Christopher M. Rouleau
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Position Title: Research Staff Member
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Education:

Western New England University, Springfield, MA	B.S. 1988	Electrical Engineering
University of Florida, Gainesville, FL Engineering w/minor in Electrical Engineering	M.S. 1991	Materials Science &
University of Florida, Gainesville, FL Engineering	Ph.D. 1994	Materials Science &

Professional Experience:

1998–present	Research Staff Member, Center for Nanophase Materials Sciences, Oak Ridge National Laboratory
1996–1998	Wigner Fellow, Materials Sciences & Technology Division, Oak Ridge National Laboratory
1994–1996	Postdoctoral Research Assistant, Solid State Division, Oak Ridge National Laboratory
1993	Visiting Scientist, 3M Company, St. Paul, MN

Professional Activities, Honors, Awards:
R&D 100 Award, 2008
2nd place, DuBose-Crouse Award for Unique, Unusual, and New Techniques in Microscopy, 2007
Wigner Fellowship, Oak Ridge National Laboratory, 1996–1988
Tau Beta Pi, Engineering Honor Society, Florida Alpha Chapter, April 1991
Summa Cum Laude (WNEU), 1988

Selected Peer-Reviewed Publications: (total > 105 refereed journal papers and conference proceedings, 3 book chapters, > 3800 citations)

H.N. Lee, S.S.A. Seo, W.S. Choi, and C.M. Rouleau, "Growth control of oxygen stoichiometry in homoepitaxial $SrTiO_3$ films by pulsed laser epitaxy in high vacuum," *Scientific Reports* **6**, 19941 (2016).

M.-W. Lin, H.L. Zhuang, J. Yan, T.Z. Ward, A.A. Puretzky, C.M. Rouleau, Z. Gai, L. Liang, V. Meunier, B.G. Sumpter, P. Ganesh, P.R.C. Kent, D.B. Geohegan, D.G. Mandrus, and K. Xiao, "Ultrathin nanosheets of $CrSiTe_3$: a semiconducting two-dimensional ferromagnetic material," *Journal of Materials Chemistry C* **4** (2), 315-322 (2016).

C. Yang, C.B. Jacobs, M.D. Nguyen, M. Ganesana, A.G. Zestos, I.N. Ivanov, A.A. Puretzky, C.M. Rouleau, D.B. Geohegan, and B.J. Venton, "Carbon Nanotubes Grown on Metal Microelectrodes for the Detection of Dopamine," *Analytical Chemistry* **88** (1), 645-652 (2015).

B. Yang, O. Dyck, J. Poplawsky, J. Keum, S. Das, A. Puretzky, T. Aytug, P.C. Joshi, C.M. Rouleau, G. Duscher, D.B. Geohegan, and K. Xiao, Controllable Growth of Perovskite Films by Room-Temperature Air Exposure for Efficient Planar Heterojunction Photovoltaic Cells, *Angewandte Chemie International Edition* **54** (49), 14862-14865 (2015).

M. Tian, M. Mahjouri-Samani, G. Eres, R. Sachan, M. Yoon, M.F. Chisholm, K. Wang, A.A. Puretzky, C.M. Rouleau, D.B. Geohegan, and G. Duscher, "Structure and Formation Mechanism of Black TiO_2 Nanoparticles," *ACS Nano* **9** (10), 10482-10488 (2015).

X. Li, L. Basile, M. Yoon, C. Ma, A.A. Puretzky, J. Lee, J.C. Idrobo, M. Chi, C.M. Rouleau, D.B. Geohegan, and K. Xiao, "Revealing the Preferred Interlayer Orientations and Stackings of Two-

Dimensional Bilayer Gallium Selenide Crystals," *Angewandte Chemie International Edition* **54** (9), 2712-2717 (2015).

C.M. Rouleau, A.A. Puretzky, and D.B. Geohegan, "Slowing of femtosecond laser-generated nanoparticles in a background gas," *Appl. Phys. Lett.* **105**, 213108 (2014).

M. Mahjouri-Samani, R. Gresback, M. Tian, K. Wang, A.A. Puretzky, C.M. Rouleau, G. Eres, I.N. Ivanov, K. Xiao, M.A. McGuire, G. Duscher, and D.B. Geohegan, "Pulsed Laser Deposition of Photoresponsive Two-Dimensional GaSe Nanosheet Networks" Adv. Func. Mat. **24**, 01440 (2014).

X.F. Li, M. W. Lin, A.A. Puretzky, J.C. Idrobo, C. Ma, M.F. Chi, M. Yoon, C.M. Rouleau, I.I. Kravchenko, D.B. Geohegan, and K. Xiao, "Controlled Vapor Phase Growth of Single Crystalline, Two-Dimensional GaSe Crystals with High Photoresponse," *Scientific Reports* **4**, 5497 (2014).

C.M. Rouleau, C.Y. Shih, C. Wu, L.V. Zhigilei, A.A. Puretzky, and D.B. Geohegan, "Nanoparticle generation and transport resulting from femtosecond laser ablation of ultrathin metal films: Time-resolved measurements and molecular dynamics simulations," *Appl. Phys. Lett.* **104**, 193106 (2014).

Collaborators (prior 4 years):

S.S.A. Ambrose, University of Kentucky; W.S. Choi, Sungkyunkwan University; L. Liang, Rensselaer Polytechnic Institute; V. Meunier, Rensselaer Polytechnic Institute; J. Venton, University of Virginia; G. Duscher, University of Tennessee; L. Basile, Escuela Politécnica Nacional; A.F. Barghouty, NASA Marshall Space Flight Center; D.L. Rickman, NASA Marshall Space Flight Center; L.V. Zhigilei, University of Virginia; C. Wu, University of Virginia; W. Chen, Argonne National Laboratory; C. Pint, Vanderbilt University; T. Orlando, Georgia Institute of Technology; K. Chandrakumar, Kyoto University; S. Irle, University of Nagoya; J. Tischler, Argonne National Laboratory; D. Fong, Argonne National Laboratory; C. Brown, National Institute of Standards and Technology; Y. Liu, National Institute of Standards and Technology; H. Hu, Chase Corporation; B.I. Yakobson, Rice University; C. Rylander, Virginia Tech; M. N. Rylander, Virginia Tech

Graduate and Postdoctoral Advisors:
PhD Advisor: R. M. Park, University of Florida (retired)
Postdoctoral Advisor: D. H. Lowndes, Oak Ridge National Laboratory (retired)

Thesis Advisor and Postgraduate-Scholar Sponsor: None

Total Graduate Students Advised: 0
Total Postdoctoral Scholars Advised: 0