEEE & 9th The International Conference on Science, Education, and Viable Engineering \(ICSEVEN 2021\)](#), Taitung, Taiwan, Oct. 2021.
6. Jhong-Yi Lai, Shen-Li Chen\*, Zhi-Wei Liu, Yu-Jie Chung and Xing-Chen Mai, " Research on ESD Reliability of Ultra-high Voltage nLDMOSs Modulated by Different Operating Voltages," [8th IEEE & 9th The International Conference on Science, Education, and Viable Engineering \(ICSEVEN 2021\)](#), Taitung, Taiwan, Oct. 2021.
7. Zhi-Wei Liu, Shen-Li Chen\*, Jhong-Yi Lai, Xing-Chen Mai and Yu-Jie Chung, "ESD Study of the Concentric Poly2 with Different Potentials and the Discrete HVPW Modulation on Circular Ultra-high Voltage nLDMOS Devices," [8th IEEE & 9th The International Conference on Science, Education, and Viable Engineering \(ICSEVEN 2021\)](#), Taitung, Taiwan, Oct. 2021.
8. Zhi-Wei Liu, Shen-Li Chen\*, Sheng-Kai Fan, Shi-Zhe Hong, Tien-Yu Lan, Yu-Jie Zhou and Jhong-Yi Lai, "ESD-capability Improvement of the Embedded Horizontal SCR Modulation for HV pLDMOS Devices," [The 4th NIT-NUU Bilateral Academic Conference](#), Miaoli, Taiwan, Sep. 2021, pp. 1-1.
9. Jhong-Yi Lai, Shen-Li Chen\*, Tien-Yu Lan, Yu-Jie Zhou, Shi-Zhe Hong and Zhi-Wei Liu, "ESD Protection Study of Ultra-high Voltage nLDMOS Device's Applications," [The 4th NIT-NUU Bilateral Academic Conference](#), Miaoli, Taiwan, Sep. 2021, pp. 1-1.
10. Yu-Jie Zhou, Shen-Li Chen\*, Tien-Yu Lan, Shi-Zhe Hong, Zhi-Wei Liu and Jhong-Yi Lai, " Improved UHV IGBT–Cell for ESD Protection with High Holding Voltage via a 0.5 $\mu$ m BCD Process," [IEEE International Conference on Consumer Electronics \(ICCE-TW\)](#), Penghu, Taiwan, Sep. 2021, pp. 1-2.
11. Shi-Zhe Hong, Shen-Li Chen\*, Tien-Yu Lan, Yu-Jie Zhou, Zhi-Wei Liu, and Jhong-Yi Lai, "ESD-Immunity Impact of HV pLDMOS with Drain-side Embedded Horizontal P-type Schottky Modulations," [IEEE International Conference on Consumer](#)

[Electronics \(ICCE-TW\)](#), Penghu, Taiwan, Sep. 2021, pp. 1-2.

12. Tien-Yu Lan, Shen-Li Chen\*, Yu-Jie Zhou, Shi-Zhe Hong, Chung-Yi Lai, Zhi-Wei Liu, "Holding-voltage Improvement of UHV Circular nLDMOS Transistors by the Drain-side SCR Engineering," [IEEE International Conference on Consumer Electronics \(ICCE-TW\)](#), Penghu, Taiwan, Sep. 2021, pp. 1-2.
13. 劉誌瑋, 陳勝利\*, 范盛凱, 洪士哲, 藍天興, 周昱杰, 賴忠義, "車用 HV pLDMOS 元件汲極內建水平 SCR 調變對 ESD 能力探討," [第一屆台灣智慧電動車及綠能科技研討會](#), 台灣台中, Jul.23, 2021, pp.E05-1-E05-4.
14. 賴忠義, 陳勝利\*, 藍天興, 周昱杰, 洪士哲, 劉誌瑋, "綠能用超高壓 nLDMOS 元件汲極端工程之靜電放電防護能力提升探討," [第一屆台灣智慧電動車及綠能科技研討會](#), 台灣台中, Jul.23, 2021, pp. E11-1- E11-3.
15. Yu-jie Zhou, Shen Li Chen, Tien-Yu Lan, Shi-Zhe Hong, Zhong-Yi Lai and Liu Zhi-Wei, "ESD Reliability Design of IGBT Cells with Parasitic Schottky Diodes in the Drain Side," [7th IEEE & 8th The International Conference on Science, Education, and Viable Engineering \(ICSEVEN 2021\)](#), Kinmen, Taiwan, Apr. 2021.
16. Shi-Zhe Hong, Shen-Li Chen, Tien-Yu Lan, Yu-Jie Zhou, Zhi-Wei Liu, and Jhong-Yi Lai, "ESD-Robustness Study of HV nLDMOS with Drain-side Embedded Parasitic Schottky/SCR Device Modulations," [7th IEEE & 8th The International Conference on Science, Education, and Viable Engineering \(ICSEVEN 2021\)](#), Kinmen, Taiwan, Apr. 2021.
17. Tien-Yu Lan, Shen-Li Chen\*, Yu-Jie Zhou, Shi-Zhe Hong, Chung-Yi Lai, Zhi-Wei Liu, "ESD-ability Investigation of the Elliptical UHV nLDMOS Transistors by the Different Types SCR in the Drain Side," [7th IEEE & 8th The International Conference on Science, Education, and Viable Engineering \(ICSEVEN 2021\)](#), Kinmen, Taiwan, Apr. 2021.
18. Yu-Jie Zhou, Shen-Li Chen\*, Tien-Yu Lan, Shi-Zhe Hong, Liu Zhi-Wei and Zhong-Yi Lai, "ESD Reliability Design of IGBT Cells with Parasitic Schottky Diodes in the Drain Side," [IEEE 7th The International Conference on Science, Education, and Viable Engineering \(ICSEVEN 2020\)](#), Penghu, Taiwan, Nov. 2020.
19. Shi-Zhe Hong, Shen-Li Chen\*, Sheng-Kai Fan, Tien-Yu Lan, Yu-Jie Zhou, Jhong-Yi Lai and Zhi-Wei Liu, "New Methods to Improve ESD Immunity on HV pLDMOS Devices with Drain-side Embedded Horizontal SCR Modulations," [IEEE 7th The International Conference on Science, Education, and Viable Engineering \(ICSEVEN 2020\)](#), Penghu, Taiwan, Nov. 2020.
20. Tien-Yu Lan, Shen-Li Chen\*, Yu-Jie Zhou, Shi-Zhe Hong, Zhi-Wei Liu and Jhong-Yi Lai, "SH\_P Ring and Concentration Gradient for ESD Enhancement in UHV Circular nLDMOS Transistors," [IEEE 7th The International Conference on Science, Education, and Viable Engineering \(ICSEVEN 2020\)](#), Penghu, Taiwan, Nov. 2020.
21. Po-Lin Lin, Shen-Li Chen\*, Sheng-Kai Fan, Tien-Yu Lan, Yu-Jie Zhou and Shi-Zhe Hong, "Improving the ESD Robustness of an Ultra-high voltage nLDMOS Device with the Embedded Schottky Diode," [IEEE International Conference on Consumer Electronics \(ICCE-TW\)](#), Taoyuan, Taiwan, Sep. 2020, pp. 1-2.
22. Sheng-Kai Fan, Shen-Li Chen\*, Po-Lin Lin, Shi-Zhe Hong, Tien-Yu Lan and Yu-Jie



- Zhou, "A Novel SCR-based Schottky Diode and Lightly P-well Additions of HV 60V nLDMOS on ESD Capability," [IEEE International Conference on Consumer Electronics \(ICCE-TW\)](#), Taoyuan, Taiwan, Sep. 2020, pp. 1-2.
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2. 陳勝利, "半导体结构", [中华人民共和国实用新型专利](#), 證書# CN 4085412 (ZL2014-2-0375327.2), pp. 1 ~ 11, 2014.07.08 ~ 2023.07.07
3. 陳勝利, "发光二极管", [中华人民共和国实用新型专利](#), 證書# CN 4050394 (ZL2014-2-0375246.2), pp. 1 ~ 11, 2014.07.08 ~ 2023.07.07
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