

NANO KOREA 2015

July 1~3, Coex, Korea

Carl V. Thompson

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EDUCATION

Harvard University	Ph.D	Applied Physics	1982
Harvard University	SM	Applied Physics	1977
Massachusetts Institute of Technology	SB	Materials Science and Engineering	1976

SELECTED PROFESSIONAL ACTIVITIES

- Professor of Materials Science and Engineering, M.I.T., 1983 to present
- Director, MIT Materials Processing Center, 2008 to present
- Co-Director, Skolkovo Center for Electrochemical Energy, 2013-present
- Co-Director/Director Iberian Nanotechnology-MIT Program, 2009-2013
- Co-Chair of Program in Advanced Materials for Micro-and Nano-Systems of the Singapore-MIT Alliance, 2001-2014
- Materials Research Society; President 1996, 1st Vice President 1995, 2nd Vice President 1994, Council member 1991-1991, Member and Chair of numerous committees, Co-Organizer of 5 Symposia, Co-Chair of the Spring 1991 meeting.
- Visiting Scientist/Fellow: Dept. Metallurgy and Materials Science, Cambridge University 1990-91; Institute for Metallurgy, Max Planck Institute Stuttgart, Germany 1997-98; Institute for Applied Materials, Karlsruhe Institute of Technology 2012.

SELECTED AWARDS AND HONORS

- Innovation Award, Semiconductor Research Corporation 2009; Inaugural Fellow, Materials Research Society 2008; Woody Award, Materials Research Society 2006; Stavros Salapatas Chair, MIT 1998-present; Singapore-MIT Alliance Fellow 1999-2014; NSF Creativity Extension 2000-2001; Alexander Von Humboldt Research Award for Senior U.S. Scientists, for Study at the Max-Planck-Institut fur Metallforschung, 1997-1998; United Kingdom Science and Engineering Research Council Visiting Fellowship, Cambridge University, Cambridge, U.K., 1990-1991; Bohmische Physical Society (elected member 1991); Mitsui Career Development Assistant Professor of Contemporary Technology, 1985-1987; IBM Faculty Development Award, 1984-1986; IBM Postdoctoral Fellowship, 1982-1983.

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MAIN SCIENTIFIC PUBLICATION (Selected from 335)

- J.O. Farlow, C.V. Thompson, and D.E. Rosner, *Plates of the Dinosaur Stegosaurus: Forced Convection Heat Loss Fins?*, Science **192**, 1123 (1976).
- C.V. Thompson and F. Spaepen, F., *Homogeneous Crystal Nucleation in Binary Metallic Melts*, Acta Metallurgica **31**, 2021 (1983).
- K.F. Kelton, A.L. Greer, and C.V. Thompson, C.V., *Transient Nucleation in Condensed Systems*, J. Chem. Physics **79**, 6261 (1983).
- C.V. Thompson, *Grain Growth in Thin Films*, Annual Rev. of Materials Sci. **20**, 245 (1990).
- C.V. Thompson, *Structure Evolution During Processing of Polycrystalline Films*, Ann. Rev. of Materials Sci. **30**, 159 (2000).
- A.L. Giermann and C.V. Thompson, *Solid State Dewetting for Ordered Arrays of Crystallographically Oriented Metal Particles*, Appl. Phys. Letts. **86**, 121903 (2005).
- G.D. Nessim, A.J. Hart, J.S. Kim, D. Acquaviva, J. Oh, C.D. Morgan, M. Seita, J.S. Leib, and C.V. Thompson, *Tuning of Vertically-Aligned Carbon Nanotube Diameter and Areal Density through Catalyst Pre-Treatment*, Nano Letters **8**, 3587 (2008).
- W. K. Choi, T. H. Liew, M. K. Dawood, H. I. Smith, C. V. Thompson, and M. H. Hong, *Synthesis of silicon nanowires and nanofin arrays using interference lithography and catalytic etching*, Nano Letters **8**, 3799 (2008).
- Y. Li, Q. Guo, J.A. Kalb, and C.V. Thompson, *Matching Glass-Forming Ability with the Density of the Amorphous Phase*, Science **322**, 1816 (2008).
- S.-W. Chang, V.P. Chuang, S.T. Boles, C.A. Ross, and C.V. Thompson, *Densely-packed arrays of ultrahigh-aspect-ratio silicon nanowire fabricated using block copolymer lithography and metal-assisted etching*, Advanced Functional Materials **19**, 2495 (2009).
- J. Ye and C.V. Thompson, *Templated Solid-State Dewetting to Controllably Produce Complex Patterns*, Advanced Materials **23**, 1567 (2011).
- C.V. Thompson, *Solid State Dewetting of Thin Films*, Ann. Rev. of Materials Research **42**, 299-334 (2012).
- R.R. Mitchell, B.M. Gallant, C.V. Thompson and Y. Shao-Horn, *All-carbon-nanofiber electrodes for high-energy rechargeable Li-O₂ batteries*, Energy Environ. Sci. **4**, 2952 (2011).

RESEARCH INTERESTS

- Structure evolution during processing of thin films and nanostructures.
- Templating of structure evolution.
- Applications of thin films and microstructures in electronic, microelectromechanical and electrochemical devices.