Curriculum Vitae
Bo Cui

Associate Professor, Department of Electrical and Computer Engineering and
Waterloo Institute for Nanotechnology (WIN), University of Waterloo
Email: bcui@uwaterloo.ca; Phone: 1-519-888-4567 ext 38754
Homepage: http://ece.uwaterloo.ca/~bcui/
Date of Birth: February 6, 1971. Nationality: Canada

Education:

- **Ph.D, Princeton University, November, 2003**
  Adviser: Professor Stephen Y. Chou
  Nanostructure Laboratory, Department of Electrical Engineering
  Dissertation: quantized magnetic disks and laser-assisted ultrafast nanofabrication.
- **Master of Arts, Princeton University (2/1998 -7/2000)**
  Adviser: Professor Stephen Y. Chou
  Thesis: fabrication of large area patterned magnetic media by nanoimprint lithography and electroplating.
- **Graduate Study, University of Minnesota (11/1996 – 2/1998)**
  Nanostructure Laboratory, Department of Electrical Engineering
- **Graduate Study, Peking University, China (8/1994 – 10/1996)**
  Adviser: Professor Yingchang Yang
  Department of Physics, minor area Condensed Matter Physics
- **Bachelor of Arts, Peking University (9/1989 –6/1994)**
  Department of Physics
  Thesis: thin film characterization by optical methods.

Expertise:

Nano/micro-structure and device fabrication and characterization, with 16 years cleanroom research experience.

Nanoimprint lithography (NIL), electron-beam lithography, photolithography; reactive ion etching, focused ion beam etching/patterning, ion beam etching, chemical mechanical polishing; sputtering, vacuum evaporation, electro- and electroless plating, PECVD & LPCVD; SEM, AFM, MFM, VSM, X-ray scattering, semiconductor and magnetic device characterization, Raman spectroscopy.

Languages: English (fluent), French (fluent), Chinese (native), Spanish (basic)

Professional Experience:

- 7/2015 – present, associate professor, Department of Electrical and Computer Engineering and Waterloo Institute of Nanotechnology, University of Waterloo.
- 11/2008 – 6/2015, assistant professor, Department of Electrical and Computer Engineering and Waterloo Institute of Nanotechnology, University of Waterloo.
- 9/2003 –10/2008, staff scientist, Industrial Materials Institute, National Research Council of Canada, Boucherville, Québec.

- 2/1998 – 8/2003: Research Assistant, Nanostructure Laboratory, Department of Electrical Engineering, Princeton University.
- 11/1996-2/1998: Research Assistant, Department of Electrical Engineering, University of Minnesota.

Teaching: (NE – Nanotechnology Engineering undergraduate program)

- NE 343: Microfabrication and thin film technology
- NE 353: Nano-probing and lithography
- ECE 635: Fabrication in the nanoscale: principles, technology and applications
- ECE 433: Semiconductor device technology
- ECE 631: Microelectronic processing technology

Publication: (Cui's student/postdoc in **boldface**)

Journal articles:

(PDF can be downloaded from https://ece.uwaterloo.ca/~bcui/Publications.html)

1. Y. He, X. Li, H. Liu, **H. Meng**, G. Wang, J. Wang, Y. Li, and B. Cui, "A new n-type polymer based on N, N'-dialkoxynaphthalenediimide (NDIO) for organic thin-film transistors and all-polymer solar cells", Journal of Materials Chemistry C, in press.
2. M. Rezeq, A. Ali, K. Eledlebi, **R. K. Dey** and B. Cui, "Well defined nano-probe shapes for rigorous investigations in nano-electronics", submitted to Microelectron. Eng.
3. **Yang R**, Lee CH, Cui B, and Sazonov A, "Flexible semi-transparent a-Si:H pin solar cells for functional energy-harvesting applications", Solar Energy Materials and Solar Cells, under review.
4. **Con C**, Cui B, "Surface nanostructures formed by phase separation of metal salt–polymer nanocomposite film for anti-reflection and super-hydrophobic applications", Nanoscale Research Letters, 12, 628 (2017).
5. **Zhang X, Liu Y, Soltani M**, Li P, Zhao B, and Cui, Bo, "Probing the interfacial charge transfer process of uniform ALD semiconductor-molecule-metal models: an SERS Study", Journal of Physical Chemistry C, 121 (48), 26939–26948 (2017).
6. **Zheng S, Zhu C, Dey RK**, Cui B, "Batch fabrication of AFM probes with direct positioning capability", J. Vac. Sci. Technol. B, 35, 06GC02 (2017).
7. **Yamada H, Aydinoglu F, Liu Y, Dey RK**, Cui B, "Single layer surface-grafted PMMA as a negative-tone e-beam resist", Langmuir, 33, 13790−13796 (2017).
8. **Dey RK, Shen J**, Cui B, "Oxidation sharpening of silicon tips in atmospheric environment", J. Vac. Sci. Technol. B, 35, 06GC01 (2017).
9. **Aydinoglu F, Saffih F, Dey RK,** Cui B, "Chromium oxide as a hard mask material better than metallic chromium", J. Vac. Sci. Technol. B, 35, 06GB01 (2017).
10. **Zhang X**, Lin G, Peng L, Zhao B, Cui B, "SERS as a Probe of Charge-Transfer Process in Coupled Semiconductor Nanoparticle System TiO2/MBA/PbS", RSC Advances, 7, 42138–42145 (2017).
11. **Aydinoglu F, Yamada H, Dey RK**, and Cui B, "Grafted polystyrene monolayer brush as both negative and positive tone electron beam resist", Langmuir, 33, 4981–4985 (2017).

12. **Dey RK, Aydinoglu F**, and Cui B, "Electron beam lithography on irregular surface using grafted PMMA monolayer as resist", Advanced Materials Interfaces, 4, 1600780 (2017).
13. **Zheng S, Dey RK, Aydinoglu F**, and Cui B, "Mixture of ZEP and PMMA with varying ratios for tunable sensitivity as a liftoff resist with controllable undercut", J. Vac. Sci. Technol. B, 34, 06K603 (2016).
14. **Ayari-Kanoun A, Aydinoglu F**, Saffih F, and Cui B, "Silicon nanostructures with very large negatively tapered profile by ICP-RIE", J. Vac. Sci. Technol. B, 34, 06KD01 (2016).
15. **Sun X**, Feng K, Chen Z, and Cui B, "Electrochemical Studies of Carbon Nanotube-LiFePO4 Nanocomposite Cathode for High-Capacity Lithium-Ion Batteries", ECS Transactions, 73 (1) 129-135 (2016).
16. Rezeq M, Eledlebi K, Ismail M, **Dey RK**, and Cui B, "Theoretical and experimental investigations of nano-Schottky contacts", J. Appl. Phys., 120, 044302 (2016).
17. **Irannejad M**, Cui B, and Yavuz M, "Optical properties and liquid sensitivity of Au-SiO_2-Au nanobelt structure", Plasmonics, 11, 1-9 (2016).
18. **Sun X**, Sun K, and Cui Bo, "STEM-HAADF Imaging Study of Spinel Cubic Li4Ti5O12 Nanocrystals", Microscopy and Microanalysis, 21, 327-328 (2015).
19. **Zhang J**, Cao K, Wang X, and Cui B, "Metal-carbonyl organometallic polymers, PFpP, as resists for high-resolution positive and negative electron beam lithography", Chemical Communications, 51, 17592-17595 (2015).
20. **Con C**, **Aydinoglu A**, and Cui B, "High resolution nanofabrication using self-assembly of metal salt-polymer nanocomposite film", J. Vac. Sci. Technol. B, 33, 06F304 (2015).
21. **Viscomi FN**, **Dey RK**, Caputo R, and Cui B, "Enhanced adhesion of electron beam resist by grafted monolayer poly(methylmethacrylate-co-methacrylic acid) brush", J. Vac. Sci. Technol. B, 33, 06FD06 (2015).
22. Jiang K, He C, Liu XP, Lu MH, Cui B, and Chen YF, "Circular-polarization-dependent mode hybridization and slow light in vertically coupled planar chiral and achiral plasmonic nanostructures", Journal of the Optical Society of America B, 32, 2088 (2015).
23. **Irannejad M**, Cui B and Yavuz M, "The effects of varying dielectric spacer height on the reflection resonance spectrum of gold nanorod-on-mirror grating structure", Plasmonics, 10, 901-909 (2015).
24. **Irannejad M**, **Alyalak W**, Burzhuev S, Brzezinski A, Yavuz M, and Cui B, "Engineering of bi-/mono-layer graphene film using reactive ion etching", Transactions on Electrical and Electronic Materials, 16, 169-172 (2015).
25. **Zhang J, Irannejad M** and Cui B, "Bowtie nanoantenna with single-digit nanometer gap for surface-enhanced Raman scattering (SERS)", Plasmonics, 10, 831-837 (2015).
26. Dai M, Wan W, Zhu X, Song B, Liu X, Lu M, Cui B, and Chen Y, "Broadband and wide angle infrared wire-grid polarizer", Optics Express, 23, 15390-97 (2015).
27. **Zhang J, Irannejad M**, Yavuz M and Cui B, "Gold nanohole array with sub-1 nm roughness by annealing for sensitivity enhancement of extraordinary optical transmission biosensor", Nanoscale Research Letters, 10, 238 (2015).
28. **Sun X**, Radovanovic PV, and Cui B, "Advances in spinel Li4Ti5O12 anode materials for lithium-ion batteries", New Journal of Chemistry, 39, 38-63 (2015). (review article)

29. **Sun X**, Zhang Y, Gu L, Hu L, Feng K, Chen Z and Cui B, "Nanocomposite of TiO_2 nanoparticles-reduced graphene oxide with high-rate performance for Li-ion battery", ECS Transactions, 64, 11-17 (2015).
30. Yavuz M, **Irannejad M**, Alici K, Rahman EA, Brzezinski A, and Cui B, "Graphene based nano electromechanical interconnects to enable ultrafast electronics", Austin Journal of Nanomedicine & Nanotechnology, 2, 1033 (2014).
31. **Abbas AS**, **Alqarni S**, **Shokouhi BB**, Yavuz M, and Cui B, "Water soluble and metal-containing electron beam resist poly(sodium 4-styrenesulfonate)", Mater. Res. Express, 1, 045102 (2014).
32. **Saffih F**, **Con C**, **Alshammari A**, Yavuz M, and Cui B, "Fabrication of silicon nanostructures with large taper angle by reactive ion etching", *J. Vac. Sci. Technol. B*, 32, 06FI04 (2014).
33. **Dey RK** and Cui B, "Lift-off with solvent for negative resist using low energy electron beam exposure", *J. Vac. Sci. Technol. B*, 32, 06F507 (2014).
34. Wan W, Lin L, Xu Y, Guo X, Liu X, Ge H, Lu M, Cui B, and Chen Y, "Planar self-aligned imprint lithography for coplanar plasmonic nanostructures fabrication", Applied Physics A, 116, 657–662 (2014).
35. **Zhang J, Con C** and Cui B, "Electron beam lithography on irregular surfaces with evaporated resist", ACS Nano, 8, 3483–3489 (2014).
36. **Irannejad M, Zhang J**, Yavuz M and Cui B, "Numerical study of optical behavior of nano-hole array with non-vertical sidewall profile", Plasmonics, 9, 537–544 (2014).
37. Bai X, Wen D, **Con C**, **Zhang J**, Yavuz M and Cui B, "Research on Fabrication and Electronic Characteristics of Dual-Extended Nano Structure Memristor", Key Engineering Materials, 609-610, 728-733 (2014).
38. **Dey RK** and Cui B, "Electron beam lithography with in-situ feedback using self-developing resist", Nanoscale Research Letters, 9, 184 (2014).
39. **Con C, Zhang J** and Cui B, "Nanofabrication of high aspect ratio structures using evaporated resist containing metal", Nanotechnology, 25, 175301 (2014).
40. **Alhazmi M**, Aydinoglu F, Cui B, Ramahi OM, **Irannejad M**, Brzezinski A, and Yavuz M, "Comparison of the Effects of Varying of Metal Electrode in Metal-insulator-metal Diodes with Multi-Dielectric Layers", Austin Journal of Nanomedicine & Nanotechnology, 2(2), 4 (2014).
41. Aydinoglu F, **Alhazmi M**, Cui B, Ramahi OM, **Irannejad M**, Brzezinski A, and Yavuz M, "Higher Performance Metal-Insulator-Metal Diodes using Multiple Insulator Layers", Austin Journal of Nanomedicine & Nanotechnology, 1(1), 3 (2014).
42. **Sun X**, Hegde M, Wang J, Zhang Y, Liao JY, Radovanovic PV, and Cui B, "Structural analysis and electrochemical studies of carbon coated $Li_4Ti_5O_{12}$ Particles used as anode for lithium ion battery", ECS Transactions, 58, 79-88 (2014).
43. **Sun X**, Wang YQ, Hegde M, Shu J, Bai XD, Zhang YF, Radovanovic PV, and Cui B "Structure and electrochemical properties of spinel $Li_4Ti_5O_{12}$ nanocomposites as anode for lithium-ion battery", International Journal Electrochemical Science, 9, 1583-1596 (2014).
44. **Abbas AS**, Yavuz M and Cui B, "Polycarbonate electron beam resist using solvent developer", *Microelectron. Eng.*, 113, 140-142 (2014).

45. **Dey RK** and Cui B, "Stitching error reduction in electron beam lithography with in-situ feedback using self-developing resist", *J. Vac. Sci. Technol. B*, 31 (6), 06F409 (2013).
46. **Irannejad M**, Yavuz M and Cui B, "Finite difference time domain study of light transmission through multihole nanostructures in metallic film", *Photonics Research*, 1(4), 154-159 (2013).
47. **Sun X**, Sun K, Wang Y, Bai X and Cui B, "Scale-up synthesis, structure characterization and electrochemical characteristics of C-LiFePO4 nanocomposites for lithium ion rechargeable batteries", *Int. J. Electrochem. Sci.*, 8, 12816-12836 (2013).
48. **Con C, Abbas AS**, Yavuz M and Cui B, "Dry thermal development of negative electron beam resist polystyrene", *Advances in Nano Research*, 1, 105-109 (2013).
49. **Con C** and Cui B, "Effect of mold treatment by solvent on PDMS molding into nanoholes", *Nanoscale Research Letters*, 8, 394 (2013).
50. **Chen JY, Con C**, Yu MH, Cui B and Sun KW, "Efficiency enhancement of PEDOT:PSS/Si hybrid solar cells by using nanostructured radial junction and antireflective surface", *ACS Appl. Mater. Interfaces*, 5 (15), 7552–7558 (2013).
51. Liu R, Zhang F, **Con C**, Cui B and Sun B, "Lithography-free fabrication of silicon nanowire and nanohole arrays by metal-assisted chemical etching", *Nanoscale Research Letters*, 8, 155 (2013).
52. **Dey RK** and Cui B, "Effect of molecular weight distribution on e-beam exposure properties of polystyrene", *Nanotechnol*., 24, 245302 (2013).
53. **Irannejad M** and Cui B, "Effects of refractive index variations on the optical transmittance spectral properties of the nano-hole arrays", Plasmonics, 8, 1245-1251 (2013).
54. **Sun X**, Sun K, Chen C, Sun H and Cui B, "Controlled Preparation and Surface Structure Characterization of Carbon-Coated Lithium Iron Phosphate and Electrochemical Studies as Cathode Materials for Lithium Ion Battery", *International Journal of Materials and Chemistry*, 2(5), 218-224 (2012).
55. **Zhang J, Shokouhi B** and Cui B, "Tilted nanostructure fabrication by electron beam lithography", *J. Vac. Sci. Technol. B*, 30(6), 06F302 (2012).
56. **Liu W, Ferguson M**, Yavuz M and Cui B, "Porous TEM windows fabrication using CsCl self-assembly", *J. Vac. Sci. Technol. B*, 30(6), 06F201 (2012).
57. Xuan Y, Guo X, Cui Y, Yuan C, Ge H, Cui B and Chen Y, "Crack-free controlled wrinkling of a bilayer film with a gradient interface", *Soft Matter*, 8, 9603-9609 (2012).
58. **Con C, Dey R, Ferguson M, Zhang J**, Mansour R, Yavuz M and Cui B, "High molecular weight polystyrene as very sensitive electron beam resist", *Microelectronic Engineerin*g, 98, 254-257(2012).
59. **Con C, Zhang J**, Jahed Z, Tsui TY, Yavuz M and Cui B, "Thermal nanoimprint lithography using fluoropolymer mold", *Microelectronic Engineering*, 98, 246-249 (2012).
60. **Shokouhi B, Zhang J** and Cui B, "Very high sensitivity ZEP resist using MEK:MIBK developer", *Micro & Nano Lett.* 6(12), 992–994 (2011).
61. **Ma S, Con C**, Yavuz M and Cui B, "Polystyrene Negative Resist for High Resolution Electron Beam Lithography", *Nanoscale Research Letters*, 6, 446 (2011).
62. **Zhang J, Fouad M**, Yavuz M and Cui B, "Charging effect reduction in electron beam lithography with nA beam current", *Microelectronic Engineering*, 88(8), 2196-2199 (2011).

63. **Zhang J**, Cui B and Ge H, "Fabrication of flexible mold for hybrid nanoimprint-soft lithography", *Microelectronic Engineering*, 88(8), 2192-2195 (2011).
64. **Fouad M**, Yavuz M and Cui B, "Nanofluidic channels fabricated by e-beam lithography and polymer reflow sealing", *J. Vac. Sci. Technol. B* 28, C6I11 (2010).
65. Cui B, Clime L and Veres T, "Fabrication of nanostar array by nanoimprint lithography", *J. Vac. Sci. Technol. B* 28, C6O26 (2010).
66. **Rahman SMS** and Cui B, "Mold Fabrication for 3D Dual Damascene Imprinting", *Nanoscale Research Letters*, 5, 545–549 (2010).
67. Cui B, Keimel C and Chou SY, "Ultrafast Direct Imprint of Nanostructures in Metals by Pulsed Laser Melting", *Nanotechnol.* 21, 045303 (2010).
68. Malic L, Cui B, Veres T and Tabrizian M, "Nanoimprinted plastic substrates for enhanced surface plasmon resonance imaging detection", Optics Express, 17(22), 20386-92 (2009).
69. Geissler M, Li K, Cui B, Clime L and Veres T, "Plastic substrates for surface-enhanced Raman scattering", *J. Phys. Chem. C*, 113(40), 17296–17300 (2009).
70. Li Z, Gu Y, Wang L, Ge H, Wu W, Xia Q, Yuan C, Chen Y, Cui B and Williams RS "Hybrid Nanoimprint−Soft Lithography with Sub-15 nm Resolution", *Nano Lett*., 9 (6), 2306–2310 (2009).
71. Heidi Au HT, Cui B, Chu ZE, Veres T and Radisic M, "Cell culture chips for simultaneous application of topographical and electrical cues enhance phenotype of cardiomyocytes", *Lab Chip*, 9, 564–575 (2009).
72. Guillemette MD, Cui B, Roy E, Gauvin R, Giasson CJ, Esch MB, Carrier P, Deschambeault A, Dumoulin M, Toner M, Germain L, Veres T and Auger FA, "Surface topography induces 3D self-orientation of cells and extracellular matrix resulting in improved tissue function", *Integrated Biology*, 1, 196–204 (2009).
73. Hajiaboli A, Cui B, Kahrizi M and Truong VV, "Optical properties of thick metal nanohole arrays fabricated by electron beam and nanosphere lithography", *Physica Status Solidi A-Applications and Materials Science*, 206(5), 976-979 (2009).
74. Cui B, Wu L and Chou SY, "Fabrication of high aspect ratio metal nano-tips by nanosecond pulse laser melting", *Nanotechnol.* 19, 345303 (2008).
75. Li K, Clime L, Tay L, Cui B, Geissler M and Veres T, "Multiple Surface Plasmon Resonances and Near-Infrared Field Enhancement of Gold Nanowells", *Analytical Chemistry*, 80(13), 4945-4950 (2008).
76. Cui B and Veres T, "High resolution electron beam lithography of PMGI using solvent developer", *Microelectron. Eng*. 85, 810-813 (2008).
77. Cui B, Clime L, Li K and Veres T, "Fabrication of large area nanoprism array and its application for surface enhanced Raman spectroscopy (SERS)", *Nanotechnol*. 19, 145302 (2008).
78. Li K, Clime L, Cui B and Veres T, "Surface Enhanced Raman Scattering on Long-range Ordered Noble-metal Nanocrescent Arrays", *Nanotechnol*. 14, 145305 (2008).
79. Malic L, Cui B, Veres T and Tabrizian M, "Enhanced surface plasmon resonance imaging detection of DNA hybridization on periodic gold nanoposts", *Opt. Lett.* 32, 3092-3094 (2007).

80. Alvarez-Puebla R, Bravo-Vasquez JP, Cui B, Veres T and Fenniri H, " SERS Classification of Highly Related Performance Enhancers", ChemMedChem, 2(8), 1165-1167 (2007).
81. Cui B and Veres T, "Fabrication of metal nanoring array by nanoimprint lithography (NIL) and reactive ion etching", *Microelectron. Eng*., 84, 1544–47 (2007).
82. Alvarez-Puebla R, Cui B, Bravo-Vasquez JP, Veres T and Fenniri H, "Nanoimprinted SERS-active substrates with tunable surface plasmon resonances", *J. Phys. Chem. C*, 111, 6720-23 (2007).
83. Cui B, Yu ZN, Ge, HX and Chou SY, "Large area 50 nm period grating by multiple nanoimprint lithography and spatial frequency doubling", *Appl. Phys. Lett.*, 90, 043118 (2007).
84. Le Drogoff B, Cui B and Veres T, "Fast 3D Nanostructure Fabrication by Laser-Assisted nano-Transfer Printing", *Appl. Phys. Lett.*, 89, 113103 (2006).
85. Cui B and Veres T, "Pattern replication of 100 nm to millimeter-scale features by thermal nanoimprint lithography*", Microelectron. Eng*., 83, 902-905 (2006).
86. Cui B and Veres T, "Polyimide nanostructures fabricated by nanoimprint lithography and its application as flexible imprint mould", *Microelectron. Eng*., 83, 906-909 (2006).
87. Cui B, Wu W, Keimel C and Chou SY, "Filling of Via Holes by Laser-Assisted Direct Imprint (LADI)", Microelectron. Eng., 83 (4-9), 1547-1550 (2006).
88. Beauvais J, Lavallee E, Zanzal A, Drouin D, Lau KM, Veres T and Cui B, "Fabrication of a 3D nano-imprint template with a conformal dry vapor deposited electron beam resist", *Proceedings of SPIE*, 5751, 392-399 (2005).
89. Feng J, Cui B, Zhan Y, and Chou SY, "Flexible metal film with micro- and nanopatterns transferred by electrochemical deposition", *Electrochem. Commun.*, 4, 102-104 (2002).
90. Kong L, Pan Q, Cui B, Li M, and Chou SY, "Magneto-transport and domain structures in nano-scale NiFe/Cu/Co spin valve", *J. Appl. Phys.* 85 (8): 5492-5494 (1999).
91. Cui B, Wu W, Kong LS, Sun XY, Chou SY, "Perpendicular quantized Magnetic disks with 45 Gbits on a 4x4 cm^2 area", *J. Appl. Phys.* 85 (8): 5534-5536 (1999).
92. Chou SY, Kong LS, Wu W, Cui B, "Fabrication, reading and writing of quantized magnetic disks with 65 Gbit/in^2 perpendicular storage density and 30 Gbit/in^2 longitudinal storage density", Electrochemical Society Series, 98(20), 253-254 (1999).
93. Kong L, Zhuang L, Li M, Cui B, Chou SY, "Fabrication, writing, and reading of 10 Gbits/in(2) longitudinal quantized magnetic disks with a switching field over 1000 Oe", *Jpn. J. Appl. Phys.* Part 1, 37 (11): 5973-5975 (1998).
94. Wu W, Cui B, Sun XY, Zhang W, Zhuang L, Kong LS, Chou SY, "Large area high density quantized magnetic disks fabricated using nanoimprint lithography", *J. Vac. Sci. Technol.* B 16 (6): 3825-3829 (1998).
95. Mao W, Yang J, Cui B, Cheng B, Yang Y, Du H, Zhang B, Ye C, and Yang J, "A study on the effect of hydrogen in the compounds with $ThMn_{12}$-type structure", *J. Phys. - Condensed Matter*, 10 (12): 2611-2616 (1998).
96. Yang J, Cui B, Mao W, Yang Y, Chen D, Yang Y, and Gou C, "A linear muffin-tin orbital calculation of local electronic and magnetic properties of $YFe_{10}Mo_2$ and $YFe_{10}Mo_2N$", *J. Phys. Soc. Jpn.*, 67 (2): 576-582 (1998).

97. Yang J, Cui B, Mao W, Cheng B, Yang Y, Ge S, "Hard magnetic properties of $NdFe_{10.5}V_{1.5}Nx$ powders with high performance", *J. Magn. Magn. Mater.* 182, 131-136 (1998).

98. Yang J, Cui B, Mao W, Cheng B, Yang J, Hu B, Yang Y, Ge S, "Effect of interstitial nitrogen on the structural and magnetic properties of $NdFe_{10.5}V_{1.5}Nx$", *J. Appl. Phys.*, 83 (5): 2700-2704 (1998).

99. Yang J, Cui B, Cheng B, Mao W, Yang Y, Ge S, "Preparation of NdFe10.5V1.5Nx powders with potential as high-performance permanent magnets", *J. Phys D: Appl. Phys.*, 31 (3): 282-286 (1998).

100. Yang J, Cui B, Mao W, Pei X, Yang Y, "Theoretical calculation on the magnetocrystalline anisotropy of $NdFe10.5V_{1.5}N_x$", *Solid State Commun.*, 104 (10): 615-618 (1997).

Books and book chapters:

1. Sun X and CuiB, "Nano-sized carbon-coated Li4Ti5O12 particles with enhanced high-rate performance as anode for lithium-ion battery", chapter in Advances in Chemistry Research, Volume 24, Nova Science Publishers, Editor James C. Taylor, 2015.
2. Cui B (editor), Recent Advances in Nanofabrication Techniques and Applications, Intech, 2011.
3. Cui B, "Ultrafast fabrication of metal nanostructures using pulsed laser melting", chapter in Recent Advances in Nanofabrication Techniques and Applications, Intech, 2011.
4. Li K, Morton K, Veres T and Cui B (corresponding author), "Nanoimprint lithography and its application in tissue engineering and bio-sensing", chapter in Comprehensive Biotechnology, 2nd edition, Elsevier, 2011.

Conference presentations and publications: (name in **bold** is my student/postdoc)

1. **Aydinoglu F**, and Cui B, "Etching very large features by metal-assisted chemical etching", ChinaNano, Beijing, August 2017.
2. **Dey RK, Shen J**, and Cui B, "Oxidation sharpening of silicon tips in 'air' environment", ChinaNano, Beijing, August 2017.
3. **Zheng S, Zhu C**, and Cui B, "Batch fabrication of AFM probes with direct positioning capability", ChinaNano, Beijing, August 2017.
4. **Saffih F, Aydinoglu F**, and Cui B, "Chromium oxide as a hard mask material better than metallic chromium", ChinaNano, Beijing, August 2017.
5. **Yamada H, Aydinoglu F, Dey RK**, and Cui B, "Grafted PMMA mono-layer brush as negative tone e-beam resist", ChinaNano, Beijing, August 2017.
6. **Yamada H, Liu Y**, and Cui B, "Mixture of polystyrene and PDMS with high dry etch resistance as negative tone e-beam resist for potential HSQ replacement", ChinaNano, Beijing, August 2017.
7. **Aydinoglu F**, and Cui B, "Etching very large features by metal-assisted chemical etching", 61th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Orlando, May 2017.
8. **Dey RK, Shen J**, and Cui B, "Oxidation sharpening of silicon tips in 'air' environment", 61th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Orlando, May 2017.

9. **Zheng S, Zhu C**, and Cui B, "Batch fabrication of AFM probes with direct positioning capability", 61th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Orlando, May 2017.
10. **Saffih F, Aydinoglu F**, and Cui B, "Chromium oxide as a hard mask material better than metallic chromium", 61th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Orlando, May 2017.
11. **Yamada H, Aydinoglu F, Dey RK**, and Cui B, "Grafted PMMA mono-layer brush as negative tone e-beam resist", 61th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Orlando, May 2017.
12. **Helwa Y**, Okasha M, Abdelgawad A, and Cui B, "pH micro-biosensor for implantable medical devices", 61th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Orlando, May 2017.
13. **Azibi A, Shen J, Dey RK**, and Cui B, "High aspect ratio polystyrene structure fabrication using electron beam lithography", 61th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Orlando, May 2017.
14. **Azibi A**, Rahman SMS, **Shen J**, and Cui B, "Fabrication of nano-gap using high and low energy electron-beam lithography", 61th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Orlando, May 2017.
15. **F. Aydinoglu**, and B. Cui, "Sub-10 nm pore formation in silicon by electrochemical etching", Nano Ontario Conference, Guelph, November 2016.
16. **F. Aydinoglu, H. Yamada, R. K. Dey**, and B. Cui, " Patterning irregular substrates using grafted polystyrene monolayer brush", Nano Ontario Conference, Guelph, November 2016.
17. **Y. Helwa,** M. Okasha, A. Abdelgawad, and B. Cui, "pH μ-biosensor for implantable medical devices", Nano Ontario Conference, Guelph, November 2016.
18. **Aydinoglu F, Dey RK**, and Cui B, "Electron beam lithography using grafted polystyrene monolayer brush", 60th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Pittsburgh, May 2016.
19. **Con C** and Cui B, "Electron High aspect ratio and high resolution nanofabrication using self-assembly of salt-polymer nanocomposite film", 60th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Pittsburgh, May 2016.
20. **Ayari-Kanoun A, Saffih F, Aydinoglu F,** and Cui B, "Silicon nanostructures with negatively tapered profile by ICP-RIE", 60th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Pittsburgh, May 2016.
21. **Aydinoglu F** and Cui B, "Down to 7 nm pores in Si by photo-assisted electrochemical etching", 60th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Pittsburgh, May 2016.
22. **AlMutairi A, Shokouhi B**, Yu G, and Cui B, "Neutral surface modification by e-beam exposure for PS-b-PMMA self assembly", 60th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Pittsburgh, May 2016.
23. **Zheng S, Dey RK, Aydinoglu F**, and Cui B, "Mixture of ZEP and PMMA with tunable sensitivity as a liftoff resist with controllable undercut", 60th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Pittsburgh, May 2016.

24. **Con C** and Cui B, "Enhanced etching resistance of e-beam resist Na-PSS by adding metal compound into resist or developer", 60th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Pittsburgh, May 2016.
25. **Aydinoglu F**, **Con C**, and Cui B, "Ultra high aspect ratio sub-50 nm deep silicon trenches by photo-assisted electrochemical etching", 59th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), San Diego, May 2015.
26. **Dey RK** and Cui B, "Electron beam lithography on irregular surface using grafted PMMA brush", 59th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), San Diego, May 2015.
27. **AlMutairi A**, **Shokouhi B**, **Alyalak W**, Yavuz M, and Cui B, "Neutral surface prepared by vapor phase coating for PS-b-PMMA self assembly", 59th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), San Diego, May 2015.
28. **Con C** and Cui B, "PMMA resist containing metal salt for enhanced dry etching resistance", 59th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), San Diego, May 2015.
29. **Viscomi FN**, **Dey RK**, Caputo R, and Cui B , "Enhanced adhesion of electron beam resist by grafted monolayer PMMA brush", 59th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), San Diego, May 2015.
30. **Con C** and Cui B, "Ultra-high resolution nanofabrication using self assembly of salt-polymer nanocomposite film", 59th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), San Diego, May 2015.
31. **Alyalak W**, Yavuz M, and Cui B, "Neutral surface prepared by vapor phase coating for polystyrene-b-PMMA self assembly", 40th International Conference on Micro- and Nano-Engineering (MNE), Lausanne, Switzerland, 2014.
32. Rezeq M, Eledlebi K, Ismail M, Cui B, **Dey RK**, "Characterization of Nano Schottky Junctions for a New Structure of Nano-Electronic Devices", IEEE-NANO, 2014.
33. Udayakumar N, Chakraborty A, **Irannejad M**, Cui B, Brzezinski A, Yavuz M, "The effects of using buffer layers on nanowire bonding and conductance properties of graphene based electronic devices", IEEE-NANO, Toronto, Canada, August 2014.
34. **Abbas AS**, **Alqarni S**, **Shokouhi BB**, Abbas AS, Yavuz M, Cui B, "Metal and organic nanostructure fabrication by electron beam lithography and dry liftoff", IEEE-NANO, Toronto, Canada, August 2014. (4 pages)
35. Ibrahim K, **Irannejad M**, Ramadhan A, **Alayak W**, Sanderson J, Cui B, Brzezinski A, Yavuz M, "Ultrafast Light Interaction with Graphene Oxide Aqueous Solution", IEEE-NANO, Toronto, Canada, August 2014, 4 pages.
36. **Sun X**, Cui B, "Carbon-Coated Spinel Li4Ti5O12 Nanoparticles as an Efficient Anode for Lithium Ion Battery", IEEE-NANO, Toronto, Canada, August 2014.
37. **Irannejad M**, **Zhang J**, Yavuz M, Brzezinski A, Cui B, "Sensitivity enhancement of gold nano-hole array", Sixth International Conference on Optical, Optoelectronic and Photonic Materials and Applications, Leeds, UK, August 2014.
38. **Irannejad M**, Ibrahim KM, Ramadhan A, **Alyalak W**, Sandeson J, Jose G, Jha A, Cui B, Brzezinski A, Yavuz M, "Ultrafast laser interaction with Graphene oxide aqueous solution", Sixth International Conference on Optical, Optoelectronic and Photonic Materials and Applications, Leeds, UK, August 2014.

39. **Dey RK**, Cui B, "Lift-off using solvent for negative electron beam resist by ultra-low energy exposure", 58th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Washington, DC, May 2014.
40. **Zhang J**, Cao K, Wang XS, Cui B, "Metal-containing polymer electron beam resist with high resolution and high etching resistivity", 58th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Washington, DC, May 2014.
41. **Saffih F, Alshammari A**, Yavuz M, Cui B, "Fabrication of silicon nanostructures with large taper angle by reactive ion etching", 58th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Washington, DC, May 2014.
42. **Alshammari A, Con C**, Yavuz M, Cui B, "Benchtop fabrication method on non-planar surface using SAM as e-beam resist", 58th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Washington, DC, May 2014.
43. **Alshammari A**, Yavuz M, Cui B, "Improved anti-adhesion FOTS coating for imprint mold", 58th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Washington, DC, May 2014.
44. **Alqarni S, Abbas AS**, Yavuz M, Cui B, "Water soluble and developable e-beam resist sodium PSS", 58th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Washington, DC, May 2014.
45. **Zhang J, Irannejad M,** Yavuz M, Cui B, "Smooth Au Film by Annealing for Enhanced Extraordinary Optical Transmission", 58th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Washington, DC, May 2014.
46. **Irannejad M, Zhang J**, Yavuz M, Cui B, "Numerical investigation of optical behavior of nano-hole array with non-vertical sidewall profile", 58th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Washington, DC, May 2014.
47. **Alqarni S, Abbas AS**, Yavuz M, Cui B, "Dry liftoff of metal and organic materials", 58th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Washington, DC, May 2014.
48. M. Yavuz, **M. Irannejad**, A. Brzezinski, B. Cui and E. Abdel-Rahman "Nano-bonding and Packaging Graphene-based NEMS Devices", SINC 2014, Riyadh, Saudi Arabia, December 2014.
49. **Xiangcheng Sun**, Xuedong Bai, Yongqing Wang, I. D. Hosein, M. Hegde, P. V. Radovanovic, Yu-Guo Guo and Bo Cui, "Comparison of Structural Analysis and Electrochemical Studies of C-$Li_4Ti_5O_{12}$ and CNT-$Li_4Ti_5O_{12}$ Nanocomposites particles used as Anode for Lithium Ion Battery", MRS Proceeding, Volume 1541, 2013.
50. **Irannejad M**, **Zhang J**, Yavuz M, Brzezinski A and Cui B, "Extraordinary optical transmission (EOT) in tapered nano-hole array for bio-chemical sensors application", 3rd International Conference on Nanotek & Expo, Las Vegas, December 2013.
51. **Alshammari A**, Yavuz M and Cui B, "Benchtop fabrication method on non-planar surface using SAM as e-beam resist", 39th International Conference on Micro- and Nano-Engineering (MNE), London, UK, September 2013.
52. **Abbas AS**, Yavuz M and Cui B, "Water soluble and developable electron beam resist PSS", 39th International Conference on Micro- and Nano-Engineering (MNE), London, UK, September 2013.

53. **Abbas AS**, Yavuz M and Cui B, "Metal nanostructure fabrication by electron beam lithography and dry liftoff", 39th International Conference on Micro- and Nano-Engineering (MNE), London, UK, September 2013.
54. **Con C, Alhazmi M**, Yavuz M and Cui B, "Freeze-drying for the reduction of e-beam resist collapse", 39th International Conference on Micro- and Nano-Engineering (MNE), London, UK, September 2013.
55. **Hailu D. M., Alqarni S**, Cui B and Saeedkia D, "Terahertz Surface Plasmon Resonance Sensor And Bull's Eye Structure For Material Sensing," *The International Conference on Infrared, Millimeter, and Terahertz Waves (IRMMW-THz)*, Mainz, Germany, September 2013.
56. **Hailu D. M., Alqarni S**, Cui B and Saeedkia D, "Terahertz surface plasmon resonance sensor for material sensing," SPIE *Photonics North Conference*, Ottawa, Canada, June 2013.
57. **Alqarni S, Con C** and Cui B, "Out-of-plane nanofabrication using evaporated electron beam resist", 57th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Nashville, TN, May 2013.
58. **Zhang J, Irannejad M** and Cui B, "Fabrication of Gold Bowtie Nano-antenna by E-beam Lithography on Si3N4 Membrane for SERS", 57th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Nashville, TN, May 2013.
59. **Con C** and Cui B, "Nanofabrication of high aspect ratio structures using evaporated polystyrene resist containing metal", 57th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Nashville, TN, May 2013.
60. **Dey RK** and Cui B, "Electron beam optimization using self-developing resist for large write-field electron beam lithography", 57th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Nashville, TN, May 2013.
61. **Alhazmi M**, Yavuz M and Cui B, "Contrast curve engineering by using multi-layer polystyrene electron beam resist", 57th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Nashville, TN, May 2013.
62. **Irannejad M** and Cui B, "Theoretical study of the effects of substrate material refractive index on the optical transmission of nano-hole arrays", 57th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Nashville, TN, May 2013.
63. **Dey RK** and Cui B, "Stitching error reduction in electron beam lithography with in-situ feedback using self-developing resist", 57th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Nashville, TN, May 2013.
64. **Abbas AS**, Yavuz M and Cui B, "Polycarbonate electron beam resist using solvent developer", 57th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Nashville, TN, May 2013.
65. **Con C** and Cui B, "Effect of mold treatment by solvent on PDMS molding into nanoholes", 57th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Nashville, TN, May 2013.
66. **Zhang J** and Cui B, "Nanofabrication on non-flat surface using evaporated electron beam resist polystyrene", IEEE-NEMS, Suzhou, China, April 2013.
67. **Sun X**, Sun K and Cui B, "Surface Structure Characterization and Electrochemical Characteristics of Carbon-Coated Lithium Iron Phosphate (C-LiFePO4) Particles", MRS Proceedings 1388(1), 2012.
68. **Sun X**, Iqbal A, Hosein ID, Yacaman MJ, Tang ZY, Radovanovic PV and Cui B, "Structure Characterization and Electrochemical Characteristics of Carbon Nanotube-Spinel Li4Ti5O12 Nanoparticles", MRS Proceedings 1440(1), 2012.

69. (invited) Cui B, "Nanofabrication by nano-imprint and electron beam lithography and applications", The 12th Emerging Information & Technology Conference, August, Toronto, Canada, August 2012.
70. **Liu W, Ferguson M**, Yavuz M and Cui B, "Patterning of porous silicon nitride membrane by CsCl self-assembly", The 3rd International Conference on Nanotechnology: Fundamentals and Applications, Montreal, Canada, August 2012.
71. **Zhang J, Shokouhi B** and Cui B, "Fabrication of tilted nano-pillar and nano-hole arrays by electron beam exposure",The 3rd International Conference on Nanotechnology: Fundamentals and Applications, Montreal, Canada, August 2012.
72. **Zhang J** and Cui B, "Electron beam lithography with evaporated resist", 56th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Waikoloa, Hawaii, May 2012.
73. **Dey RK**, Mansour R and Cui B, "Effect of molecular weight distribution on e-beam resist polystyrene", 56th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Waikoloa, Hawaii, May 2012.
74. **Liu W, Ferguson M**, Yavuz M and Cui B, "Patterning of porous silicon nitride membrane by CsCl self assembly", 56th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Waikoloa, Hawaii, May 2012.
75. **Con C** and Cui B, "Electron beam lithography using dry thermal development", 56th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Waikoloa, Hawaii, May 2012.
76. **Zhang J, Shokouhi B** and Cui B, "Periodic tilted Au structure fabrication by electron beam exposure", 56th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Waikoloa, Hawaii, May 2012.
77. (invited) Cui B, "Application of Nanoimprint Lithography in Tissue Engineering and Biosensing", 5th World Congress of Biotechnology, Xi'an, China, April 2012.
78. **Sun X**, Sun K and Cui B, "Structure characterizations of micro-scale $LiFePO_4$/C cathode materials", 2011 MRS Fall Meeting Proceedings, Vol. 1388, 719 (2012).
79. (invited) Cui B, "Nanoimprint lithography and its application on tissue engineering and biosensing", World Congress of Nano-S&T, Dalian, China, October 2011.
80. **Con C**, Yavuz M and Cui B, "Thermal nanoimprint lithography using fluoropolymer mold", 37th International Conference on Micro- and Nano-Engineering, Berlin, Germany, September 2011.
81. **Con C, Zhang J, Ferguson M**, Mustafa Yavuz and Bo Cui, "High molecular weight polystyrene as very sensitive electron beam resist", 37th International Conference on Micro- and Nano-Engineering, Berlin, Germany, September 2011.
82. **Zhang J, Shokouhi B** and Bo Cui, "Periodic tilted structure fabrication by electron beam exposure", 37th International Conference on Micro- and Nano-Engineering, Berlin, Germany, September 2011.
83. **Zhang J, Shokouhi B** and Cui B, "High sensitivity electron beam lithography using ZEP resist and MEK:MIBK developer", 55th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Las Vegas, Nevada, June 2011.
84. **Ma S, Con C**, Yavuz M and Cui B, "High Resolution Electron Beam Lithography Using Polystyrene Negative Resist", 55th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Las Vegas, Nevada, June 2011.

85. **Saffih F**, Cui B, Evoy S, Fitzpatrick NN, Mohammad MA, "*Bio-inspired Nano-Photodiode for Low Light, High Resolution and Crosstalk-Free CMOS Image Sensing*", IEEE International Symposium on Circuits and Systems (ISCAS), 797-800 (2011).
86. **Zhang J** and Cui B, "Fabrication of dense periodic 2D nanostructures by electron beam lithography with reduced charging effect", 36th International Conference on Micro- and Nano-Engineering, Genoa, Italy, September 2010.
87. **Zhang J** and Cui B, "Fabrication of flexible mold for hybrid nanoimprint-soft lithography", 36th International Conference on Micro- and Nano-Engineering, Genoa, Italy, September 2010.
88. **Fouad M**, Yavuz M and Cui B, "Nanofluidic channels fabricated by e-beam lithography and polymer reflow sealing", 54th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Anchorage, Alaska, June 2010.
89. Cui B, Clime L and Veres T, "Fabrication of nanostar array by nanoimprint lithography", 54th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Anchorage, Alaska, June 2010.
90. Morton K, Cui B, Malic L and Veres T, "Ultrasmooth, 3D Nanostructured Gold Films for Enhanced SPR detection by Nanoimprint Lithography and Template Stripping", 54th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication (EIPBN), Anchorage, Alaska, June 2010.
91. **Fouad M**, Yavuz M and Cui B, "Nanofluidic channels fabricated by e-beam lithography and polymer reflow sealing", NanoOntario, London, Canada, April, 2010.
92. Cui B, Clime L and Veres T, "Fabrication of nanostar array by nanoimprint lithography", NanoOntario, London, Canada, April, 2010.
93. **Rahman SMS** and Cui B, "Mold Fabrication for 3D Dual Damascene Imprinting", Nano and Giga Challenges in Electronics, Photonics and Renewable Energy, Hamilton, Canada, August 2009.
94. Malic L, Cui B, Veres T and Tabrizian M, "Periodic gold nanopost-based biochips for enhanced surface plasmon resonance imaging detection of DNA hybridization," NanoQuebec Inno2008, Montreal, Canada, 2008.
95. Hajiaboli A, Fida F, Cui B, Djaoued Y, Balaji S, Badilescu S, Kahrizi M, Truong VV, "Optical Properties of Thick Metal Nanohole Arrays Fabricated by Electron Beam – and Nanosphere Lithography", ICOOPMA, Edmonton, Canada, 2008.
96. Malic L, Cui B, Veres T and Tabrizian M, "Nanostructure enhanced surface plasmon resonance imaging detection of DNA hybridization", Proceedings of MicroTAS 2007, Paris, France , pp. 442-444, (2007).
97. Malic L, Cui B, Veres T and Tabrizian M, "Nanostructure and E-field enhanced SPR imaging detection of DNA hybridization," Colloque Nano 2007, Montreal, Canada (2007).
98. Li K, Cui B, Clime L, Geissler M and Veres T, "Fabrication of discreet nano arrays by using nanoimprint lithography and their surface-enhanced Raman scattering effect", MRS fall meeting, Boston, November 2007.
99. Cui B, Zhao S and Veres T, "High resolution electron beam lithography of PMGI using solvent developer", Micro- and Nano-Engineering, Copenhagen, September 2007.

100. Cui B, Li K, Clime L and Veres T, “Fabrication of nanoprisms by nanoimprint lithography”, Micro- and Nano-Engineering, Copenhagen, September 2007.
101. Malic L, Tabrizian M, Cui B and Teodor Veres, “Nanostructure and e-field enhanced surface plasmon resonance imaging detection of DNA hybridization”, Colloque NanoQuebec, Montreal, February 2007.
102. Cui B and Veres T, “Fabrication of metal nanoring array by nanoimprint lithography (NIL) and reactive ion etching”, Micro- and Nano-Engineering, Barcelona, September 2006.
103. Guillemette MD, Cui B, Deschambeault A, Germain L, Veres T and Auger FA, “Behaviour study of corneal fibroblasts on nanostructured and microstructured polystyrene”, NanoForum, Edmonton, Canada, 2006.
104. Le Drogoff B, Cui B, and Veres T, “Laser-Assisted nano-Transfer Printing: Application to fast 3D imprint mold fabrication”, Nanoimprint and Nanoimprint Technology (NNT), Kyoto Japan, October 2005.
105. Cui B and Veres T, “Pattern replication of 100 nm to millimeter-scale features by thermal nanoimprint lithography”, Micro- and Nano-Engineering, Vienna, September 2005.
106. Cui B and Veres T, “Polyimide nanostructures fabricated by nanoimprint lithography and its application as flexible imprint mould”, Micro- and Nano-Engineering, Vienna, September 2005.
107. Cui B, Wu W, Keimel C and Chou SY, “Filling of Via Holes by Laser-Assisted Direct Imprint (LADI)”, Micro- and Nano-Engineering, Vienna, September 2005.
108. Chou SY, Keimel C and Cui B, “Wafer Planarization by Laser Assisted Direct Imprint (PLADI)”, Micro- and Nano-Engineering, Vienna, September 2005.
109. Cui B, Chiu P, Yang HJ, Veres T, Shih I and Xiao S, “Nano-structured plastic solar cell fabricated by Direct Nanoimprint of Semiconducting Polymer”, Third International Conference on Nanoimprint and Nanoprint Technology, December 2004.
110. Beauvais J, Mun LK, Drouin D, Lavallee E, Veres T and Cui B, “Three dimensional imprinting template produced using evaporated e-beam resist and reactive ion etching”, Third International Conference on Nanoimprint and Nanoprint Technology, December 2004.
111. Cui B, Keimel C, Yu Z, Wu W, and Chou SY, “Ultrafast planarization of 200 nm period copper grating by pulsed laser”, Second International Conference on Nanoimprint and Nanoprint Technology, December 2003.
112. Lei X, Cui B, Ge H, and Chou SY, “Fabrication of subwavelength surface plasmon mirrors by nanoimprint lithography”, Second International Conference on Nanoimprint and Nanoprint Technology, December 2003.
113. Cui B, Kong L, Wu W, and Chou SY, “Fabrication of magnetic nanostructures, quantized magnetic disks, and spin-valve devices by nanoimprint lithography”, First International Conference on Nanoimprint and Nanoprint Technology, December 2002.
114. Cui B, Yu Z, Wu W, Ge H, and Chou SY, “Grating frequency doubling using nanoimprint lithography and electroless plating for large area 50 nm period grating fabrication", the 46th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication, June 2002.
115. Cui B, Kong L, Guo L, and Chou SY, “Spintronics and their fabrication by nanoimprint”, Spins in Semiconductors (SPINS) Workshop, January 2000.

116. Chou SY, Kong L, Cui B, and Wu W, "Patterned magnetic nanostructure and quantized magnetic disks", American Physical Society Centennial.
117. Cui B, Wu W, Sun X, and Chou SY, "Large area quantized magnetic disks (QMDs) fabricated by using nanoimprint lithography and electroplating", The 43rd Annual Conference on Magnetism and Magnetic Materials, November 1998.
118. Wu W, Cui B, Sun X, Zhang W, Zhuang L, Kong L, and Chou SY, "High density quantized magnetic disks fabricated using nanoimprint lithography". the 42th International Conference on Electron, Ion and Photon Beam Technology and Nano-fabrication, June 1998.
119. Kong L, Pan Q, Li M, Cui B and Stephen Y. Chou, "A new spin-valve magnetic memory cell based on patterned single-domain magnetic multilayer", The 56th Annual Device Research Conference, June 1998.

Patents:

1. Chou SY, Cui B and Keimel CF, "Method for filling of nanoscale holes and trenches and for planarizing of a wafer surface", US Patent 7,510,946 (2009).
2. Malic L, Veres T, Cui B, Normandin F and Tabrizian M, "System and method for surface plasmon resonance based detection of molecules", WO Patent 101,348 (2008), US Patent 8345253 B2, EP Patent 2,122,333 (2009).
3. Cui B and **Dey RK**, "Method of fabricating nano-scale structures and nano-scale structures fabricated using the method", US 9,522,821 B2, issued on Dec. 20, 2016. Same patent is also filed in China and Canada, pending approval.

Awards: (by me and my students)

1. Engineering Research Excellence Award, University of Waterloo (2014).
2. Dobbin scholarship from Ireland Canada University Foundation ($7000, for establishing collaboration with Irish researchers), 2012.

Other Evidence of Impact and Contributions:

1. Student supervision at University of Waterloo since 11/2008: fourteen graduate students (four graduated with a Master degree), nine undergraduate students, five postdocs/visiting scholars.
2. Guided The University of Waterloo Nanorobotics Group that is composed of only undergraduate students, mostly from the Nanotechnology Engineering program. The Group won the first place in the International Microrobotics Competition (May 12, 2011), with the other 9 participating groups mostly composed of graduate students from top US and European universities. The key to their success is the low friction surface where the micro-object can move freely with minimal friction (all other groups tried to move the micro-objects in water to reduce the friction, but all failed). This low friction surfaced shares similar property as nanoimprint mold.
3. Invited talks:

2007 at Curie Institute (France);

2008 at INESC Microsistemas and Nanotecnologias (Lisbon), University of Alabama, University of Waterloo, Trinity College Dublin, State University of New York at Albany.

2011 at World Congress of Nano-S&T, WIN-Taiwan workshop.

2012 at Trinity College Dublin, World Congress of Industrial Biotechnology, National Tsing Hua University, Institute of Semiconductors – Chinese Academy of Science, Xidian University (China), Xi'an Jiaotong University, Beijing Jiaotong University, EITC-University of Toronto, Asia Nanotech Camp 2012 (ANC2012, Peking University, July 14);

2013 at Khalifa University, King Fahd University of Petroleum and Minerals, King Abdullah City of Science and Technology, King Saud University, King Abdullah University of Science and Technology, Chongqing Institute of Green and Intelligent Technology - Chinese Academy of Science.

2014 at Northeastern University (China), Tsinghua University (China).

2015 at Nanchang University (China, December).

2017 at Northeastern University (China, January), Beijing University of Chemical Technology (China, January)

4. Frequent reviewer (>1/month) for two Institute of Physics (IOP) journals – Nanotechnology and Journal of Micromechanics and Microengineering. Regular reviewer for IEEE Transactions on Nanotechnology. Occasional reviewer for quite a few other journals including JVST B, Optics Express, Journal of Physics: D.
5. Member of American Vacuum Society, IEEE.
6. Program committee member (and session chair or co-chair) for the International Conference on Electron, Ion, and Photon Beam Technology and Nanofabrication (EIPBN).
7. Technical Program Committee member (and session co-chair), IEEE-NEMS conference. Session chair, The 3rd International Conference on Nanotechnology: Fundamentals and Applications, Montreal, Canada, August 2012.
8. International Program Committee member for MNE (Micro and Nano Engineering) conference.
9. Organizing committee member for Nanotech-2018 (May, Rome).
10. Editor-in-Chief for the Nanofabrication topic, Nanopedia (online platform, under development), 2017-.
11. Session co-chair for World Congress of Nano-S&T, Dalian, China, October, 2011.
12. Technical program committee member for IEEE Canadian Conference on Electrical and Computer Engineering 2011.
13. Organizing Committee Member for Nanotechnology Conference & Expo, Rome, May 2018.
14. Grant proposal reviewer for the government of Canada (NSERC, OCE, Mitacs).
15. Grant proposal reviewer for US Department of Energy (DOE).
16. Facility access proposal reviewer for Molecular Foundry, Lawrence Berkeley National Laboratory.
17. Editorial Board Member, Advances in Nano Research, since 9/2012.
18. Editor for the Nanofabrication section, for a Wikipedia-like platform "Nanopedia".

19. Associate editor of Nanoscale Research Letters (Springer), since 6/2010.

Supervision:

Graduate students

1. Yaoze Liu, MASc student since September 2016.
2. Chenxu Zhu, MASc student since September 2016.
3. Jiashi Shen, MASc student since September 2016.
4. Hang Zhang, MASc student since September 2016.
5. Youssef Helwa, MASc student since September 2015.
6. Ruixue Zhang, MASc student since September 2015.
7. Shuo Zheng, MASc student since January 2015.
8. Areej Alameer, MASc student since September 2014.
9. Azizah Azibi, MASc student since September 2014.
10. Lin Li, PhD student since May 2014 (Guoxing Miao as main supervisor)
11. Ferhat Aydinoglu, PhD student since January 2014.
12. Babak Shokouhi, research associate then MASc student, since October 2013.
13. Yverick Rangom, PhD student since May 2013.
14. Jian zhang, PhD student since September 2009.
15. Celal Con, graduated with master degree in 2011, now continues with PhD in my group.
16. Xiangcheng Sun, PhD student since January 2011.
17. Ripon Dey, PhD student since January 2011, then postdoc since October 2015.
18. Medhat Samaan, PhD student since May 2012.
19. Jhengyuan Chen, visiting PhD student April 2012 to February 2013.
20. Feyruz Kitapli, graduated with master degree in 2011.
21. Arwa Abbas, MASc student September 2011 to August 2013.
22. Sondos Alqarni, MASc student since January 2012.
23. Manal Alhazmi, MASc student January 2012 to December 2013.
24. Alanoud Alshammari, MASc student since May 2012.
25. Wadha Alyalak, MASc student since September 2012.

Undergraduate students

26. Akshayaa Govindan, part time URA student for Fall 2014 term.
27. Youssef Helwa, undergraduate co-op student, Spring 2014
28. Puja Vajha, undergraduate co-op student, Winter 2014.
29. Wenhan Liu, undergraduate co-op student, Fall 2011 to Winter 2012.
30. Golam Bappi, undergraduate co-op student, Fall 2011.
31. Mark Ferguson, undergraduate co-op student, totally two terms (Winter and Spring) in 2011.
32. Babak Shokouhi, undergraduate co-op student, totally three terms (Winter 2010, Fall 2010, Winter 2011) in 2010-2011.
33. Shirley Ma, undergraduate co-op student, one term (Spring 2010) in 2010.
34. Mina Fouad, undergraduate co-op student, totally three terms (Winter 2009, Fall 2009, Spring 2010) in 2009-2010.
35. Louis Minn, undergraduate co-op student, totally one term in 2010.
36. Juan Lamprea, undergraduate co-op student, totally one term in 2010.

Others

37. Mohammad Soltani, visiting student since 1/2016.
38. Asma Ayari-Kanoun, postdoc since July 2015.
39. Francesco Viscomi, visiting scholar, 11/2014-2/2015.
40. Daniel Hailu, Postdoc, November 2012 – February 2013.
41. Mehrdad Irannejad, PostDoc since April 2012.
42. Saydur Rahman, PostDoc May-August, 2009.
43. Ahmet Kilic, visiting professor (sabbatical leave from his home university in Turkey), 2010-2011.
44. Faycal Saffih, visiting scientist, May-September 2010, 2011 and 2012, from KAUST university.
45. Kien-Wen Sun, visiting professor from NCTU, April to June 2012.
46. Mohammad Rezeq, visiting professor from Khalifa University, June-July 2013.
47. Ehsanollah Fathi, Visiting Scientist from TeTechS, July 2013 to June 2015.