

Xiaoting Jia

Virginia Tech

Bradley Department of Electrical & Computer Engineering

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Education & Training

Postdoc Associate	<i>Massachusetts Institute of Technology</i> Research Laboratory of Electronics.	Cambridge, MA	2011-2015
Ph. D.	<i>Massachusetts Institute of Technology</i> Materials Science & Engineering.	Cambridge, MA	2011
M. S.	<i>Stony Brook University</i> Materials Science & Engineering.	Stony Brook, NY	2006
B. S.	<i>Fudan University</i> Materials Science.	Shanghai, China	2004

Appointments

8/2015 - present	Assistant professor, Bradley Department of Electrical & Computer Engineering, Affiliate professor, Dept. of Materials Science & Engineering, Virginia Tech. Affiliate professor, School of Neuroscience, Virginia Tech.
6/2013 - 6/2014	Translational Fellow, Research Laboratory of Electronics, MIT.

Honors & Awards

2018	The ICTAS Junior Faculty Award, Virginia Tech.
2013	The Translational Fellow, Research Laboratory of Electronics (RLE), MIT.
2011	Ovshinsky Student Travel Award, American Physical Society (APS).
2010	Graduate Student Gold Award, Materials Research Society (MRS).
2006	Departmental Fellowship, MIT.
2004	Presidential Fellowship, Stony Brook University.

Journal Publications

<https://scholar.google.com/citations?user=-dsrKUIAAAAJ&hl=en>

1. Y. Guo, S. Jiang, B. Grena, I. F. Kimbrough, E. G. Thompson, Y. Fink, H. Sontheimer, T. Yoshinobu, **X. Jia**, "Polymer Composite with Carbon Nanofibers Aligned during Thermal Drawing as a Microelectrode for Chronic Neural Interfaces", **ACS Nano**, 11 (7), 6574-6585 (2017).
2. L. Yu, H. Xuan, Y. Guo, A. L. Chin, R. Tong, G. Pickrell, A. Wang, and **X. Jia**, "Porous polymer optical fiber fabrication and potential biomedical application", **Optical Materials Express**, 7, 1813-1819 (2017). (Selected as Editor's pick).
3. S. Park, Y. Guo, **X. Jia**, H. K. Choe, B. Grena, J. Kang, J. Park, C. Lu, A. Canales, R. Chen, Y. S. Yim, G. B. Choi, Y. Fink, and P. Anikeeva, "One-Step Optogenetics with Multifunctional Flexible Polymer Fibers", **Nature Neuroscience**, 20, 612-619 (2017).

4. M. Chen, J. Xia, J. Zhou, Q. Zeng, K. Li, K. Fujisawa, W. Fu, T. Zhang, J. Zhang, Z. Wang, Z. Wang, **X. Jia**, M. Terrones, Z. X. Shen, Z. Liu, and L. Wei, “Ordered and Atomically Perfect Fragmentation of Layered Transition Metal Dichalcogenides via Mechanical Instabilities”, **ACS Nano**, 11 (9), 9191-9199 (2017).
5. F. Sorin, J. Ballato, L. Wei, **X. Jia**, and D. Milanese, “Feature issue introduction: Multimaterial and Multifunctional Optical Fibers”, **Optical Materials Express**, 7 (6), 1906-1908 (2017).
6. R. A. Koppes, S. Park, T. Hood, **X. Jia**, N. A. Poorheravi, A. H. Achyuta, Y. Fink, P. Anikeeva, “Thermally drawn fibers as nerve guidance scaffolds”, **Biomaterials**, 81, 27-35 (2016).
7. A. Canales*, **X. Jia***, U. P. Froriep*, R. A. Koppes*, C. Tringides, J. Selvidge, C. Lu, C. Hou, L. Wei, Y. Fink, and P. Anikeeva, “Multifunctional fibers for simultaneous optical, electrical and chemical communication with neural circuits in vivo”, (***Equal contribution first authors**), **Nature Biotechnology**, 33, 277-284 (2015). (Highlighted as the cover article).
8. S. Park, R. A. Koppes, U. P. Froriep, **X. Jia**, A. H. Achyuta, B. L. McLaughlin, P. Anikeeva, “Optogenetic control of nerve growth”, **Scientific Reports**, 5, 9669 (2015).
9. C. Hou, **X. Jia**, L. Wei, S. Tan, X. Zhao, J. D. Joannopoulos, and Y. Fink, “Crystalline Silicon Core Fibres from Aluminum Core Preforms”, **Nature Communications**, 6, 6248 (2015).
10. H. Y. Jung, P. T. Araujo, Y. Kim, S. Jung, **X. Jia**, S. Hong, C. W. Ahn, S. Kar, J. Kong, M. Dresselhaus, S. Kar, and Y. J. Jung, “Sculpting carbon bonds: allotropic transformation through solid-state re-engineering of -sp² carbon”, **Nature Communications**, 5, 4941 (2014).
11. A. Gumennik*, L. Wei*, G. Lestoquoy*, A. M. Stolyarov, **X. Jia**, P. H. Rekemeyer, M. J. Smith, X. Liang, B. Grena, S. G. Johnson, S. Gradecak, A. F. Abouraddy, J. D. Joannopoulos, Y. Fink, “Silicon-in-silica spheres via axial thermal gradient in-fibre capillary instabilities”, **Nature Communications**, 4, 2216 (2013).
12. C. Hou, **X. Jia**, L. Wei, A. M. Stolyarov, O. Shapira, J. D. Joannopoulos, Y. Fink, “Direct atomic-level observation and chemical analysis of ZnSe synthesized by in situ high-throughput reactive fiber drawing”, **Nano Letters**, 13, 975-979 (2013).
13. E. Cruz-Silva, **X. Jia**, H. Terrones, B. Sumpter, M. Terrones, M. Dresselhaus, V. Meunier, “Edge-edge interactions in stacked graphene nanoplatelets”, **ACS Nano**, 7, 2834-2841 (2013).
14. J. Ortiz-Medina, M. L. Garcia-Betancourt, **X. Jia**, R. Martinez-Gordillo, M. A. Pelagio-Flores, D. Swanson, A. L. Elias, H. R. Gutierrez, E. Gracia-Espino, V. Meunier, J. Owens, B. G. Sumpter, E. Cruz-Silva, F. J. Rodriguez-Macias, F. Lopez-Urias, E. Munoz-Sandoval, M. S. Dresselhaus, H. Terrones, M. Terrones, “Nitrogen-doped graphitic nanoribbons: synthesis, characterization and transport”, **Adv. Funct. Mater.**, 23, 3755-3762 (2013).
15. K. K. Kim, A. Hsu, **X. Jia**, S. M. Kim, Y. Shi, M. Dresselhaus, T. Palacios, and J. Kong, “Synthesis and characterization of hexagonal boron nitride film as a dielectric layer for graphene devices”, **ACS Nano**, 6, 8583-8590 (2012).
16. M. H. Pan, E. C. Girão, **X. Jia**, S. Bhaviripudi, Q. Li, J. Kong, V. Meunier, and M. S. Dresselhaus, “Topographic and spectroscopic characterization of electronic edge states in CVD grown graphene nanoribbons”, **Nano Letters**, 12, 1928-1933 (2012).

17. K. K. Kim, A. Hsu, **X. Jia**, S. M. Kim, Y. Shi, M. Hofmann, D. Nezich, J. F. Rodriguez-Nieva, M. Dresselhaus, T. Palacios, and J. Kong, “Synthesis of monolayer hexagonal boron nitride on Cu foil using chemical vapor deposition”, **Nano Letters**, 12, 161-166 (2012).
18. **X. Jia**, J. Campos-Delgado, M. Terrones, V. Meunier, and M. S. Dresselhaus, “Graphene edges - a review of their fabrication and characterization”, **Nanoscale**, 3, 86-95 (2011) (Invited review article.)
19. S. Bhaviripudi, **X. Jia**, M. Dresselhaus, and J. Kong, “Role of kinetic factors in CVD synthesis of uniform large area graphene using copper catalyst”, **Nano Letters**, 10, 10, 4128-4133 (2010).
20. Y. Shi, C. Hamsen, **X. Jia**, K. Kim, A. Reina, M. Hofmann, A. L. Hsu, K. Zhang, H. Li, M. S. Dresselhaus, L. J. Li, and J. Kong, “Synthesis of few-layer hexagonal boron nitride thin film by chemical vapor deposition”, **Nano Letters**, 10, 10, 4134-4139 (2010).
21. P. L. Gai, K. Yoshida, C. Shute, **X. Jia**, M. Walsh, M. Ward, M. S. Dresselhaus, J. R. Weertman, and E. D. Boyes, “Probing structures of nanomaterials using advanced electron microscopy methods including aberration-corrected electron microscopy at the Angstrom scale”, **Microscopy Research and Technique (Wiley-Blackwell)**, 74, 664-670 (2011).
22. E. Cruz-Silva, A. R. Botello-Méndez, Z. Barnett, **X. Jia**, M.S. Dresselhaus, H Terrones, M. Terrones, B. G. Sumpter, and V. Meunier, “Controlling the edge morphology in graphene layers using electron irradiation: From sharp atomic edges to coalesced layers forming loops”, **Physical Review Letters**, 105, 045501 (2010).
23. **X. Jia**, M. Hofmann, V. Meunier, B. G. Sumpter, J. Campos-Delgado, J. M. Romo-Herrera, H. Son, Y. Hsieh, A. Reina, J. Kong, M. Terrones, and M. S. Dresselhaus, “Controlled formation of sharp zigzag and armchair edges in graphitic nanoribbons”, **Science**, 323, 1701 - 1705 (2009).
24. **X. Jia**, J. Campos-Delgado, E. E. Gracia-Espino, M. Hofmann, H. Muramatsu, Y. A. Kim, T. Hayashi, M. Endo, J. Kong, M. Terrones, and M. S. Dresselhaus, “Loop formation in graphitic nanoribbon edges using furnace heating or Joule heating”, **JVST B** 27, 4, 1996-2002 (2009).
25. A. Reina, **X. Jia**, J. Ho, D. Nezich, H. Son, V. Bulovic, M. S. Dresselhaus, J. Kong, “Large area, few-layer graphene films on arbitrary substrates by chemical vapor deposition”, **Nano Letters**, 9, 1, 30-35 (2009).
26. A. Reina, S. Thiele, **X. Jia**, S. Bhaviripudi, M. Dresselhaus, J. Schaefer, and J. Kong, “Growth of large-area single- and Bi-layer graphene by controlled carbon precipitation on polycrystalline Ni surfaces”, **Nano Research**, 2, 6, 509-516 (2009).
27. Y. Hsieh, M. Hofmann, H. Son, **X. Jia**, Y. Chen, C. Liang, M. S. Dresselhaus, and J. Kong, “Direct deposition of single-walled carbon nanotube thin films via electrostatic spray assisted chemical vapor deposition”, **Nanotechnology**, 20, 065601 (2009).
28. Y. Hsieh, H. Chen, M. Lin, S. Shiu, M. Hofmann, M. Chern, **X. Jia**, Y. Yang, H. Chang, H. Huang, S. Tseng, L. Chen, K. Chen, C. Lin, C. Liang, Y. Chen, “Electroluminescence from ZnO/Si-nanotips light-emitting diodes”, **Nano Letters**, 9, 1839 (2009).
29. J. Campos-Delgado, J. M. Romo-Herrera, **X. Jia**, D. A. Cullen, H. Muramatsu, Y. A. Kim, T. Hayashi, Z. Ren, D. J. Smith, Y. Okuno, T. Ohba, H. Kanoh, K. Kaneko, M. Endo, H. Terrones,

M. S. Dresselhaus, and M. Terrones, “Bulk production of a new form of sp² carbon: crystalline graphene nanoribbons”, **Nano Letters**, 8, 9, 2773-2778 (2008).

Conference Papers

1. **X. Jia**, V. Berube, S. Chen, B. Poudel, H. Son, J. Kong, Y. Shao-Horn, Z. Ren, G. Chen, M. S. Dresselhaus, “In-situ TEM study of bismuth nanostructures”, *Mater. Res. Soc. Symp. Proc.* Vol. 1044 (2008).
2. H. Chen, G. Wang, Y. Chen, **X. Jia**, J. Bai, M. Dudley, “The formation mechanism of carrot defects in SiC epifilms”, *Mater. Res. Soc. Symp. Proc.* Vol. 911, 0911-B05-24 (2006).

Patents

1. Patent: “Methods and Apparatus for Stimulating and Recording Neural Activity”, P. Anikeeva, X. Jia, C. Lu, A. Canales, U. Froriep, C. Tringides, Y. Fink. (U.S.) No. 9861810 (Issued on Jan 9, 2018).
2. Patent: “CVD-Growth Graphite Nanoribbons”, J. Campos-Delgado, M. S. Dresselhaus, M. Endo, E. E. Gracia-Espino, X. Jia, J. M. Romo-Herrera, H. Terrones, M. Terrones. (U.S.) No. 12/042,544 (Filed on Mar 5, 2008).
3. Patent: “A New Method and Apparatus for Preparing TiO₂”, X. L. Cui, S. T. Wo, X. T. Jia, Z. J. Zhang. (China) No. ZL03141494.X (2005).

Professional Activities

- **Guest Editor**, *Optical Materials Express*, 2016-2017
- Member of Optical Society of America (OSA), 2016 – present
- Member of IEEE, 2016 – present
- Member of Materials Research Society (MRS), 2004 – present
- Reviewing Journal Articles and Funding Proposals: *Nature Communications*, *Nature Flexible Electronics*, *Nano Letters*, *ACS Nano*, *Scientific Reports*, *Carbon*, *ACS Applied Materials & Interfaces*, *Nanoscale*, *Microelectronic Engineering*, *ACS Petroleum Research Fund*.