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Recent Key Publications

- H.Y. Hsieh, H.W. Yen, Y.A. Chen, H.C. Chan, C.L. Kuo, M.J. Chen, T.C. Chang, C.Y. Chen, J. Shieh, In-situ TEM analysis of reversible antiferroelectricity in ZrO₂ thin films via near-constant-volume tetragonal symmetry transition, *Materials Today* **94**, 103257, 2026.
- S.C. Chang, H.C. Chan, H.Y. Hsieh, C.L. Kuo, M.J. Chen, J. Shieh, Synergistic design of interfacial conditions and textured Pt electrodes for enhanced ferroelectricity in ZrO₂ ultrathin films, *Acta Materialia* **296**, 121215, 2025.
- T.Y. Wang, C.H. Chuang, C.L. Mo, Y.S. Jiang, J.J. Shyue, J. Shieh, M.J. Chen, Alternating multi-pulse atomic layer deposition for dopant tailoring in sub-10 nm ferroelectric thin films, *Materials Today Chemistry* **43**, 102459, 2025.
- C.Y. Chang, J. Shieh, Y.L. Kuo, J.Y. Guo, S.Y. Chen, C.L. Kuo, Tuning lattice defects and photocurrent response of ZnO thin films by Mg doping and Ar-H₂ atmospheric plasma treatment, *Applied Surface Science* **638**, 158018, 2023.
- Y.S. Jiang, K.W. Huang, S.H. Yi, C.I. Wang, T.J. Chang, W.C. Kao, C.Y. Wang, Y.T. Yin, J. Shieh, M.J. Chen, Ferroelectric ZrO₂ ultrathin films on silicon for metal-ferroelectric-semiconductor capacitors and transistors, *Journal of the European Ceramic Society* **42**, 6997-7003, 2022.
- T.Y. Wang, W.C. Kao, Y.T. Yin, J. Shieh, M.J. Chen, Ferroelectric enhancement of Al-doped HfO₂ thin films by rapid electron beam annealing in a low thermal budget, *Journal of the European Ceramic Society* **42**, 4221-4226, 2022.
- K.W. Huang, S.H. Yi, Y.S. Jiang, W.C. Kao, Y.T. Yin, D. Beck, V. Korolkov, R. Proksch, J. Shieh, M.J. Chen, Sub-7-nm textured ZrO₂ with giant ferroelectricity, *Acta Materialia* **205**, 116536, 2021.
- S.H. Yi, B.T. Lin, T.Y. Hsu, J. Shieh, M.J. Chen, Modulation of ferroelectricity and antiferroelectricity of nanoscale ZrO₂ thin films using ultrathin interfacial layers, *Journal of the European Ceramic Society* **39**, 4038-4045, 2019.
- B.T. Lin, Y.W. Lu, J. Shieh, M.J. Chen, Induction of ferroelectricity in nanoscale ZrO₂ thin films on Pt electrode without post-annealing, *Journal of the European Ceramic Society* **37**, 1135-1139, 2017.
- Y.W. Lu, J. Shieh, F.Y. Tsai, Induction of ferroelectricity in nanoscale ZrO₂/HfO₂ bilayer thin films on Pt/Ti/SiO₂/Si substrates, *Acta Materialia* **115**, 68-75, 2016.