

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

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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., 1975/6
Cambridge Univ.	Natural Sciences	Sc.D., 2005

**Appointments**

2013-	Professor, Depts of CBE and MSE, University of Connecticut (UConn)
2012-	CINT Distinguished Affiliate Scientist, Sandia National Lab, NM
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
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**

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

JSPS Fellowship May 2014

MSA Distinguished Physical Scientist, August 2013

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

Elected Member of the Connecticut Academy of Science (CASE)

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

Alexander von Humboldt Senior Award 1997

Bernd Matthias Scholar, LANL, Los Alamos, NM 1997

Guggenheim Fellow 1985

**5 Related Products (a full list is given at [www.CBarryCarter.com](http://www.CBarryCarter.com)) ISI h=39; GS h=42**

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. >4,700 cites
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) >480 cites.
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  $\text{YBa}_2\text{Cu}_3\text{O}_{6+x}$  Thin Film-Substrate Interfaces’. (115 cites)
10. Carter, C.B. and Holmes, S.M., 1977, *Philosophical Magazine* **35**(5), 1161–1172. ‘The Stacking-Fault Energy of Nickel’. (125 cites; cited every year since 1997)

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### Synergistic Activities

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1. International Federation of Societies for Microscopy **Vice-President** of IFSM (’15-’18), **President** of IFSM (’11-’14), **General Secretary** (’03-’10) (Executive Council (’99-’02).
  2. Microscopy Society of America Director (’92-’94), Exec. Council (’96-’98), **President** (’97), International Committee Chair (’01-’03). MSA representative to AAAS (-present).
  3. **Editor-in-Chief** (’04-) *Journal of Materials Science*. IF increased from 0.79 (’04) to 2.371 in ’14. Now >6,400 submissions annually all handled by E-in-C; >85% rejection rate. Previously: **Editor**, *Journal of Microscopy* (’96-’99); **Editor**, *Microscopy & Microanalysis* (’00-’03)
  4. **Chair** (2012-2014) Awards Committee Materials Research Soc. Co-organizer: 5 MRS Symposia.
  5. ACerS **Member**, Fellows Panel (2013-2016)
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### Narrative

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**C. Barry CARTER** is a 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 is a CINT Distinguished Affiliate Scientist at Sandia National Lab (1 of 4). 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**. He is a Fellow of AAAS, MRS, MSA, ACerS and RMS and an elected Member of CASE. He served as the 1997 President of MSA, as the 2003-2010 General Secretary of the IFSM and is now the (2011-2014) President of IFSM. He is best known as the co-author of two textbooks *Transmission Electron Microscopy: A Textbook for Materials Science*, with Dave Williams and *Ceramic Materials; Science and Engineering* with Grant Norton and as the **Editor-in-Chief** of the *Journal of Materials Science* (IF=2.371), a journal that was cited >36,000 times in 2014. As the Editor-in-Chief, he processes all of the 6,400+ submissions that are received each year, distributing them to a team of 20 Editors. *Transmission Electron Microscopy: Diffraction, Imaging, and Spectrometry*, Edited with Dave Williams was published in August 2016. 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 is currently working on several projects including a study of the deformation of Ta and its growth in thin-film form, electrospinning of  $\text{TiO}_2$ , lithiation of nanomaterials, especially Sn whiskers and  $\text{MoS}_2$ , 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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Altay, A. (Envy, Turkey)(Ph.D.), Anderson, I.M. (ex-NIST)(Ph.D.), Arellano, J. (UNAM, Mexico)(PD), Basu, J. (IIT Varanasi, India)(PD), Bhowmick, S. (Hysitron)(PD), Blanford, C. (U Manchester)(Ph.D.), Chen, S. (Motorola)(Ph.D.), Cho, N.-H. (Inha U)(Ph.D.), Cohen, D. (Wilbur-Ellis Co)(Ph.D.), De Cooman, B.C. (Postech)(Ph.D.), Elgat, Z. (Elcon Recycling, Israel)(Ph.D.), Farrer, J. (BYU)(Ph.D.), Gilliss, S.R. (RKMC)(Ph.D.), Heffelfinger, J. (Medtronic)(Ph.D.), Johnson, M. (Seagate)(Ph.D.), Kotula, P.G. (SNL)(Ph.D.), Kumar, S. (Intel)(MS), Mallamaci, M. (ParkerHann.)(Ph.D.), Moore, L.A. (Corning)(Ph.D.), Morrissey, K.J. (ex-Corning)(Ph.D.), Nowak, J. (MN Science Museum)(Ph.D.), Ostyn, K. (Belgium)(Ph.D.), Perrey, C.R. (Boston Scientific)(Ph.D.), Ramamurthy, S. (Appl Mater)(Ph.D.), Rasmussen, R.D. (Xerox)(Ph.D.), Rasmussen, Y.K. (Xerox)(Ph.D.), Riesterer, J. (FEI)(Ph.D.), Scarfone, C. (Rohnert Pk Cancer C)(MS), Summerfelt, S.R. (TI)(Ph.D.), Susnitzky, D. (CEA)(Ph.D.), Theodore, N.D. (Freescale)(Ph.D.), Winterstein, J. (NIST)(Ph.D.), Xue, Y. (RIT)(MS), Yanina, S. (PNNL)(Ph.D.), Zagrebelny, A. (Cypress)(Ph.D.), Zhu, J.G. (DOE)(Ph.D.)