Kathleen A. Richardson

Director & Professor
Materials Science and Engineering

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Research View Short Biography

Awards, Honors and Professional Service

EDUCATION

Ph.D., Ceramics, Alfred University, (1992)
"Time-Dependent Defect Processes in Low Tg Chalcogenide Glass Materials"
M.Sc., Glass Science, Alfred University, (1988)
"Faraday Rotator Materials Utilizing Rare Earth-Doped Sol Gel Glass"
B.S., Ceramic Engineering, Alfred University, (1982)

PROFESSIONAL EXPERIENCE

Director and Full Professor, Clemson University, School of Material Science and Engineering, January 2005-present
Affiliated Professor, University of Central Florida, College of Optics and Photonics, CREOL, January 2005-present
Adjunct Professor, East China University of Science and Technology (ECUST), Shanghai, China May 2007-present
Associate Professor, University of Central Florida, School of Optics, Departments of Chemistry and Mechanical, Materials and Aerospace Engineering, AMPAC, August 1998-2004
Manager, R&D Materials, R&D Technology Groups, SCHOTT North America-Regional R&D, Duryea PA. January 2002-August 2003 (on leave of absence from the School of Optics, University of Central Florida); VISION team member for SCHOTT Glas Board of Management, Mainz Germany (April – July 2003)
Visiting Professor, Université Bordeaux, Institut de Chimie de la Matiere Condensée de Bordeaux (ICMCB), August – December 2000, March 2001
Visiting Professor, Université Claude Bernard – Lyon I, Laboratoire de Physico-Chimie des Matériaux Luminescents, (LPML) July 2000
Instructor, "Polyurethane Polishing Pad Materials: Properties and Performance," Chemical Mechanical Planarization (CMP) Consumables: Fundamentals and Applications," 198th Meeting of the Electrochemical Society, Phoenix AZ, October 2000
Instructor, "Special Issues in the Manufacture of Infrared Optical Materials,"(1995-1997);

"Optical Glass Processing and Products" (1999, 2000, 2002, 2003); University of Rochester, Institute of Optics Summer School
Instructor, "Manufacturing Materials for Infrared Optical Systems," SPIE/NAPEM Short course series (1995, 1996)
Assistant Professor, University of Central Florida, Departments of Chemistry and Mechanical, Materials and Aerospace Engineering, August 1993 – 1998
Research Scientist, University of Central Florida, Center for Research and Education in Optics and Lasers (CREOL), Orlando, FL; October 1992 - August 1993.
Research Fellow, Naval Weapons Center, Chemistry Division, China Lake CA, September 1991-October 1992; dual site researcher at CREOL, University of Central Florida
Visiting Scientist, Hoya Corporation, R&D Center, Optronics Division, Tokyo, Japan, June-September 1991
Lecturer, NYS College of Ceramics, Alfred University; September 1988 - June 1991
CES 308, "Glass Laboratory: Introduction to Glass Science"
Instructor, "Materials for Optical Applications," Alfred University, Center for Advanced Ceramic Technology (CACT), Short Course Series, 1989-1991
Laboratory Engineer, Laboratory for Laser Energetics, Univ. of Rochester, Rochester, NY; October 1983 - August 1988.
Electronic Technician IV, Laboratory for Laser Energetics, Univ. of Rochester, Rochester NY; February - September 1983.

CONSULTING and VISITING SCIENTIST HISTORY

Edmund Optics, Barrington NJ, June 2008-present
SCHOTT North America, Optics for Devices (OD) Business Segment, Duryea PA & Mainz GERMANY, August 2003-present
Invenios, Inc., Santa Barbara CA, August 2003-February 2004
Schott Glass Technology, R&D Group, Duryea, PA, June 2001-December 2001
Harris Corporation, Electro-Optics Systems Division, Melbourne FL, October 1998–June 1999
Kigre, Inc., Hilton Head SC, June 1987-June 1989

PATENTS

"Polishing pad composition and method of use," Y. Obeng, E.M. Yokely and K. A. Richardson, U.S. Patent No. 6,764,574 (20 July 2004)
"Method of Making Composite Optical Devices Employing Polymeric Liquid Crystals," S. D. Jacobs, K. A. Cerqua and K. Marshall, U.S. Patent No. 5,054,888 (11 October 1991)
"Optical Apparatus Using Liquid Crystals for Shaping the Spatial Intensity of Optical Beams Having Designated Wavelengths," S. D. Jacobs and K. A. Cerqua, U.S. Patent No. 4,679,911 (14 July 1987)

PEER-REVIEWED PUBLICATIONS

Submitted, accepted or in press

"Compositional dependence of the nonlinear refractive index of new germanium-based

chalcogenide glasses", L. Petit, N. Carlie, H. Chen, S. Gaylord, J. Massera, G. Boudebs, J. Hu, A. Agarwal, L.C. Kimerling, K. Richardson, Journal of Solid State Chemistry, in press (2009)
"Spin-coating of Ge23Sb7S70 Chalcogenide Glass Thin Films", Shanshan Song, Nathan Carlie, Julie Boudies, Laeticia Petit, Kathleen Richardson, Craig B. Arnold, Journal of Non-Crystalline Solids, in press (2009)
"Processing and characterization of new passive and active oxysulfide glasses in the Ge-Ga-Sb-S-O system", L. Petit, J. Abel, T. Anderson, J. Choi, V. Nazabal, V. Moizan, M. Couzi, M. Richardson, C. Maurel, T. Cardinal, K. Richardson, Journal of Solid State Chemistry, in press (2009)
"Engineering of glasses for advanced optical applications," N. Carlie, L. Petit, and K. Richardson, J. of Engineered Fibers and Films, in press (2009)
"Evolution of the linear and nonlinear optical properties of femtosecond laser exposed fused silica," A. Royon, L. Canioni, M. Richardson and K. Richardson, in press J. Opt. Soc. of Amer. B, (2009)
"Cavity-enhanced Infrared Absorption Spectroscopy Using Planar Chalcogenide Glass Microdisk Resonators: Experiment and Analysis," J. Hu, N. Carlie, L. Petit, A. Agarwal, K. Richardson and L. Kimerling, in press IEEE J. Lightwave Technology, (2009)
"Comparison of the Au nanoparticle formation and dissolution mechanisms with those of Cu and Ag nanoparticles in SiO2 sol-gel films", J. Massera, J. Choi, L. Petit, M. Richardson, Y. Obeng, K. Richardson, submitted to Materials Research Bulletin (2009)
"Optical loss reduction in HIC chalcogenide glass waveguides via thermal reflow," J. Hu, N. Feng, A. Agarwal, L. Kimerling, N. Carlie, L. Petit and K. Richardson, submitted to Optics Letters, (2009)
"Thermal and Structural Properties Characterization of Commercially Moldable Glasses," S. Gaylord, B. Ananthasayanam, L. Petit, C. Cox, U. Fotheringham, P. Joseph, K. Richardson, submitted to the J. Amer. Cer. Soc., (2009)
"Multi-Institute Team Teaching (MITT): A Novel Approach to Highly Specialized Graduate Education," W. Heffner, H. Jain, S.W. Martin, K. Richardson, E. Skaar, submitted to J. ASEE (2009)
"Formation/dissolution of Silver-based nanoparticles", J. Massera, J. Choi, L. Petit, M. Richardson, Y. Obeng, K. Richardson, submitted to Materials Research Bulletin (2008)

2009

104. Invited "Development of novel integrated bio/chemical sensor systems using chalcogenide glass materials," L. Petit, N. Carlie, B. Zdyrko, I. Luzinov, K. Richardson, J. Hu, A. Agarwal, L. Kimerling, T. Anderson, and M. Richardson, Int. J. of Nanotechnology, 6 (2008) 799-814
103. "Estimation of peak Raman gain coefficients for Barium-Bismuth-Tellurite glasses from spontaneous Raman cross-section experiments," J. Jackson, C. Smith, J. Massera, C. Rivero-Baleine, C. Bungay, L. Petit, K. Richardson, Optics Express 17, 11 (2009) 9071-9079
102. "Viscosity Properties of Sodium Borophosphate Glasses", S. Gaylord, B. Tincher, L. Petit, K. Richardson, Materials Research Bulletin 44 (2009) 1031–1035
101. "Effect of Ga and Se addition on the photo-response of new chalcogenide glasses under IR femtosecond laser exposure", L. Petit, J. Choi, T. Anderson, R. Villeneuve, J. Massera, N. Carlie, M. Couzi, M. Richardson, K. Richardson, Optical Materials 31 (2009) 965–969
100. "Thermal and structural characterization of Selenium-rich As-Se fibers," L. Petit, N. Carlie, K. Richardson, Materials Science and Engineering B 156 32–35 (2009)

2008

99. “Femtosecond laser photo-response of Ge23Sb7S70 films,” T. Anderson, L. Petit, N. Carlie, J. Choi, J. Hu, A. Agarwal, L. Kimerling, K. Richardson, M. Richardson, Optics Express 16, 24 (2008) 20081-20098

98. “Processing and characterization of new oxysulfide glasses in the Ge-Ga-As-S-O system”, C. Maurel, L. Petit, M. Dussauze, E.I. Kamitsos, M. Couzi, T. Cardinal, A. C. Miller, H. Jain, K. Richardson, J. of Solid State Chemistry, 181 (2008) 2869-2876

97. “Planar waveguide-coupled, high-index-contrast, high-Q resonators in chalcogenide glass for sensing,” J. Hu, N. Carlie, N. Feng, L. Petit, A. Agarwal, K. Richardson, and L. Kimerling, Optics Letters 33, (2008) 2500

96. “Comparison of the Photo-Response of Chalcogenide Glasses to IR fs Laser Exposure used for micro-structuring,” L. Petit, N. Carlie, T. Anderson, J. Choi, M. Richardson, K. Richardson, IEEE J. of Special Topics in Quantum Electronics 14 (5) Article number 4519811, (2008) 1323-1334

95. “Formation/dissolution of Copper based nanoparticles”, J. Massera, J. Choi, L. Petit, M. Richardson, Y. Obeng, K. Richardson, Materials Research Bulletin 43 (2008) 3130–3139

94. “Synthesis of Nanostructured Nanoclay-Zirconia Multilayers: A Feasibility Study,” H. Chen, G. Zhang, K. Richardson and J. Luo, J. of Nanomaterials, Special Issue: Nanomechanics and Nanostructructured Multifunctional Materials: Experiments, Theories, and Simulations, vol. 2008, Article ID 749508, 8 pages, 2008. doi:10.1155/2008/749508

93. “Exploration of Waveguide Fabrication from Thermally Evaporated Ge-Sb-S Glass Films”, J. Hu, V. Tarasov, N. Carlie, L. Petit, A. Agarwal, K. Richardson, and L. Kimerling, J. Optical Materials 30 1560–1566 (2008)

92. “Demonstration of chalcogenide glass racetrack micro-resonators,” J. Hu, N. Carlie, L. Petit, A. Agarwal, K. Richardson, and L. Kimerling, Optics Letters, 33, 8 761-763 (2008); selected for the Virtual Journal of Biomedical Optics 3, 5 (2008)

91. “Germanium oxysulfide glasses for optics”, C. Maurel, T. Cardinal, P. Vinatier, L. Petit, K. Richardson, N. Carlie, F. Guillen,M. Lahaye, M. Couzi, F. Adamietz, V. Rodriguez, M. Bellec, L. Canioni, Materials Research Bulletin, 43 1179–1187 (2008)

90. “Raman gain of selected tellurite glasses for high power IR fiber lasers calculated from spontaneous scattering spectra,” M. D. O’Donnell, K. Richardson, R. Stolen, C. Rivero, T. Cardinal, M. Couzi, D. Furniss, A. B. Seddon, J. Optical Materials 30 946–951 (2008)

2007

89. “Demonstration of Low-Loss High-Index-Contrast Planar Glass Waveguides with Graded-Index Cladding Layers”, J. Hu, N. Feng, N. Carlie, L. Petit, J. Wang, A. Agarwal, K. Richardson, L. Kimerling, Optics Express, 15 14566 (2007)

88. “Correlation between the nonlinear refractive index and structure of germanium-based chalcogenide glasses”, L. Petit, A. Humeau, N. Carlie, G. Boudebs, H. Jain, A. Miller, and K. Richardson, Materials Research Bulletin, 42 2107-2116 (2007)

87. “Si-CMOS-compatible lift-off fabrication of low-loss planar chalcogenide waveguides”, J. Hu, V. Tarasov, N. Carlie, N. Feng, L. Petit, A. Agarwal, K. Richardson, and L. Kimerling, Optics Express, 15 11798 (2007)

86. “Strong nuclear contribution to the Kerr effect in niobium oxide containing glasses,” A. Royon, L. Canioni, B. Bousquet, M. Couzi, V. Rodriguez, C. Rivero, T. Cardinal, E. Fargin, M.

Richardson and K. Richardson, Physical Review B., 75, 104207 (2007)
85. “Influence of modifier oxides on the structural and optical properties of binary TeO2 glasses,” C. Rivero, R. Stegeman, K. Richardson, G. Stegeman, G. Turri, M. Bass, P. Thomas, M. Udovic, T. Cardinal, E. Fargin, M. Couzi, H. Jain and A. Miller, J. Appl. Phys., 101 (2) (2007)
84. “Effect of IR femtosecond laser irradiation on the structure of new sulfo-selenide glasses”, L. Petit, N. Carlie, T. Anderson, M. Couzi, J. Choi, M. Richardson, K. Richardson, J. Optical Materials 29 1075–1083 (2007)
83. “Studies on Structural, Electrical and Optical Properties of Cu-doped As-Se-Te Chalcogenide Glasses,” J. Hu, L. Petit, N. Carlie, X. Sun, A. M. Agarwal, T. Anderson, J. Choi, J. F. Viens, M. Richardson, K. A. Richardson, L. C. Kimerling, J. Appl. Phys., 101 63520 (2007)
82. “Luminescence properties of Eu3+ or Dy3+/ Au co-doped SiO2 nanoparticles, ” L. Petit, J. Griffin, N. Carlie, V. Jubera, M. García, F. E. Hernández, and K. Richardson, Materials Letters, 61 2879-2882 (2007)
81. “Fabrication and Testing of Planar Chalcogenide Waveguide Integrated Microfluidic Sensor,” J. Hu, V. Tarasov, N. Carlie, L. Petit, A. Agarwal, K. Richardson, and L. Kimerling, Optics Express 15 2307-2314 (2007)
80.“Tellurite and fluoro-tellurite glasses for fiberoptic Raman amplifiers: Glass characterization, optical properties, Raman gain, preliminary fiberization and fiber characterization,” M. D. O’Donnell, A. B. Seddon, D. Furniss, V. K. Tikhomirov, C. Rivero, M. Ramme, R. Stegeman, G. Stegeman, K. Richardson, R. Stolen, M. Couzi and T. Cardinal, J. American Ceramic Society 90 5 1448–1457 (2007)

2006
79. “Effect of the substitution of S for Se on the structure and on the non-linear properties of the glasses in the system Ge0.18Ga0.05Sb0.07S0.70-xSex”, L. Petit , N. Carlie, R. Villeneuve, J. Massera, M. Couzi, A. Humeau, S. Cherukulappurath, G. Boudebs, and K. Richardson, J. Non-Cryst. Solids, 352 (2006) 5413-5420
78. “Laser-induced defects in fused silica by femtosecond IR irradiation,” A. Zoubir, C. Rivero, R. Grodsky, K. Richardson, M. Richardson, T. Cardinal, and M. Couzi, Phys. Rev. B 73, (2006) 224117
77. “Nonlinear optical properties of glasses in the system Ge/Ga – Sb – S/Se,” L. Petit , N. Carlie, K. Richardson, A. Humeau, S. Cherukulappurath, G. Boudebs, Optics Letters, 31, (2006)10
76. “Correlation between physical, optical and structural properties of sulfide glasses in the system Ge – Sb – S”, L. Petit, N. Carlie, K. C. Richardson, M. Couzi, F. Adamietz, V. Rodriguez, Mat. Chem. Phys, 97 (2006) 64-70
75. “Chalcogenide Waveguide Structures as Substrates and Guiding Layers for Evanescent Wave Raman Spectroscopy of Bacteriorhodopsin,” A. Pope, A. Schulte, Y. Guo, L. K. Ono, B. Roldan Cuenya, C. Lopez,, K. Richardson, Vibrational Spectroscopy 42, 2 (2006) 249-253
74. “Raman gain measurements and photo-induced transmission effects of germanium- and arsenic- based chalcogenide glasses,” R. Stegeman, G. Stegeman, P. Delfyett Jr., L. Petit, N. Carlie, K. Richardson, and M. Couzi, Optics Express 14 24 (2006) 11702

2005
73. “Effect of the substitution of S for Se on the structure of the glasses in the system

Ge0.23Sb0.07S0.70-xSex", L. Petit, N. Carlie, K. Richardson, Y. Guo, A. Schulte, B. Campbell, B. Ferreira, S. Martin, J. Phys. and Chem. of Solids, 66 (2005) 1788-1794
72. "Raman Gain measurements in Bulk Glass samples," R. Stegeman, C. Rivero, G. Stegeman, K. Richardson, P. Delfyett, L. Jankovic and H. Kim, J. Opt. Soc. B 22 1861-1867 (2005)
71. "Resolved Discrepancies Between Visible Spontaneous Raman Cross-Section and Direct Near-Infrared Raman Gain Measurements in TeO2-based Glasses," C. Rivero, R. Stegeman, M. Couzi, D. Talaga, T. Cardinal, K. Richardson and G. Stegeman, Optics Express, 13 12 (2005)4759-4769
70. "Fabrication and characterization of new Er3+ doped niobium borophosphate glass fiber," L. Petit, T. Cardinal, J.J. Videau, F. Smektala, T. Jouan, K. Richardson and A. Schulte, Materials Science and Engineering, B., 117 (2005) 283-286
69. "Raman gain measurements of thallium-tellurium oxide glasses", R. Stegeman, C. Rivero, K. Richardson, G. Stegeman, P. Delfyett, Y. Guo, A. Pope, A. Schulte, T. Cardinal, P. Thomas, and J-C Champarnaud-Mesjard, Optics Express, 13 4 1144-1149 (2005)
68. Invited, "Non-lithographic Optical Applications, Systems and Materials in the Deep UV," K. Richardson and L. Petit, Proc. of 3rd Symposium on Novel Optical Technologies, Glastech. Ber. Glass Sci. Technol. (2005)
67. "Characterization of the Performance Parameters of Some New Broadband Glasses for Raman Amplification", C. Rivero, K. Richardson, R. Stegeman, G. Stegeman, T. Cardinal, E. Fargin, and M. Couzi, Glass Technology, 46 (2), 80-84 (2005)
66. "Role of S/Se ratio in chemical bonding of As-S-Se glasses investigated by Raman, XPS and EXAFS spectroscopies," W. Li, C. Rivero, A. Pope, S. Myneni, C. Lopez, A. Schulte, K. Richardson, S. Seal, H. Jain, K. Antoine, and A. Miller, J. Appl. Phys. 98, 493-503 (2005)
65. "Impact of CMP Consumables on Copper Metallization Reliability," Y. S. Obeng, J.E. Ramsdell, S. Deshpande, S.C. Kuiry, K. Chamma, K.A. Richardson and S. Seal, IEEE J. of Semiconductor Manufacturing, 18 4 688-694 (2005)

2004

64. "Surface sulphination of germanium oxide based materials," L. Petit, K. Richardson, B. Campbell, G. Orveillon, T. Cardinal, F. Guillen, C. Labrugere, P. Vinatier, M. Couzi, W. Li and S. Seal, Phys. Chem. Glasses, 45 (6) 315–21 (2004)
63. "Femtosecond laser fabrication of tubular waveguides in PMMA," A. Zoubir, C. Lopez, M. Richardson, K. Richardson, Optics Letters, 29 16 1840 (2004)
62. "Direct femtosecond laser writing of optical waveguides in As2S3 thin films," A. Zoubir, M. Richardson, C. Rivero, A. Schulte, C. Lopez, K. Richardson, Optics Letters, 29 7 (2004)
61. "Quantifying Raman Gain Coefficients in Tellurite Glasses," C. Rivero, K. Richardson, R.Stegeman, and G. Stegeman, T.Cardinal, E. Fargin, M. Couzi and V. Rodriguez, J. Non-Cryst. Sols., 345 & 346, 396-401 (2004)
60. Invited "Performance-Surface Characteristics of psiloQuest's Application-Specific Pads (ASP) for Chemical Mechanical Planarization," Y. Obeng, K. Chamma, S. Dakshinamurthy, S. Deshpande, S.C. Kuiry, S. Seal, R. Vaidyananthan, K.A. Richardson, Proc. of the 202nd Electrochemical Society, vol 2003-21 126 (2004)
59. "Impact of CMP Consumables on Copper Metallization reliability," Y. Obeng, J. Ramsdell, K. Chamma, K. Richardson, S. Seal, Proc. of the 202nd Electrochemical Society, vol 2003-21 164 (2004)
58. "Preparation of carbon/carbon composite for transmission electron microscopy by the FIB-

Lift Out technique," H. François Saint Cyr, K. Richardson, J.-M. Vallerot, X. Bourrat, Carbon 49 (2004)

2003

57. "Practical Uses of Femtosecond Laser Micro-materials Processing," A. Zoubir, L. Shah, K. Richardson and M. Richardson, Appl. Phys. A, 77 311-315 (2003)
56. "Diffusion of 18 elements implanted into thermally grown SiO2," H. François-Saint-Cyr, F.A. Stevie, J.M. McKinley, K. Elshot, L. Chow, K.A. Richardson, J. Appl. Phys., 94 12 7433-7439 (2003)
55. "Refractive index measurements of planar chalcogenide thin film," J. M. Laniel, J-M. Ménard, K. Turcotte, A. Villeneuve, R. Vallée, C. Lopez, K. Richardson, J. Non-Cryst. Sols. 328 1-3 183-191 (2003)
54. "Applicability of Dynamic Mechanical Analysis for CMP Polyurethane Pad Studies, H. Lu, Y. Obeng and K.A. Richardson, J. Materials Characterization 49 177-186 (2003)
53. "Effect of oxidation on structure, chemical and optical properties of As2S3 glasses" S. Seal, W. Li, K. A. Richardson, D. Verma, A. Schulte, C. Lopez, A. Graham, C. Rivero, J. Corrosion 59, 139-145, (2003)
52. "Structural Analysis of Chalcogenide Waveguides using Rutherford Backscattering Spectroscopy," C. Rivero, P. Sharek, G. Nootz, C. Lopez, W. Li, K. Richardson, A. Schulte, G. Braunstein, R. Irwin, V. Hamel, K. Turcotte and E. Knystautas, Thin Solid Films, 425 1 59-67 (2003)
51. "Physical and optical properties of sol-gel nano-silver doped silica film on glass substrate as a function of heat-treatment temperature," W. Li, S. Seal, E. Megan, J. Ramsdell, K. Scammon, G. Lelong, L. Lachal, and K. A. Richardson, J. Appl. Phys. 93 12 9553 (2003)
50. "Tellurite Glasses with Peak Absolute Raman Gain Coefficients Up to 30X Fused Silica," R. Stegeman, L. Jankovic, H. Kim, C. Rivero, G. Stegeman, K. Richardson, P. Delfyett, T. Cardinal and A. Schulte, Optics Letters 28 13 (2003)
49. Invited "Photo-induced structural changes in glass," M. Richardson, L. Shah, J. Tawney, A. Zoubir, C. Rivero, C. Lopez, K. Richardson, N. Hô, R. Vallée, Proc. of the 1st International Workshop on Glasses for the Photonics Revolution, Bad Soden Germany, (2003)
48. "Self-focusing During Femtosecond Micromachining of Silicate glasses," L. Shah, J. Tawney, M. Richardson and K. Richardson, IEEE J. Quantum Electronics 40 1 57-68 (2003)
47. "Depth Profiling of Film and Bulk Insulators Using Magnetic Sector SIMS", H.Francois-Saint-Cyr, K.Richardson, F. Stevie, J. McKinley and C. Granger, J. of Nuclear Instrumentation and Methods B, (2003)

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46. "An X-ray Photoelectron spectroscopic investigation of ternary As-S-Se chalcogenide glasses," W. Li, S. Seal, C. Lopez and K.A. Richardson, J. Appl. Phys. 92 12 7102 (2002)
44. "Thermally activated silver diffusion in chalcogenide thin films," J. Fick, C. Wilson, B. Nicolas, C. Rivero, K. Elshot, K. A. Richardson, M. Fischer, R. Vallée, J. Non-Cryst. Sols. 418 215-221 (2002)
43. "Structure and Chemical Studies of As2S3 Glasses used for Waveguide Applications," S. Seal, K. A. Richardson, C. Lopez, A. Graham, D. K. Verma, K. Turcotte, J. M. Laniel, A. Saliminia, T. Galstian and A. Villeneuve, Phys. Chem. Glasses, 43 (1), 59-65 (2002)
42. "Measurements of LGS, LGN and LGT Thermal Coefficients of Expansion and Density,"

D.C. Malocha, H. Francois-St.-Cyr, K.A. Richardson, R.Helmbold, IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control, 49, 350-355 (2002)
41. "Optimization of processing and characterization of bulk chalcogenide glasses used for waveguide applications," C. Lopez, K..A.Richardson, S. Seal, D.K. Verma, A. Graham, A. Villeneuve, T. V.Gastian, K. Turcotte, A. Saliminia, J. Laniel, M. deCastro, A. Schulte, and C. Rivero, J. American. Ceramic Society, 85 (6) 1372-1377 (2002)
40. "Structure-Property Relationships in As-S-Se glasses for waveguide applications probed by Waveguide Raman Spectroscopy, C. Rivero, A. Schulte and K.A. Richardson in Optoelectronic Materials and Technology in the Information Age, Ceramic Transactions, 126 79-85 (2002)
39. "Quantitative Analysis of Physical and Chemical changes in CMP Polyurethane Pad Surfaces," H. Lu, B. Fookes, Y. Obeng, S. Machinski and K.A. Richardson, J. Materials Characterization, 49 35-44, (2002)

2001
38. "Photoinduced Bragg reflectors in As-S-Se/As-S based chalcogenide glass multilayer channel waveguides," A. Saliminia, K. Le Foulgoc, A. Villeneuve, T. Galstian, K. Richardson, J. Fiber and Integrated Optics 20 2 151-158 (2001)
37. "Femtosecond laser processing of glasses and polymers in air," L. Shah, J. Tawney, M. Richardson and K. Richardson, Applied Surface Science, 183 151-164 (2001)
36. "Waveguide writing in chalcogenide glasses by a train of femtosecond laser pulses," O. M. Efimov, L. B. Glebov, K. A. Richardson, E. Van Stryland, T. Cardinal, S. H. Park, M. Couzi, J. L. Brunéel, J. Opt. Materials 17 3 379-386, (2001)
35. "SIMS Characterization of the diffusion properties of 17 elements implanted into Silicon," H. Francois-Saint-Cyr, E. Anoshkina, F. Stevie, L. Chow, K. Richardson, and D. Zhou, J. Vac. Sci. Tech. B 19 5 1769-1772 (2001)
34. "In-situ structural characterization of chalcogenide bulk-film-fiber properties by near-infrared waveguide Raman spectroscopy," A. Schulte, C. Rivero, K. Richardson, K. Turcotte, J. Laniel, V. Hamel, A. Villeneuve, A. Saliminia and T. Galstian, Optics Communications 198 125-128 (2001)

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33. "Temperature dependence of Bragg reflectors in chalcogenide As2S3 glass slab waveguides," A. Saliminia, T. V. Galstian, A. Villeneuve K. LeFoulgoc, and K.A. Richardson, J. Optical Society B, 17 8 1343-1348 (2000)
32. "High photoluminescence in erbium-doped chalcogenide thin films," J. Fick, A. Villeneuve, E. Knystautas, S. Roorda and K. Richardson, J. Non-Cryst. Sols., 272 2-3 200-208 (2000)
31. "An Image Analysis Technique for Assessing Particle Size and Agglomeration Tendency for Slurries," S. Machinski, A. Dogariu and K.A. Richardson, Fundamentals and Materials Issues in Chemical-Mechanical Polishing of Materials, paper E.6.1, vol. 613, Materials Research Society, San Francisco CA (2000)
30. "Dynamic Mechanical Analysis of CMP Pad Materials," I. Li, K. Forsthoefel, K.A. Richardson, Y.S. Obeng, W.G. Easter and A. Maury, Fundamentals and Materials Issues in Chemical-Mechanical Polishing of Materials, paper E7.3, vol. 613, Materials Research Society, San Francisco CA (2000)
29. "Diffusion Properties of Cu in Nanocrystalline Diamond Thin Films, " D. Zhou, F. A. Stevie, E. Anoshkina, H. Francois-Saint-Cyr, K. Richardson, A. Hussain, and L. Chow, Advanced

Metallization ULSI XV Conference, vol. AMC1999, pp 313-317 Materials Research Society, (2000)

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28. "Nonlinear Optical Properties of Chalcogenide Glasses in the System As-S-Se," K.A. Richardson, T. Cardinal, H. Shim, G. Stegeman, A. Schulte, R. Beathy, K. LeFoulgoc, C. Meneghini, J. F. Viens and A. Villeneuve, J. Non-Cryst. Sols. 256 & 257 353 (1999)
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