Stanford

Paul McIntyre

Rick and Melinda Reed Professor, Professor of Photon Science and Senior Fellow at the Precourt Institute for Energy

Materials Science and Engineering

CONTACT INFORMATION

- **Administrator**

  Nhung Lai - Administrative Associate

  Email nhunglai@stanford.edu

Bio

BIO

McIntyre's group performs research on nanostructured inorganic materials for applications in electronics, energy technologies and sensors. He is best known for his work on metal oxide/semiconductor interfaces, ultrathin dielectrics, defects in complex metal oxide thin films, and nanostructured Si-Ge single crystals. His research team synthesizes materials, characterizes their structures and compositions with a variety of advanced microscopies and spectroscopies, studies the passivation of their interfaces, and measures functional properties of devices.

ACADEMIC APPOINTMENTS

- Professor, Materials Science and Engineering
- Professor, Photon Science Directorate
- Senior Fellow, Precourt Institute for Energy
- Member, Bio-X

ADMINISTRATIVE APPOINTMENTS

- Associate Lab Director, SLAC National Accelerator Laboratory, (2019- present)
- Director, Stanford Synchrotron Radiation LIghtsource, (2019- present)
- Department Chair, Materials Science and Engineering, (2014-2019)
- Director, Geballe Laboratory for Advance Materials, (2008-2013)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, Board of Directors, Materials Research Society (2018 - 2020)

PROGRAM AFFILIATIONS

- Stanford SystemX Alliance

PROFESSIONAL EDUCATION

- BASc, University of British Columbia (1988)
- ScD, MIT (1993)

Teaching

COURSES

2025-26

- Rate Processes in Materials: MATSCI 182 (Win)
- Rate Processes in Materials: MATSCI 212 (Win)

2024-25

- Rate Processes in Materials: MATSCI 182 (Win)
- Rate Processes in Materials: MATSCI 212 (Win)

2023-24

- Rate Processes in Materials: MATSCI 182 (Win)
- Rate Processes in Materials: MATSCI 212 (Win)

2022-23

- Rate Processes in Materials: MATSCI 182 (Win)
- Rate Processes in Materials: MATSCI 212 (Win)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Lauren Moghimi, Tri Nguyen, Xiting Zhang

Postdoctoral Faculty Sponsor

Anis Attiaoui, Didem Dede, JeongWoo Jeon, Radha Jitendra Rathod, Seung Kyu Ryoo

Doctoral Dissertation Advisor (AC)

Daniel Chaykin, Ashildur Fridriksdottir, Zoe Jacobs, Soham Joshi, Karina Masalkovaite, Cristian Ruano Arens

Master's Program Advisor

Chia Lee

Postdoctoral Research Mentor

Anis Attiaoui

Publications

PUBLICATIONS

- **Gate-Dielectric Engineering with an Ultrathin Silicon Oxide Interfacial Dipole Layer for Low-Leakage Oxide-Semiconductor Memories.** *Nano letters*
  Athena, F. F., Hartanto, J., Passlack, M., Evans, J. C., Qin, J., Dede, D., Jana, K., Liu, S., Peña, T., Pop, E., Pitner, G., Radu, I. P., McIntyre, et al
  2026
- **Multi-V_T in Oxide--Semiconductor Transistors Leveraging Sub-1-nm Dipoles for Low-Refresh Energy Gain Cell Memory** *IEEE TRANSACTIONS ON ELECTRON DEVICES*
  Athena, F., Kang, J., Passlack, M., Safron, N., Dede, D., Jana, K., Saini, B., Wang, X., Liu, S., Hartanto, J., Boneh, E., Chen, H., Huang, et al
  2025
- **Composition dependence of atomic order in strain-relaxed, metastable GeSn alloys** *PHYSICAL REVIEW MATERIALS*
  Lentz, J., Fridriksdottir, A., Woicik, J. C., Davis, R., Mehta, A., Mcintyre, P. C.
  2025; 9 (10)

- **Short-range order and longer-range disorder revealed in germanium-tin alloy thin films by extended x-ray absorption fine structure analysis** *JOURNAL OF APPLIED PHYSICS*
  Lentz, J., Zhao, H., Woicik, J. C., Zeng, Y., McIntyre, P. C.
  2025; 137 (14)
- **Dimensional Scaling of Ferroelectric Properties of Hafnia-Zirconia Thin Films: Electrode Interface Effects.** *ACS nano*
  Huang, F., Saini, B., Wan, L., Lu, H., He, X., Qin, S., Tsai, W., Gruverman, A., Meng, A. C., Wong, H. P., McIntyre, P. C., Wong, S.
  2024
- **Atomic Layer Deposition of WO3-Doped In2O3 for Reliable and Scalable BEOL-Compatible Transistors.** *Nano letters*
  Yoo, C., Hartanto, J., Saini, B., Tsai, W., Thampy, V., Niavol, S. S., Meng, A. C., McIntyre, P. C.
  2024
- **Flexible Ferroelectric Memory using Non-adhesive Transfer Layer**
  Wahid, S., Saini, B., McIntyre, P., Daus, A., Pop, E., IEEE
  IEEE.2024
- **Enhanced Switching Reliability of Hf0.5Zr0.5O2 Ferroelectric Films Induced by Interface Engineering.** *ACS applied materials & interfaces*
  Huang, F., Saini, B., Yu, Z., Yoo, C., Thampy, V., He, X., Baniecki, J. D., Tsai, W., Meng, A. C., McIntyre, P. C., Wong, S.
  2023
- **Kinetics and mechanism of light-induced phase separation in a mixed-halide perovskite** *MATTER*
  Peng, S., Wang, Y., Braun, M., Yin, Y., Meng, A. C., Tan, W., Saini, B., Severson, K., Marshall, A. F., Sytwu, K., Baniecki, J. D., Dionne, J., Cai, et al
  2023; 6 (6): 2052-2065
- **Atomic-Layer-Deposited TiO2-IrO X Nanoscale Thin-Film Electrocatalysts for Water and Chloride Oxidation: Influence of Local Phase Separation** *ACS APPLIED ENERGY MATERIALS*
  Babadi, A., Monaghan, S., O'Rourke, C., Braun, M., Brock, L., Cheng, H., Tessner, T., Hurley, P. K., Mills, A., McIntyre, P. C.
  2023
- **Field-Induced Ferroelectric Phase Evolution During Polarization "Wake-Up" in Hf0.5Zr0.5O2 Thin Film Capacitors** *ADVANCED ELECTRONIC MATERIALS*
  Saini, B., Huang, F., Choi, Y., Yu, Z., Thampy, V., Baniecki, J. D., Tsai, W., McIntyre, P. C.
  2023
- **Local ordering in Ge/Ge-Sn semiconductor alloy core/shell nanowires revealed by extended x-ray absorption fine structure (EXAFS)** *APPLIED PHYSICS LETTERS*
  Lentz, J., Woicik, J. C., Bergschneider, M., Davis, R., Mehta, A., Cho, K., McIntyre, P. C.
  2023; 122 (6)
- **Nanocrystallite Seeding of Metastable Ferroelectric Phase Formation in Atomic Layer-Deposited Hafnia-Zirconia Alloys.** *ACS applied materials & interfaces*
  Yu, Z., Saini, B., Liu, Y., Huang, F., Mehta, A., Baniecki, J. D., Wong, H. P., Tsai, W., McIntyre, P. C.
  2022
- **Oxide Decomposition and Sn Surface Segregation on Core/Shell Ge/ GeSn Nanowires** *ACS APPLIED ELECTRONIC MATERIALS*
  Braun, M. R., Lentz, J., Bishnoi, I., Meng, A. C., Casalena, L., Cheng, H., Mcintyre, P. C.
  2022
- **The 2022 solar fuels roadmap** *JOURNAL OF PHYSICS D-APPLIED PHYSICS*
  Segev, G., Kibsgaard, J., Hahn, C., Xu, Z. J., Cheng, W., Deutsch, T. G., Xiang, C., Zhang, J. Z., Hammarstrom, L., Nocera, D. G., Weber, A. Z., Agbo, P., Hisatomi, et al
  2022; 55 (32)
- **CeO2 Doping of Hf0.5Zr0.5O2 Thin Films for High Endurance Ferroelectric Memories** *ADVANCED ELECTRONIC MATERIALS*
  Yu, Z., Saini, B., Liao, P., Chang, Y., Hou, D., Nien, C., Shih, Y., Yeong, S., Afanas'ev, V., Huang, F., Baniecki, J. D., Mehta, A., Chang, et al
  2022
- **Measurement of Ferroelectric Properties of Nanometer Scaled Individual Metal/Hf0.5Zr0.5O2/Metal Capacitors** *IEEE ELECTRON DEVICE LETTERS*
  Huang, F., Passlack, M., Liew, S., Yu, Z., Lin, Q., Babadi, A., Hou, V., McIntyre, P. C., Wong, S.

2022; 43 (2): 212-215

- **Bending and precipitate formation mechanisms in epitaxial Ge-core/GeSn-shell nanowires.** *Nanoscale*
  Meng, A. C., Wang, Y., Braun, M. R., Lentz, J. Z., Peng, S., Cheng, H., Marshall, A. F., Cai, W., McIntyre, P. C.
  2021
- **Link between Gas Phase Reaction Chemistry and the Electronic Conductivity of Atomic Layer Deposited Titanium Oxide Thin Films.** *The journal of physical chemistry letters*
  Babadi, A. S., Tang-Kong, R., McIntyre, P. C.
  2021: 3625–32
- **Growth mode control for direct-gap core/shell Ge/GeSn nanowire light emission** *MATERIALS TODAY*
  Meng, A. C., Braun, M. R., Wang, Y., Peng, S., Tan, W., Lentz, J., Xue, M., Pakzad, A., Marshall, A. F., Harris, J. S., Cai, W., McIntyre, P. C.
  2020; 40: 101–13
- **Interfacing Low-Temperature Atomic Layer Deposited TiO2 Electron Transport Layers with Metal Electrodes** *ADVANCED MATERIALS INTERFACES*
  Tan, W., Bowring, A. R., Babadi, A. S., Meng, A. C., Tang-Kong, R., McGehee, M. D., McIntyre, P. C.
  2020; 7 (8)
- **Practical challenges in the development of photoelectrochemical solar fuels production** *SUSTAINABLE ENERGY & FUELS*
  Spitler, M. T., Modestino, M. A., Deutsch, T. G., Xiang, C. X., Durrant, J. R., Esposito, D. V., Haussener, S., Maldonado, S., Sharp, I. D., Parkinson, B. A., Ginley, D. S., Houle, F. A., Hannappel, et al
  2020; 4 (3): 985–95
- **Mid-infrared emission and absorption from GeSn/Ge core-shell nanowires with nanophotonic light extraction**
  Peng, S., Braun, M., Meng, A., Shang, Z., Salleo, A., McIntyre, P. C., IEEE
  IEEE.2020
- **Initial growth analysis of ALD Al2O3 film on hydrogen-terminated Si substrate via in situ XPS** *JAPANESE JOURNAL OF APPLIED PHYSICS*
  Fukumizu, H., Sekine, M., Hori, M., McIntyre, P. C.
  2020; 59 (1)
- **In-Situ Reflectometry to Monitor Locally-Catalyzed Initiation and Growth of Nanowire Assemblies.** *Nanotechnology*
  Braun, M. R., Guniat, L. n., Fontcuberta I Morral, A. n., McIntyre, P. C.
  2020
- **Imaging light-induced phase separation dynamics of inorganic halide perovskites**
  Peng, S., Meng, A., Tan, W., Braun, M., Saini, B., Severson, K., Marshall, A., McIntyre, P. C., IEEE
  IEEE.2020
- **Effect of IrO2 Spatial Distribution on the Stability and Charge Distribution of Ti1-xIrxO2 Alloys** *CHEMISTRY OF MATERIALS*
  Villena, M. A., Magyari-Kope, B., Nishi, Y., McIntyre, P. C., Lanza, M.
  2019; 31 (21): 8742–51
- **Phase-field investigation of the stages in radial growth of core-shell Ge/Ge1-xSnx nanowires.** *Nanoscale*
  Wang, Y., Meng, A. C., McIntyre, P. C., Cai, W.
  2019
- **Reversible Decay of Oxygen Evolution Activity of Iridium Catalysts** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*
  Tang-Kong, R., Chidsey, C. E. D., McIntyre, P. C.
  2019; 166 (14): H712–H717
- **Plasmons and inter-band transitions of hexagonal close packed gold nanoparticles** *APPLIED PHYSICS LETTERS*
  Peng, S., Meng, A. C., Braun, M. P., Marshall, A. F., McIntyre, P. C.
  2019; 115 (5)
- **> 10% solar-to-hydrogen efficiency unassisted water splitting on ALD-protected silicon heterojunction solar cells** *SUSTAINABLE ENERGY & FUELS*
  Tan, C., Kemp, K. W., Braun, M. R., Meng, A. C., Tan, W., Chidsey, C. E. D., Ma, W., Moghadam, F., McIntyre, P. C.
  2019; 3 (6): 1490–1500

- **Al2O3/Si0.7Ge0.3(001) & HfO2/Si(0.7)Ge0.3(001) interface trap state reduction via in-situ N-2/H-2 RF downstream plasma passivation** *APPLIED SURFACE SCIENCE*
  Breeden, M., Wolf, S., Ueda, S., Fang, Z., Chang, C., Tang, K., McIntyre, P., Kummel, A. C.
  2019; 478: 1065–73
- **Engineering High-k/SiGe Interface with ALD Oxide for Selective GeOx Reduction** *ACS APPLIED MATERIALS & INTERFACES*
  Kavrik, M. S., Ercius, P., Cheung, J., Tang, K., Wang, Q., Fruhberger, B., Kim, M., Taur, Y., McIntyre, P. C., Kummel, A. C.
  2019; 11 (16): 15111–21
- **Engineering High- k/SiGe Interface with ALD Oxide for Selective GeO x Reduction.** *ACS applied materials & interfaces*
  Kavrik, M. S., Ercius, P., Cheung, J., Tang, K., Wang, Q., Fruhberger, B., Kim, M., Taur, Y., McIntyre, P. C., Kummel, A. C.
  2019
- **Atomic Layer Deposited TiO2-IrOx Alloys Enable Corrosion Resistant Water Oxidation on Silicon at High Photovoltage** *CHEMISTRY OF MATERIALS*
  Hendricks, O. L., Tang-Kong, R., Babadi, A. S., McIntyre, P. C., Chidsey, C. E. D.
  2019; 31 (1): 90–100
- **Dynamic Structure and Chemistry of the Silicon Solid-Electrolyte Interphase Visualized by Cryogenic Electron Microscopy** *Matter*
  Huang, W., Wang, J., Braun, M. R., Zhang, Z., Li, Y., Boyle, D. T., McIntyre, P. C., Cui, Y.
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- **Understanding the Mechanism of Electronic Defect Suppression Enabled by Nonidealities in Atomic Layer Deposition.** *Journal of the American Chemical Society*
  Kavrik, M. S., Bostwick, A. n., Rotenberg, E. n., Tang, K. n., Thomson, E. n., Aoki, T. n., Fruhberger, B. n., Taur, Y. n., McIntyre, P. C., Kummel, A. C.
  2019
- **Silicon Photoanodes for Solar-Driven Oxidation of Brine: A Nanoscale, Photo-Active Analog of the Dimensionally-Stable Anode** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*
  Tang-Kong, R., O'Rourke, C., Mills, A., McIntyre, P. C.
  2018; 165 (16): H1072–H1079
- **Dynamic thermal emission control with InAs-based plasmonic metasurfaces.** *Science advances*
  Park, J., Kang, J., Liu, X., Maddox, S. J., Tang, K., McIntyre, P. C., Bank, S. R., Brongersma, M. L.
  2018; 4 (12): eaat3163
- **Surface Defect Passivation of Silicon Micropillars** *ADVANCED MATERIALS INTERFACES*
  Mikulik, D., Meng, A. C., Berrazouane, R., Stueckelberger, J., Romero-Gomez, P., Tang, K., Haug, F., Fontcuberta i Morral, A., McIntyre, P. C.
  2018; 5 (20)
- **The Role of Catalyst Adhesion in ALD-TiO2 Protection of Water Splitting Silicon Anodes.** *ACS applied materials & interfaces*
  Tang-Kong, R., Winter, R., Brock, R., Tracy, J., Eizenberg, M., Dauskardt, R. H., McIntyre, P. C.
  2018
- **Ultralow Defect Density at Sub-0.5 nm HfO2/SiGe Interfaces via Selective Oxygen Scavenging** *ACS APPLIED MATERIALS & INTERFACES*
  Kavrik, M. S., Thomson, E., Chagarov, E., Tang, K., Ueda, S. T., Hou, V., Aoki, T., Kim, M., Fruhberger, B., Taur, Y., McIntyre, P. C., Kummel, A. C.
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- **Atomic Layer Deposited TiO2-IrOx Alloy as a Hole Transport Material for Perovskite Solar Cells** *ADVANCED MATERIALS INTERFACES*
  Tan, W., Hendricks, O. L., Meng, A. C., Braun, M. R., McGehee, M. D., Chidsey, C. E. D., McIntyre, P. C.
  2018; 5 (16)
- **Interfacial Cation-Defect Charge Dipoles in Stacked TiO2/Al2O3 Gate Dielectrics** *ACS APPLIED MATERIALS & INTERFACES*
  Zhang, L., Janotti, A., Meng, A. C., Tang, K., Van de Walle, C. G., McIntyre, P. C.
  2018; 10 (6): 5140–46
- **Thermal Stability of Mixed Cation Metal Halide Perovskites in Air** *ACS APPLIED MATERIALS & INTERFACES*
  Tang, W., Bowring, A. R., Meng, A. C., McGehee, M. D., McIntyre, P. C.
  2018; 10 (6): 5485–91

- **Bias temperature stress induced hydrogen depassivation from Al2O3/InGaAs interface defects** *JOURNAL OF APPLIED PHYSICS*
  Tang, K., Droopad, R., McIntyre, P. C.
  2018; 123 (2)
- **Using liquid electrolytes in dielectric reliability studies**
  Lanza, M., Tang, K., Meng, A. C., Hui, F., Shi, Y., Han, T., Petach, T., Hitzman, C., Koh, A., Goldhaber-Gordon, D., McIntyre, P. C., IEEE
  IEEE.2018
- **Contact Selectivity Engineering in a 2 mum Thick Ultrathin c-Si Solar Cell Using Transition-Metal Oxides Achieving an Efficiency of 10.8.** *ACS applied materials & interfaces*
  Xue, M., Islam, R., Meng, A. C., Lyu, Z., Lu, C., Tae, C., Braun, M. R., Zang, K., McIntyre, P. C., Kamins, T. I., Saraswat, K. C., Harris, J. S.
  2017
- **Resistive Random Access Memory Cells with a Bilayer TiO2/SiOX Insulating Stack for Simultaneous Filamentary and Distributed Resistive Switching** *ADVANCED FUNCTIONAL MATERIALS*
  Xiao, N., Villena, M. A., Yuan, B., Chen, S., Wang, B., Elias, M., Shi, Y., Hui, F., Jing, X., Scheuermann, A., Tang, K., McIntyre, P. C., Lanza, et al
  2017; 27 (33)
- **Effects of H-2 High-pressure Annealing on HfO2/Al2O3/In0.53Ga0.47As Capacitors: Chemical Composition and Electrical Characteristics** *SCIENTIFIC REPORTS*
  Choi, S., An, Y., Lee, C., Song, J., Manh-Cuong Nguyen, Byun, Y., Choi, R., McIntyre, P. C., Kim, H.
  2017; 7: 9769
- **Distinguishing Oxygen Vacancy Electromigration and Conductive Filament Formation in TiO2 Resistance Switching Using Liquid Electrolyte Contacts.** *Nano letters*
  Tang, K., Meng, A. C., Hui, F., Shi, Y., Petach, T., Hitzman, C., Koh, A. L., Goldhaber-Gordon, D., Lanza, M., McIntyre, P. C.
  2017; 17 (7): 4390-4399
- **Phase Field Model for Morphological Transition in Nanowire Vapor-Liquid-Solid Growth** *CRYSTAL GROWTH & DESIGN*
  Wang, Y., McIntyre, P. C., Cai, W.
  2017; 17 (4): 2211-2217
- **Coexistence of Grain-Boundaries-Assisted Bipolar and Threshold Resistive Switching in Multilayer Hexagonal Boron Nitride** *ADVANCED FUNCTIONAL MATERIALS*
  Pan, C., Ji, Y., Xiao, N., Hui, F., Tang, K., Guo, Y., Xie, X., Puglisi, F. M., Larcher, L., Miranda, E., Jiang, L., Shi, Y., Valov, et al
  2017; 27 (10)
- **Interface Defect Hydrogen Depassivation and Capacitance-Voltage Hysteresis of Al2O3/InGaAs Gate Stacks** *ACS APPLIED MATERIALS & INTERFACES*
  Tang, K., Roberto Palumbo, F., Zhang, L., Droopad, R., McIntyre, P. C.
  2017; 9 (8): 7819-7825
- **Low temperature thermal ALD of a SiNx interfacial diffusion barrier and interface passivation layer on SixGe1-x(001) and SixGe1-x(110)** *JOURNAL OF CHEMICAL PHYSICS*
  Edmonds, M., Sardashti, K., Wolf, S., Chagarov, E., Clemons, M., Kent, T., Park, J. H., Tang, K., McIntyre, P. C., Yoshida, N., Dong, L., Holmes, R., Alvarez, et al
  2017; 146 (5)
- **Electrochemical impedance spectroscopy for quantitative interface state characterization of planar and nanostructured semiconductor-dielectric interfaces.** *Nanotechnology*
  Meng, A. C., Tang, K. n., Braun, M. R., Zhang, L. n., McIntyre, P. C.
  2017; 28 (41): 415704
- **Core-Shell Germanium/Germanium Tin Nanowires Exhibiting Room Temperature Direct- and Indirect-Gap Photoluminescence** *NANO LETTERS*
  Meng, A. C., Fenrich, C. S., Braun, M. R., McVittie, J. P., Marshall, A. F., Harris, J. S., McIntyre, P. C.
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- **Temperature Dependent Border Trap Response Produced by a Defective Interfacial Oxide Layer in Al2O3/InGaAs Gate Stacks** *ACS APPLIED MATERIALS & INTERFACES*
  Tang, K., Meng, A. C., Droopad, R., McIntyre, P. C.

2016; 8 (44): 30601-30607

- **Isolating the Photovoltaic Junction: Atomic Layer Deposited TiO2-RuO2 Alloy Schottky Contacts for Silicon Photoanodes** *ACS APPLIED MATERIALS & INTERFACES*
  Hendricks, O. L., Scheuermann, A. G., Schmidt, M., Hurley, P. K., McIntyre, P. C., Chidsey, C. E.
  2016; 8 (36): 23763-23773
- **Oxide Charge Engineering of Atomic Layer Deposited AlOxNy/Al2O3 Gate Dielectrics: A Path to Enhancement Mode GaN Devices.** *ACS applied materials & interfaces*
  Negara, M. A., Kitano, M., Long, R. D., McIntyre, P. C.
  2016; 8 (32): 21089-21094
- **Characterization of the photocurrents generated by the laser of atomic force microscopes** *REVIEW OF SCIENTIFIC INSTRUMENTS*
  Ji, Y., Hui, F., Shi, Y., Iglesias, V., Lewis, D., Niu, J., Long, S., Liu, M., Hofer, A., Frammelsberger, W., Benstetter, G., Scheuermann, A., McIntyre, et al
  2016; 87 (8)
- **Interface Engineering for Atomic Layer Deposited Alumina Gate Dielectric on SiGe Substrates.** *ACS applied materials & interfaces*
  Zhang, L., Guo, Y., Hassan, V. V., Tang, K., Foad, M. A., Woicik, J. C., Pianetta, P., Robertson, J., McIntyre, P. C.
  2016; 8 (29): 19110-19118
- **Atomic Layer Deposited Corrosion Protection: A Path to Stable and Efficient Photoelectrochemical Cells.** *journal of physical chemistry letters*
  Scheuermann, A. G., McIntyre, P. C.
  2016; 7 (14): 2867-2878
- **Effects of Titanium Layer Oxygen Scavenging on the High-k/InGaAs Interface** *ACS APPLIED MATERIALS & INTERFACES*
  Winter, R., Shekhter, P., Tang, K., Floreano, L., Verdini, A., McIntyre, P. C., Eizenberg, M.
  2016; 8 (26): 16979-16984
- **Titanium Oxide Crystallization and Interface Defect Passivation for High Performance Insulator-Protected Schottky Junction MIS Photoanodes** *ACS APPLIED MATERIALS & INTERFACES*
  Scheuermann, A. G., Lawrence, J. P., Meng, A. C., Tang, K., Hendricks, O. L., Chidsey, C. E., McIntyre, P. C.
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- **Engineering Interfacial Silicon Dioxide for Improved Metal-Insulator-Semiconductor Silicon Photoanode Water Splitting Performance** *ACS APPLIED MATERIALS & INTERFACES*
  Satterthwaite, P. F., Scheuermann, A. G., Hurley, P. K., Chidsey, C. E., McIntyre, P. C.
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- **Sulfur passivation for the formation of Si-terminated Al2O3/SiGe(001) interfaces** *APPLIED SURFACE SCIENCE*
  Sardashti, K., Hu, K., Tang, K., Park, S., Kim, H., Madisetti, S., McIntyre, P., Oktyabrsky, S., Siddiqui, S., Sahu, B., Yoshida, N., Kachian, J., Kummel, et al
  2016; 366: 455-463
- **Spontaneous, Defect-Free Kinking via Capillary Instability during Vapor-Liquid-Solid Nanowire Growth.** *Nano letters*
  Li, Y., Wang, Y., Ryu, S., Marshall, A. F., Cai, W., McIntyre, P. C.
  2016; 16 (3): 1713-1718
- **From Twinning to Pure Zincblende Catalyst-Free InAs(Sb) Nanowires.** *Nano letters*
  Potts, H., Friedl, M., Amaduzzi, F., Tang, K., Tütüncüoglu, G., Matteini, F., Alarcon Lladó, E., McIntyre, P. C., Fontcuberta i Morral, A.
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- **Nitride passivation of the interface between high-k dielectrics and SiGe** *APPLIED PHYSICS LETTERS*
  Sardashti, K., Hu, K., Tang, K., Madisetti, S., McIntyre, P., Oktyabrsky, S., Siddiqui, S., Sahu, B., Yoshida, N., Kachian, J., Dong, L., Fruhberger, B., Kummel, et al
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- **Conductance and capacitance of bilayer protective oxides for silicon water splitting anodes** *ENERGY & ENVIRONMENTAL SCIENCE*
  Scheuermann, A. G., Kemp, K. W., Tang, K., Lu, D. Q., Satterthwaite, P. F., Ito, T., Chidsey, C. E., McIntyre, P. C.
  2016; 9 (2): 504-516
- **From Twinning to Pure Zincblende Catalyst-Free InAs(Sb) Nanowires** *NANO LETTERS*

Potts, H., Friedl, M., Amaduzzi, F., Tang, K., Tuetuencueoglu, G., Matteini, F., Llado, E. A., McIntyre, P. C., Fontcuberta i Morral, A.
2016; 16 (1): 637-643

- **Design principles for maximizing photovoltage in metal-oxide-protected water-splitting photoanodes** *NATURE MATERIALS*
  Scheuermann, A. G., Lawrence, J. P., Kemp, K. W., Ito, T., Walsh, A., Chidsey, C. E., Hurley, P. K., McIntyre, P. C.
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