Andrew J. **Lohn**

PROFILE

Technical researcher at the core who has been able to step back and apply those skills and understanding to broad and complicated issues.

EDUCATION

Ph.D. - Electrical Engineering (2007-2012)
University of California Santa Cruz, CA USA

B.Eng. - Engineering Physics (2001-2006)
McMaster University, Hamilton, ON Canada

RESEARCH EXPERIENCE

CSET at Georgetown University – *Senior Fellow* - (2020-Present)
• Answer pressing policy problems at the three-way intersection of cybersecurity, artificial intelligence, and national security.
• Help develop future policy makers and advisors who have strong technical and methodological foundations along with broad policy perspectives.

RAND Corporation – *Information Scientist* - (2014-2020)
• Apply current methods to high-impact policy problems. Example methods: Reinforcement Learning, written equations, gaming, etc
• Lead teams of highly experienced researchers tackling complex problems. Example topics: AI risk, cyberwarfare, and drone delivery.
• Manage client relations with high-ranking executives in government

Pardee RAND Graduate School – *Professor of Public Policy* - (2018-2020)
• Design and teach course on offensive cybersecurity
• Mentor public policy graduate students, especially those with technical backgrounds or interests

Sandia National Laboratories - *Postdoctoral Researcher* - (2012-2014)
• Discovered and developed new device behavior then used it to design neural hardware for new computing architectures.
• Derived an equation describing the operation of next generation computing devices (RRAM) and used it to increase storage capacity per device by at least an order of magnitude.
• Our team went from TRL 0 (no working devices) to TRL 4 (wafer-scale, CMOS-compatible, device specs met) in one year, accelerating product timelines.

Hot Power, Inc. - *Chief Technology Officer* - (2011-2013)

• Led technology development and business planning for a nanotechnology-based energy company to convert heat to electricity.

NASA Ames Research Center - *Graduate Researcher* - (2009-2012)
• Built a nanotechnology lab from building permits to leading research facility.
• Attracted the interest of venture capitalists and government.

Hewlett-Packard Labs - *Visiting Researcher* - (2009-2012)
• Designed, simulated, and tested approaches to use light instead of electricity in computer wiring to alleviate a bottleneck in high performance computing

SELECTED AWARDS

Team Innovation Award – Project Air Force (2019).
Top 150 McMaster Engineering Alumni - 150th anniversary (2017).
RAND Spotlight Award (2015).
Sandia Certificate of Excellence (2013).
Newport Spectra Physics Research Excellence Award (2012).
APS Excellence in Graduate Research Award (2012).
Chancellor's Dissertation Fellowship (2011-2012).
National Graduate Student Award - American Vacuum Society - (2011).

COMMUNITY VOLUNTEER

IEEE Golden Reviewer Award - Electron Device Letters (2013, 2014, and 2016).
Outstanding Reviewer Award from Semiconductor Science and Technology (2017).

SELECTED TALKS

"Disinformation at Scale: Using GPT-3 Maliciously for Information Operations," Black Hat 2021.

"How Might AI Affect the Risk of Nuclear War?," Pentagon (2018) and Oxford University (2018).

"The future of urban air mobility," Uber Elevate 2018, Los Angeles, CA (2018).

"City-Scale Impacts of Drone Delivery," World Economic Forum - Future of Drones Steering Committee, San Francisco, CA (2017).

PUBLIC OPINION

Andrew J. Lohn, "What Chess Can Teach Us About the Future of AI and War," War On The Rocks, Jan 03, 2020
https://warontherocks.com/2020/01/what-chess-can-teach-us-about-the-future-of-ai-and-war/

Robert J. Lempert, Tim McDonald, **Andrew J. Lohn**, "A Better Way to Think About Scooters," Los Angeles Times Aug 28, 2018.
https://www.rand.org/blog/2018/08/a-better-way-to-think-about-scooters.html

Andrew J. Lohn, "What do Meltdown, Spectre and RyzenFall mean for the future of cybersecurity?" TechCrunch May 1, 2018.
https://techcrunch.com/2018/05/01/what-do-meltdown-spectre-and-ryzenfall-mean-for-the-future-of-cybersecurity/

Andrew J. Lohn, Edward Geist, "Will artificial intelligence undermine nuclear stability?" Bulletin of the Atomic Scientists Apr 30, 2018
https://thebulletin.org/will-artificial-intelligence-undermine-nuclear-stability11748

Andrew J. Lohn, Andrew Parasiliti, William Welser IV, "Should We Fear an AI Arms Race?" Defense One, Feb 08, 2016.
http://www.defenseone.com/ideas/2016/02/should-we-fear-ai-arms-race/125670/

Andrew J. Lohn, Andrew Parasiliti, William Welser IV, "How We Can Overcome the Risks of AI," TIME Magazine Oct 22, 2015
http://time.com/4080577/artificial- intelligence-risks/

WORK COVERED IN

BBC, Wall Street Journal, Forbes, POLITICO, CNBC, Wired, MIT Technology Review, Foreign Policy, Defense One, South China Morning Post, etc.

BOOK CHAPTERS

Andrew J. Lohn, Patrick R. Mickel, James B. Aimone, Matthew J. Marinella, "Memristors as Synapses in Artificial Neural Networks: Biomimicry Beyond Weight Change," in *Cybersecurity Systems for Human Cognition Augmentation*, Springer (2014).

RESEARCH REPORTS

Andrew J. Lohn, Wyatt Hoffman, "Securing AI: How Traditional Vulnerability Disclosure Must Adapt," Center for Security and Emerging Technology (2022).

Andrew J. Lohn, Micah Musser, "AI and Compute: How Much Longer Can Computing Power Drive Artificial Intelligence Progress," Center for Security and Emerging Technology (2022).

Ben Buchanan, **Andrew J. Lohn**, Micah Musser, Katerina Sedova "Truth, Lies, and Automation: How Language Models Could Change Disinformation," Center for Security and Emerging Technology (2021).

Andrew J. Lohn, "Poison in the Well: Securing the Shared Resources of Machine Learning," Center for Security and Emerging Technology (2021).

Andrew J. Lohn, "Hacking AI: A Primer for Policymakers on Machine Learning Cybersecurity," Center for Security and Emerging Technology (2020).

Andrew J. Lohn, Jair Aguirre, Mark Ashby, Benjamin Boudreaux, Jonathan Fujiwara, Gavin Hartnett, Daniel Ish, John Speed Meyers, Caolionn O'Connell, Li Ang Zhang, "Attacking Machine Learning in War," RR-4386-AF, (2020).

Forrest E Morgan, Benjamin Boudreaux, **Andrew J. Lohn**, Mark Ashby, Christian Curriden, Kelly Klima, Derek Grossman, "Military Applications of Artificial Intelligence: Ethical Concerns in an Uncertain World," RR-3139-AF (2020).

Li Ang Zhang, Jia Xu, Dara Gold, Jeff Hagen, Ajay K. Kochhar, **Andrew J. Lohn**, Osonda A. Osoba, "Air Dominance Through Machine Learning – A Preliminary Exploration of AI-Assisted Mission Planning," RR-4311-RC (2020).

Zachary Haldeman, Jair Aguirre, Jonathan Fujiwara, **Andrew Lohn**, Igor Mikolic- Torreira, "Effects Estimation for Cyberspace Operations," RR-3090-OSD, (2019).

Andrew J. Lohn, Quentin E. Hodson, "Quick Look: State Election Security Needs: An Analysis of the 2018 Help America Vote Act State Plans," PR-4347-DHS (2019).

Andrew Lohn, Akhil Shah, Jair Aguirre, Igor Mikolic-Torreira, "Uncertainty Analysis for Offensive Cyberspace Operations Effects Estimations," PR-3716-AF/1, (2019).

Andrew Lohn, Joshua Baron, Akhil Shah, Lillian Ablon, Irina Danescu, Lara Schmidt, "Uncertainty Analysis for Offensive Cyberspace Operations Effects Estimations," PR-3716-AF/1, (2019).

Andrew Lohn, Akhil Shah, Jair Aguirre, Dara Gold, "Uncertainty Analysis for Offensive Cyberspace Operations Effects Estimations," RR-2381-AF, (2019).

Edward Geist, **Andrew J. Lohn**, "Will Artificial Intelligence Increase the Risk of Nuclear War," PE-296-RC (2018).

Andrew J. Lohn, et al., "Providing Cyber Mission Assurance for Weapon Systems: An F-16 Case Study," RR-2838-AF (2019).

Caolionn O'Connell, et al., "Assessing Cybersecurity Risk to the Civil Engineering Infrastructure: A Methodology for Implementation at Air Force Bases," RR-2354-AF (2018).

Caolionn O'Connell, et al., "Cybersecurity of USAF Civil Engineering Control Systems: Buckley Air Force Base Case Study," (2017).

Andrew J. Lohn, Lara Schmidt, Caolionn O'Connell, Joshua Baron, "Results of a Wargame to Improve the Utility and Efficiency of Operational Test for Cyber Weapons," RR-1897-OSD, (2017).

Andrew J. Lohn, "The City-Scale Impacts of Drone Delivery," RR-1718-RAND, (2017).

Bryan W. Hallmark, et al. “Using CTC-Based Metrics to Support Policy and Program Decisions,” (2016).

Lara Schmidt, et. al. “Effects Estimation for Offensive Cyber: Is it Time for a Cyber JMEM?” (2016).

Yool Kim, et. al. “Assessing the Risks of Commonality Between Ground Based Strategic Deterrent and Submarine-Launched Ballistic Missile Systems.” (2016).

Jennie W. Wenger, et. al. “The Value of Experience in the Enlisted Force” (2016).

Conrad D. James, et. al. “A comprehensive approach to decipher biological computation to achieve next generation high-performance exascale computing” SAND2013-7915 (2013).

PATENTS

Andrew J. Lohn, Patrick R. Mickel, “Multilevel Resistive Information Storage and Retrieval,” US Patent No. 9,412,446 (2016).

P.R. Mickel, C.D. James, **Andrew J. Lohn**, M.J. Marinella, “Methods for resistive switching of memristors," US Patent No 9,336,870 (2016).

James E. Stevens, Matthew Marinella, **Andrew J. Lohn** Aluminum, "Memristor Using a Transition Metal Nitride Insulator," US Patent No. 8,872,246 (2014).

Nobuhiko P. Kobayashi and **Andrew J. Lohn**. Nanowire Composite for Thermoelectrics. WO 2,013,043,926 (Sept 20, 2012).

Patrick R. Mickel, Conrad D. James, Matthew J. Marinella, **Andrew J. Lohn**, "Method for Measuring and Modifying Memristor Switching Characteristics," Provisional App. No. 61/894,816 (Oct. 23, 2013).

James E. Stevens, **Andrew J. Lohn**, Patrick R. Mickel, Matthew J. Marinella, "Systems and methods to maintain optimum stoichiometry for reactively sputtered films," Provisional App. No. 61/971,301 (Jun. 21, 2013).

James B. Aimone, **Andrew J. Lohn**, Patrick R. Mickel, Erik P. Debenedictis, "Memristor circuit implementation of neurogenesis in neural networks," TA SD# 12953

Andrew J. Lohn, Patrick R. Mickel, Matthew J. Marinella, "Electrode Design for High Retention Resistive Switching," TA SD# 12945 (Nov. 25, 2013).

PUBLICATION

56) Andrew J. Lohn, “Downscaling Attack and Defense: Turning What You See Back Into What You Get,” arXiv 2010.02456 (2020).

55) Andrew J. Lohn, “Estimating the Brittleness of AI: Safety Integrity Levels and the Need for Testing Out-Of-Distribution Performance,” arXiv 2009.00802 (2020).

54) M. Brundage et al, “Toward Trustworthy AI development: mechanisms for supporting verifiable claims,” arXiv arXiv 2004.07213 (2020).

53) Gavin S. Hartnett, **Andrew J. Lohn**, Alexander P. Sedlack, “Adversarial Examples for Cost-Sensitive Classifiers,” Proceedings of the 33rd Conference on Neural Information Processing Systems - NeurIPS (2019).

52) Daniel Ish, **Andrew Lohn**, Christian Curriden, “A Quantitative History of A.I. Research in the United States and China,” in review, WR-1318-AF (2019).

51) Andrew J. Lohn, “Defense in Depth: The Basics of Blockade and Delay,” arXiv:1910.00111, in review, (2019).

50) Andrew J. Lohn, “Timelines for In-Code Discovery of Zero-Day Vulnerabilities and Supply-Chain Attacks,” arXiv:1808.10062 (2018).

49) B.J. Choi, A.C. Torrezan, J.P. Strachan, P.G. Kotula, **Andrew J. Lohn**, Matthew J. Marinella, Z. Li, R.S. Williams, J.J. Yang "High-Speed and Low-Energy Nitride Memristors," Advanced Functional Materials (2016).

48) Patrick R. Mickel, David Hughart, **Andrew J. Lohn**, Xujiao Gao, Dennis Mamaluy, Matthew J. Marinella, "Power signatures of electric field and thermal switching regimes in memristive SET transitions," Journal of Physics D: Applied Physics, **49**, 245103 (2016).

47) Patrick R. Mickel, **Andrew J. Lohn**, Dennis Mamaluy, Matthew J. Marinella, "Power signatures and vacancy profile control in nanoscale memristive filaments," Applied Physics Letters **107**, 033507 (2015).

46) D.R. Hughart, **A.J. Lohn**, P.R. Mickel, E. Bielejec, G. Vizkelethy, B.L. Doyle, S.L. Wolfley, P.E. Dodd, M.R. Shaneyfelt, M.L. McLain, M.J. Marinella, “Mapping of Radiation-Induced Resistance Changes and Multiple Conduction Channels in TaOx Memristors,” IEEE Transactions on Nuclear Science, **61**, 2965-2971 (2014).

45) Andrew J. Lohn, Patrick R. Mickel, Matthew J. Marinella, "Modeling of filamentary resistive memory by concentric cylinders with variable conductivity," Applied Physics Letters **105**, 183511 (2014).

44) Matthew J. Marinella, Patrick R. Mickel, **Andrew J. Lohn**, David R. Hughart, Robert Bondi, Denis Mamluy, Harold P. Hjalmarson, James E. Stevens, Seth Decker, Roger T. Apodaca, Brian Evans, James Bradley Aimone, Fred Rothganger, Conrad D. James, Erik P. Debenedictis, "Development, Characterization, and Modeling of a TaOx ReRAM for a Neuromorphic Accelerator," ECS Transactions **64**, 37-42 (2014).

43) Patrick R. Mickel, **Andrew J. Lohn**, Matthew J. Marinella, "Detection and characterization of multi-filament evolution during resistive switching," Applied Physics Letters **105**, 053503 (2014).

42) D.R. Hughart, **A.J. Lohn**, P.R. Mickel, P.E. Dodd, M.R. Shaneyfelt, A.I. Silva, E. Bielejec, G. Vizkelethy, B.L. Doyle, M.T. Marshall, M.L. McLain, M.J. Marinella, S.M. Dalton, "Radiation-induced resistance changes in TaOx and TiO2 memristors," IEEE Aerospace Conference 1-11 (2014).

41) Michael T. Brumbach, Patrick R. Mickel, **Andrew J. Lohn**, Alex J. Mirabal, Michael A. Kalan, James E. Stevens, M.J. Marinella, "Evaluating tantalum oxide stoichiometry and oxidation states for optimal memristor performance," Journal of Vacuum Science and Technology A, **32**, 051403 (2014)..

40) Andrew J. Lohn, Patrick R. Mickel, Matthew J. Marinella, "Analytical estimations for thermal crosstalk, retention, and scaling limits in filamentary resistive memory," Journal of Applied Physics **115**, 234507 (2014).

39) Andrew J. Lohn, Patrick R Mickel, Matthew J. Marinella, "Mechanism of electrical shorting failure mode in resistive switching," Journal of Applied Physics **116**, 034506 (2014).

38) Andrew J. Lohn, Patrick R. Mickel, Conrad D. James, Matthew J. Marinella, "Degenerate Resistive Switching and Ultrahigh Density Storage in Resistive Memory," Applied Physics Letters **105**, 103501 (2014).

37) Patrick R Mickel, **Andrew J. Lohn**, Matthew J. Marinella, "Memristive Switching: Physical Mechanisms and Applications," Modern Physics Letters B **28**, 1430003 (2014).

36) Andrew J. Lohn, Patrick R. Mickel, et al, "Isothermal Switching and Detailed Filament Characterization in Resistive Switches", Advanced Materials **26**, 4486-4490 (2014).

35) David Hughart, **Andrew J. Lohn**, Patrick R. Mickel, Scott P. Dalton, Paul E. Dodd, Marty R. Shaneyfelt, Ed Bielejec, George Vizkelethy, M.T. Marshal, Matthew J. Marinella, "A Comparison of the Radiation Response of TaOx and TiO2 Memristors," IEEE Transactions on Nuclear Science **60**, 4512-4519 (2014).

34) Andrew J. Lohn, Barney L. Doyle, Patrick R. Mickel, Matthew J. Marinella, "Rutherford Forward Scattering and Elastic Recoil Detection," Nuclear Instruments and Methods B, **332**, 99-102 (2014).

33) James E. Stevens, **Andrew J. Lohn**, Seth A. Decker, Patrick R. Mickel, Matthew J. Marinella, "Reactive sputtering of substoichiometric Ta2Ox for resistive memory applications," Journal of Vacuum Science and Technology A, **32**, 021501 (2013).

32) Matthew J. Marinella, James E. Stevens, Patrick R. Mickel, David R. Hughart, **Andrew J. Lohn**, "A CMOS Compatible, Forming Free TaOx ReRAM," ECS Transactions **58**, 59-65 (2013).

31) **Andrew J. Lohn**, Patrick R. Mickel, Matthew J. Marinella, "Dynamics of Percolative Breakdown Mechanism in Tantalum Oxide Resistive Switching," Applied Physics Letters **103**, 173503 (2013).

30) **Andrew J. Lohn**, James E. Stevens, Patrick R. Mickel, Matthew J. Marinella, "Optimizing TaOx memristor performance and consistency within the reactive sputtering "forbidden region"," Applied Physics Letters **103** 063502 (2013).

29) Patrick R. Mickel, **Andrew J. Lohn**, Byung Joon Choi, J.Joshua Yang, Min-Xian Zhang, Matthew J. Marinella, Conrad D. James, R. Stanley Williams, "A physical model of switching dynamics in tantalum oxide memristive devices," Applied Physics Letters **102** 223502 (2013).

28) **Andrew J. Lohn**, Robert D. Cormia, David M. Fryauf, Junce Zhang, Kate J. Norris, Nobuhiko P. Kobayashi, "Morphological Effect of Doping Environment on Silicon Nanowires Grown by Plasma-Assisted Chemical Vapor Deposition", Japanese Journal of Applied Physics **51** p.11 (2012).

27) **Andrew J. Lohn**, Noel Dawson, Robert Cormia, David Fryauf, Junce Zhang, Kate J. Norris, Nobuhiko P. Kobayashi, "Study on indium phosphide nanowires grown by metal organic chemical vapor deposition and coated with aluminum oxides deposited by atomic layer deposition", SPIE NanoScience + Engineering, 84670U-6 (2012).

26) Jin-Woo Han, **Andrew J. Lohn**, Meyya Meyyappan, Nobuhiko P. Kobayashi, "Contact metal effects in indium phosphide nanowire transistor", SPIE Nanoscience + Engineering 84670Z-6 (2012).

25) Kate J. Norris, Junce Zhang, David M. Fryauf, Allison Rugar, Amanda Flores, Timothy J. Longson, **Andrew J. Lohn**, Nobuhiko P. Kobayashi, "Indium phosphide nanowire network: growth and characterization for thermoelectric conversion", SPIE NanoScience + Engineering 84670E-8 (2012).

24) Kate J. Norris, **Andrew J. Lohn**, Elane Coleman, Gary S. Tompa, Nobuhiko P. Kobayashi, "Modeling and Characterization of Silicon Nanowire Networks for Thermoelectric Conversion", MRS Proceedings 1456 p.1 (2012).

23) Kate J. Norris, Vernon Wong, Takehiro Onishi, **Andrew J. Lohn**, Elane Coleman, Gary S. Tompa, Nobuhiko P. Kobayashi, "Reflection Absorption Infrared Spectroscopy Analysis of the Evolution of ErSb on InSb", Surface Science (2012).

22) **Andrew J. Lohn**, Kate Norris, Robert D. Cormia, Elane Coleman, Gary S. Tompa, Nobuhiko P. Kobayashi, "Effect of Doping on Nanowire Morphology During Plasma-Assisted Chemical Vapor Deposition", MRS Proceedings 1439 p.1 (2012).

21) **Andrew J. Lohn**, Nobuhiko P. Kobayashi, "AC Surface Photovoltage of Indium Phosphide Nanowire Networks", Applied Physics A, **107** pp 647-651 (2012).

20) Kate J. Norris, **Andrew J. Lohn**, Elane Coleman, Vernon Wong, Ali Shakouri, Gary S. Tompa, Nobuhiko P. Kobayashi, "MOCVD growth of erbium monoantimonide thin film and nanocomposites for thermoelectrics" – Journal of Electronic Materials p.1 (2012).

19) **Andrew J. Lohn**, Elane Coleman, Gary S. Tompa, Nobuhiko P. Kobayashi, "Assessment on thermoelectric power factor in silicon semiconductor nanowire networks", Physica Status Solidi A **209** pp. 171-175 2012.

18) Takehiro Onishi, **Andrew J. Lohn**, Elane Coleman, Gary S. Tompa, Nobuhiko P. Kobayashi, "Reflection Absorption Infrared Spectroscopy Study on the Spontaneous Formation of Erbium Monoantimonide Nanoparticles on Indium Antimonide Surfaces", MRS Proceedings 1351 p.1 (2011).

17) **Andrew J. Lohn**, Timothy J. Longson, Nobuhiko P. Kobayashi, "Indium phosphide nanowires integrated directly on carbon fiber", Proc. SPIE 81060X (2011).

16) Takehiro Onishi, Kate J. Norris, **Andrew J. Lohn**, Vernon Wong, Nitish Padgaonkar, Elane Coleman, Gary S. Tompa, Nobuhiko P. Kobayashi, "Nanocomposites for thermoelectric power generation: rare-earth metal monoantimonide nanostructures embedded in InGaSb and InSbAs ternary alloys", Proc. SPIE 81060Q (2011).

15) Jin-Woo Han, **Andrew J. Lohn**, Nobuhiko P. Kobayashi, Meyya Meyyappan, "Copper oxide thin film and nanowire for e-textile applications", Proc. SPIE 810608 (2011).

14) Toshishige Yamada, Hidenori Yamada, **Andrew J. Lohn**, Nobuhiko P. Kobayashi, "Transport in fused indium phosphide nanowire device in dark and under illumination: Coulomb staircase scenario", Proc. SPIE 81060I (2011).

13) Jin-Woo Han, **Andrew J. Lohn**, Nobuhiko P. Kobayashi, Meyya Meyyappan, "Evolutional Transformation of Copper Oxide Nanowires to Copper Nanowires by a Reduction Technique", Materials Express **1** pp. 176-180 (2011).

12) **Andrew J. Lohn**, Jin-Woo Han, Nobuhiko P. Kobayashi, "Surface Photovoltage Study of Indium Phosphide Nanowire Networks", Accepted for Publication in Proceedings of the Materials Research Society (2011).

11) Toshishige Yamada, Hidenori Yamada, **Andrew J. Lohn**, Nobuhiko P. Kobayashi, "Room-Temperature Coulomb Staircase in Semiconducting InP Nanowires Modulated with Light Illumination", Nanotechnology, **22** 055201 (2010).

10) **Andrew J. Lohn**, Xuema Li, Nobuhiko P. Kobayashi, "Epitaxial growth of ensembles of indium phosphide nanowires on various non-single crystal substrate using an amorphous template layer", Journal of Crystal Growth, **315** pp. 157-159 (2010).

9) **Andrew J. Lohn**, Milo Holt, Noel Dawson, Nobuhiko P. Kobayashi, "Ensemble Effects on the Optical Properties of Indium Phosphide Nanowires at Various Temperatures", Proceedings of the Materials Research Society, 1258 P04-14 (2010).

8) **Andrew J. Lohn**, Takehiro Onishi, Nobuhiko P. Kobayashi, "Optical properties of indium phosphide nanowire ensembles at various temperatures", Nanotechnology, **21** pp. 355702 (2010).

7) **Andrew J. Lohn**, Nobuhiko P. Kobayashi, "Effect of Substrate Crystallinity on Gr owth and Optical Properties of InP Nanowires", Proceedings of the IEEE Nanotechnology, Materials and Devices Conference pp. 169 (2010).

6) Hidenori Yamada, Toshishige Yamada, **Andrew J. Lohn**, Nobuhiko P. Kobayashi, "Reversible Suppression of Coulomb Staircase in InP Nanowires with Light Illumination", Proceedings of the IEEE Nanotechnology Materials and Devices Conference pp. 305 (2010).

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3) **Andrew J. Lohn**, Takehiro Onishi, Nobuhiko P. Kobayashi, "Characterization of nanowires grown on non-single crystal platforms", Proceedings of the SPIE pp. 73180C-1 (2009).

2) Takehiro Onishi, **Andrew J. Lohn**, Nobuhiko P. Kobayashi, "Optical Properties and Carrier Dynamics of Ensembles of InP Nanowires Grown on Non-Single Crystal Platforms", Proceedings of the Materials Research Society 1178-AA01-04 (2009).

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