

**BIOGRAPHICAL SKETCH****C. Barry CARTER**

Research Professor and Emeritus Professor. Dept. Chemical & Biomolecular Eng, and Dept Materials Sci. & Eng. University of Connecticut, Storrs, CT 06269-3222

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Cambridge Univ.	Natural Sciences (Theoretical Physics)	B.A., M.A., 1970, 1974
Imperial College	Materials Science (Chemical Engineering) London	M.Sc., 1971
Oxford Univ.	Metallurgy & Science of Materials	D.Phil., 1976
Cambridge Univ.	Natural Sciences	Sc.D., 2005

**Appointments**

2018-	Emeritus Professor, MSE Department, University of Connecticut (UConn)	
2018-	Research Professor, Chemical & Biomolecular Engineering, U Connecticut (UConn)	
2017-2022	Visiting Professor, School of Materials, University of Manchester, UK	
2012-	CINT Distinguished Affiliate Scientist, Sandia National Lab, NM	
2014	JSPS Fellow, University of Tokyo and University of Sendai, Japan	
2013-2018	Professor, Depts of CBE and MSE, University of Connecticut (UConn)	
2007-2013	Professor, Dept. of CMBE, University of Connecticut (UConn)	
2007-2012	Head, Dept. of CMBE, University of Connecticut (UConn)	
2005 (6 mnths)	Visiting Fellow, Peterhouse, University of Cambridge, UK	
2005 (2 mnths)	Advisor, ICYS, Tsukuba, Japan	
2004 (4 mnths)	2005 Jubilee Professor, Chalmers University, Sweden	
2004-	Editor-in-Chief, Journal of Materials Science, published by Springer Nature	
1994-2008	Consultant/Visiting Researcher, Sandia NL, Livermore, CA	
1992-1995	Associate Director, Center for Interfacial Engineering, U of Minnesota	
1991-1992	Director, the High-Resolution Microscopy Center, U of Minnesota	
1991-2007	Professor & 3M Endowed Chair, Dept Chem. Eng & Mat. Sci, U of Minnesota	
1988-1991	Professor, Dept. of MS&E., Cornell University	
1987 (3 mnths)	Consultant, Xerox PARC, Palo Alto, CA	
1985-1986	Visiting Professor, Bristol University, UK	
1979-1988	Assistant/Associate Professor ( <i>Tenure 1983</i> ), Dept. of MS&E., Cornell University	
1977-79 Postdoc	Cornell Univ.	Materials Science & Engineering
1974-77 Postdoc	Oxford Univ.	Metallurgy & Science of Materials

**Honors**

2021 Sorby Award (IMS presented at IMAT in St Louis)

2020- MSE Dept Advisory Board, Clemson University

2019 Honorary Fellow of the Royal Microscopical Society

2018 (Kolkata: November), Honorary Member Indian Institute of Metals

Member, (2016-2017) IUMRS Commission on Development

The 2016 Das Gupta Memorial Lecturer, EMSI, Varanasi, India June 6-10, 2016

The 2015 Douglas Osheroff Lecturer, UACJ, Ciudad Juarez, Mexico, November 4, 2015

Member, Scientific Advisory Committee, Center for Functional Nanomaterials (CFN), Brookhaven National Laboratory (2013-2016)

Ceramic Education Council (ACerS) Outstanding Educator Award Oct. 2014

JSPS Fellowship May 2014. Tokyo University and Tohoku University

MSA Distinguished Physical Scientist, August 2013

Elected 2011-2014, President, International Federation of Societies for Microscopy (IFSM)

Visiting Committee, MSE Program, Boston University (2011, 2012)

Fellow [AAAS](#) (2011), [MRS](#) (2009), [MSA](#) (2009), [RMS](#) (1996), [ACerS](#) (1995)

Elected Member of the Connecticut Academy of Science (CASE)

Chairman, Reactivity of Solids Conference, Minneapolis 2007

Chair, Ceramics Gordon Conference 2004

Elected 2003-2010, General Secretary, International Federation of Societies for Microscopy (IFSM)

ACerS Roland B Snow Award 1989, 1993, 1995, 2000, 2001, 2002

Alexander von Humboldt Senior Award 1997

The Bernd Matthias Scholar, LANL, Los Alamos, NM 1997

John Simon Guggenheim Fellow 1985

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**10 Writings (a full list is given at [www.CBarryCarter.com](http://www.CBarryCarter.com)) WoS h=43; Google Scholar h=52**

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1. Williams, D.B. & Carter, C.B., *Transmission Electron Microscopy: A Textbook for Materials Science*, 1<sup>st</sup> & 2<sup>nd</sup> Editions. Springer, New York (1996 & 2009) ~20,000 print copies. >9,881 cites. >1.4M downloads
2. Carter, C.B. & Norton, M.G. *Ceramic Materials; Science and Engineering* 1<sup>st</sup> & 2<sup>nd</sup> Editions. Springer, New York (2007 & 2013) >1,848 cites. >1M downloads
3. Winterstein, J.P., Carter, C.B. (2014) *J Eur Ceram Soc* **34**, 3007–3018. ‘Electron-beam damage and point defects near grain boundaries in cerium oxide.’
4. Farrer, J.K. and Carter, C.B., 2006, *J Mater. Sci.* **41**, (16) 5169-5184, 'Texture in Solid-State Reactions'.
5. Ravishankar, N., Shenoy, V.B. and Carter C.B., 2004, *Adv. Mater.* **16**(1) 76-80, 'Electric Field Singularity Assisted Nanopatterning.'
6. Mackay, D., Janish, M.T., Sahaym, U., Kotula, P.G., Jungjohann, K.L., Carter, C.B., Norton, M.G., 2014, *J Mater Sci* **49**, 1476-1483 “Template-free Electrochemical Synthesis of Tin Nanostructures”.
7. Gilliss, S.R., Bentley, J., Carter, C.B., 2005, *Appl. Surf. Sci.* **241**, 61-67, 'Electron Energy-loss Spectroscopic Study of the Surface of Ceria Abrasives.'
8. Korte, C., Ravishankar, N. Carter, C.B. and Schmalzried, H., 2002, *Solid State Ionics* **148**, 111-121 'Kinetics of Spinel Formation in an External Applied Electric Field.'
9. Tietz, L.A., Carter, C.B., Lathrop, D.K., Russek, S.E., Buhrman, R.A., Michael, J.R., 1989, *J Mater Res* **4**(5), 1072–1081. ‘Crystallography of YBa<sub>2</sub>Cu<sub>3</sub>O<sub>6+x</sub> Thin Film-Substrate Interfaces’. (119 cites)
10. Carter, C.B. and Holmes, S.M., 1977, *Philosophical Magazine* **35**(5), 1161–1172. ‘The Stacking-Fault Energy of Nickel’. (164 cites; cited every year since 1997)

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**Synergistic Activities**

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1. Microscopy Society of America Director ('92-'94), Exec. Council ('96-'98), **President** ('97), International Committee Chair ('01-'03). MSA representative to AAAS (-present).
2. **Past-Editor**, *Journal of Microscopy* ('96-'99); **Editor**, *Microscopy & Microanalysis* ('00-'03)
3. **Chair** (2012-2014) Awards Committee Materials Research Soc. Co-organizer: 5 MRS Symposia.
4. Fellow of AAAS, MRS, MSA, MAS, RMS and ACerS

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**Narrative**

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**C. Barry CARTER** is a Research Professor at the University of Connecticut in Storrs, CT. He holds a B.A., M.A. and Sc.D. from Cambridge University, an M.Sc. from Imperial College, London, and a D. Phil. From Oxford University. After 6 years in Oxford (3 as a postdoc.) he moved to Cornell where he spent 14 years leaving as a full Professor. He then spent 16 years as Professor and the 3M Endowed Multidisciplinary Chair in the Department of Chemical Engineering and Materials Science at the University of Minnesota and 5 years as Head of UConn's Department of Chemical, Materials and Biomolecular Engineering. He was awarded Emeritus Status in 2018. He is a CINT Distinguished Affiliate Scientist at Sandia National Lab. He had earlier held visiting positions at LANL (as the Bernd T. Matthias Scholar), Chalmers (as the 2004 Jubilee Professor), NIMS in Tsukuba, Bristol University, Max Planck Institute in Stuttgart, the Institute for Physical Chemistry in Hannover and the Ernst Ruska Center in Jülich. He has been awarded a **Guggenheim Fellowship** and the **Alexander von Humboldt Senior Award**. Elected Member of the Connecticut Academy of Science and Engineering (CASE). He served as the 1997 President of MSA, as the 2003-2010 General Secretary of the IFSM and the (2011-2014) President of IFSM. He is best known as the co-author of three textbooks: *Transmission Electron Microscopy: A Textbook for Materials Science* with Dave Williams, *Ceramic Materials; Science and Engineering* with Grant Norton, and *Transmission Electron Microscopy: Diffraction, Imaging, and Spectrometry* edited with Dave Williams (published in August 2016). He is the **Editor-in-Chief** of the *Journal of Materials Science* (IF=4.220), a journal that was cited 63,029 (WoS) times in 2020 with 2,026,752 official downloads in 2020. As the Editor-in-Chief, he processes all of the 10,000+ submissions that are received each year, distributing them to a team of 25 Editors. His research interests focus on the application of different microscopies to understand how the structure and chemistry of materials determine their properties and behavior. He works on several projects including a study of the deformation of Ta and its growth in thin-film form, electrospinning of TiO<sub>2</sub>, lithiation of nanomaterials, especially Sn whiskers and MoS<sub>2</sub>, for battery applications, and how the crystallization dynamics control the properties of phase-change materials

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**Thesis Advisor (32) and Postdoc Sponsor (19)**

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PhDs include Arzu Altay, Head of Nuclear Department, **Envy Energy & Environmental Investments Inc.** in Turkey; Ian Anderson, 2017 President of Microscopy Society of America; Chris Blanford Senior Lecturer at U Manchester; Nam-Hee Cho, Prof. at Inha U in S Korea; Bruno De Cooman (deceased); Shelley Gilliss Science Chief at RKMC Attorneys; Paul Kotula at Sandia National Labs, 2019 President of Microscopy Society of America; Lisa Moore at Corning Glass; Katrien Ostyn Tata Steele retired; Sundar Ramamurthy VP at Applied Materials; Yonn Rasmussen VP at Xerox; Scott Summerfelt, >120 patents at Texas Instruments; David Susnitzky Head of Failure Analysis at Apple; David Theodore retired Manager at Freescale; Jane Zhu Program Manager at DOE.