CV of Prof. Ming-Hsun Lee

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Professional Preparation

Univ. of Michigan	Ann Arbor, MI	Materials Science & Engineering	Ph.D., 2022
Univ. of Michigan	Ann Arbor, MI	Materials Science & Engineering	M.S., 2019
National Tsing Hua Univ.	Taiwan	Materials Science & Engineering	B.S., 2016

Appointments

Assistant Professor, Department of Physics, Texas State University	2025 – Present
Assistant Professor, ISoE – Electrical Engineering, Texas State University	2025 – Present
Assistant Professor, MSEC Program, Texas State University	2025 – Present
Technology Development Engineer, Intel Corporation	2022 – 2025
Visiting Scientist, Leibniz-Institut für Kristallzüchtung	2020

Selected Publications

- **M.-H. Lee**, T.-S. Chou, S. B. Anooz, Z. Galazka, A. Popp, and R. L. Peterson, *Exploiting the Nanostructural Anisotropy of β-Ga_2O_3 to Demonstrate Giant Improvement in Ohmic Junction*, ACS Nano, 16 (8): 11988-11997 (2022).
- **M.-H. Lee** and R. L. Peterson, *Process and Characterization of Ohmic Contacts for Beta-Phase Gallium Oxide*, Journal of Materials Research 36 (23): 4771-4789 (2021). (feature review paper)
- **M.-H. Lee** and R. L. Peterson, *Accelerated Aging Stability of β-Ga_2O_3 - Titanium/Gold Ohmic Interfaces*, ACS Applied Materials & Interfaces 12 (41): 46277-46287 (2020).
- **M.-H. Lee** and R. L. Peterson, *Interfacial Reactions of Titanium/Gold Ohmic Contacts with Sn-doped β-Ga_2O_3*, APL Materials 7 (2): 022524 (2019).
- A. G. Jacobs, J. A. Spencer, M. J. Tadjer, B. N. Feigelson, A. Lamb, **M.-H. Lee**, R. L. Peterson, F. Alema, A. Osinsky, Y. Zhang, K. D. Hobart, and T. J. Anderson, *Silicon Ion Implant Activation in β-$(Al_{0.2}Ga_{0.8})_2O_3$*, Journal of Electronic Materials, 53(6): 2811–2816 (2024).

Selected Conference Presentations

- **M.-H. Lee**, R. Schewski, J. B. Varley, T. Remmele, R. L. Peterson, M. Albrecht, *Quantitative Study of Ga Interstitial Diffusion in β-Ga_2O_3: Insights from In Situ Transmission Electron Microscopy and First-Principles Calculations*, 5th International Workshop on Gallium Oxide and Related Materials (IWGO-2024), May 2024, Berlin, Germany, Oral Presentation.

- **M.-H. Lee**, A. G. Jacobs, M. J. Tadjer, and R. L. Peterson, *Ion Implantation Doping for β-$Al_xGa_{2-x}O_3$ and the Application for Ohmic Contact Formation*, 64th Electronic Materials Conference (EMC-64), July 2022, Columbus, OH, Oral Presentation.
- **M.-H. Lee**, T.-S. Chou, S. B. Anooz, Z. Galazka, A. Popp, and R. L. Peterson, *Using Crystalline Anisotropy to Improve Ohmic Contact Performance for β-Ga_2O_3*, 2022 Compound Semiconductor Week (CSW-2022), June 2022, Ann Arbor, MI, Oral Presentation.
- **M.-H. Lee** and R. L. Peterson, *The Effect of Silicon Ion-Implant on Charge Transport Mechanisms of Ti/Au Ohmic Contacts to β-Ga_2O_3*, Materials Research Society (MRS Spring/Fall Meeting, November 2020, Boston, MA, Oral Presentation (Virtual).
- **M.-H. Lee** and R. L. Peterson, *Process Influence on the Performance and Aging Stability of Ti/Au Ohmic Contacts to Beta-Phase Gallium Oxide*, 62nd Electronic Materials Conference (EMC-62), June 2020, Columbus, OH, Oral Presentation (Virtual).

Selected Patents

- **M.-H. Lee**, A. G. Jacobs, M. J. Tadjer, and R. L. Peterson, *Doped Aluminum-alloyed Gallium Oxide and Ohmic Contacts*, US Patent Application 17/940,231 filed Sep. 9, 2022.
- G. Xu, L. Baumgartel, T. Jacroux, O. Golonzka, O. Acton, D. J. Towner, T. Jiang, O. Saadat, **M.-H. Lee**, T. Chu, A. S. Murthy, N. Duan, and C.-H. Lin, *Contact Over Active Structure with Gate Recess for Gate Insulating Cap Layers for Advanced Integrated Circuit Structure Fabrication*, US Patent Application 18/753,899 filed June 26, 2024.
- G. Xu, T. Chu, K. Zhang, R. Chao, T.-H. Hung, F. Zhang, C.-C. Lin, C. W. Lin, C.-H. Lin, O. Golonzka, T. Ghani, Y. Zhang, **M.-H. Lee**, *Gate Metallization for Integrated Circuit Structures*, US Patent Application 18/978,319 filed Dec. 12, 2024.
- G. Xu, T. Chu, C. W. Yeung, K. Zhang, F. Zhang, **M.-H. Lee**, Y. Zhang, C.-C. Lin, C.-H. Lin, T. Ghani, *An Integration Scheme of Metallization Prior to High-K Dielectric Recess for Advanced Transistor Fabrication*, US Patent Application, filed June 2025.

Selected Honors

- TD Divisional Recognition Award – Q2/2025, Intel Corporation
- TD Divisional Recognition Award – Q1/2025, Intel Corporation
- TD Department Divisional Award – Q3/2024, Intel Corporation
- TD Department Divisional Award – Q2/2024, Intel Corporation
- TD Divisional Recognition Award – Q2/2024, Intel Corporation
- TD Department Divisional Award – Q4/2023, Intel Corporation
- TD Divisional Recognition Award – Q3/2023, Intel Corporation
- MMRI Annual Symposium Award, 2021, University of Michigan
- Excellent Academic Achievement Award, 2015 National Tsing Hua University