

**Douglas McGregor**  
**University Distinguished Professor**  
**Director, Semiconductor Materials and Radiological Technologies (SMART) Lab**

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**Professional Affiliations**

Member                    American Nuclear Society  
                                  IEEE Plasma and Nuclear Science Society  
                                  SPIE  
                                  Materials Research Society

**Awards**

- 2015 Boyd D. Brainard Departmental Faculty Chair in Mechanical and Nuclear Engineering
- 2015 University Distinguished Professor
- 2014 R&D (Research and Development) 100 Award; for the invention of the Li-Foil Neutron Detector.
- 2010 WESP Making a Difference Award, Kansas State University
- 2009 R&D (Research and Development) 100 Award; for the invention of the Microstructured Semiconductor Neutron Detector.
- 2008 MNE Graduate Advisor Award, Kansas State University
- 2008 MNE Outstanding Advisor Award, Kansas State University
- 2006 Frankenhoff Engineering Research Excellence Award, Kansas State University
- 2005 R&D (Research and Development) 100 Award; for the invention of the Frisch Collar High-Energy-Resolution Gamma-Ray Spectrometer.
- 1995 Sandia National Laboratories Award for Excellence; for the manufacture of innovative radiation detectors.

**Current Grant Funded Projects**

- Advanced Instrumentation for Transient Reactor Testing, UW (through NEUP), 2014 - 2017.
- Active Neutron Sensor Array, 2014 -2016.
- Extended Electrical Lifetime Electrons for Neutron Detectors, DoD DTRA SBIR, 2014 - 2015.
- High Temperature Micro-Pocket Fission Detectors, INL (through NEUP), 2014 - 2017.
- MSND Arrays for Neutron Scattering, DOE SBIR, 2013 - 2014.
- Neutron Source Identifier, UMKC, 2011 - 2017.
- Wearable Neutron Detectors, DTRA, 2014 -2017
- Microstructured Semiconductor Neutron Detectors, DTRA, 2006 - 2017.

**Recently Grant Funded or Completed Projects**

- Aerogel, Foam, Li-Foil Detectors; Replacement Technologies for He-3 Neutron Detectors, DTRA 2012 - 2015.
- Micro-Pocket Fission Detectors, INL, 2011 - 2014.
- Large Area Panel Array Neutron Detectors, DTRA Grant, 2011 - 2014.
- Li-Filled Ternary Compounds for Neutron Detection, DOE NNSA Grant, 2008 - 2011.
- LaBr<sub>3</sub> as a High Resolution Gamma Ray Spectrometer, DOE NEER Grant, 2007 - 2010.
- Hgl<sub>2</sub> Purification and Crystal Growth for Gamma Ray Spectrometers, DTRA Grant, 2007 - 2010.
- Frisch Collar Gamma Ray Spectrometer Array, BNL through NNSA, 2006 - 2009.
- New Materials for Gamma Ray Spectrometers, NNSA, 2006 - 2009.
- Coated SiC Neutron Detectors, Lockheed-Martin and BAPL, 2005 - 2009.
- Electro-Optic Laser-Sampled Neutron Detector, DOE NEER Grant, 2005-2009.
- High-Efficiency Thin-Film-Coated Semiconductor Neutron Detectors for Active Dosimetry Monitors, DOE NEER Grant, 2004 - 2009.
- [Near-Core and In-Core Neutron Radiation Monitors](#) for Real Time Neutron Flux Monitoring and Reactor Power Level Measurements," [DOE NERI](#) Grant, 2002 – 2009. [report]

- High-Detection-Efficiency and High-Spatial-Resolution Thermal-Neutron Imaging Systems for the Spallation Neutron Source Using Pixelated Semiconductor Detectors, National Science Foundation IMR-MIP Grant, 2004-2009.
- New Materials for Room Temperature Operated Radiation Detectors, DTRA, 2006 - 2008.
- Semiconductor Radiation Detectors with Frisch Collars and Collimators for Gamma Ray Spectroscopy, DOE NEER Grant, 2003-2006. [\[report\]](#)
- Morphologically Optimized Neutron Detectors for Detection, Measurement, and Dosimetry, DTRA, 2003 - 2006.
- Epitaxial GaAs Detectors for Neutron Monitoring, Lawrence Livermore National Laboratory, 2003 - present.
- [Self-Biased Boron-Coated High-Purity Epitaxial GaAs Neutron Detectors](#), DOE SBIR with SPIRE Corporation, 1998 – 2002.
- [Custom Designed Thin-Film Neutron Detectors](#), Argonne National Laboratory, 2000 – present.
- [Horizontal Ampoule Growth and Characterization of Mercuric Iodide at Controlled Gas Pressures for X-ray and Gamma Ray Spectrometers](#), DOE NEER Grant, 2000 – present. [\[report\]](#)
- [CdZnTe Trapezoid Detector Research](#), DOE SBIR with Radiation Safety Engineering, 2000 – 2001.
- [Non-Destructive Spent Fuel Characterization with Semiconducting GaAs Neutron Imaging Arrays](#), DOE NEER Grant 1998 -2001.
- [Custom Designed Schottky Barrier Bulk GaAs Detectors for Neutron Detection](#), Argonne National Laboratories, 1999 – 2000.
- Geometrically Weighted Semiconductor Frisch Grid Detectors, 1998 – 1999.
- BAs Films for Thermal Neutron Detectors, DOE SBIR with SPIRE Corporation, 1998.
- [Large Volume CdZnTe Gamma Ray Spectrometers](#), Department of Energy, 1997 – 1998.

## Patents

- "Method of Fabricating a Neutron Detector such as a Microstructured Semiconductor Neutron Detector," S.L. Bellinger, R.G. Fronk, D.S. McGregor, US-8778715, Allowed July 15, 2014.
- "Improved Efficiency for Gas-Filled Neutron Detectors Through Compartmentalization," D.S. McGregor, S.L. Bellinger, W.J. McNeil, K.A. Nelson, M.F. Ohmes, US-8519350, Allowed August 27, 2013.
- "Non-Streaming High-Efficiency Perforated Semiconductor Neutron Detectors and Method of Making the Same," D.S. McGregor, S.L. Bellinger, W.J. McNeil, E.L. Patterson, B.B. Rice, J.K. Shultis, C.J. Solomon, US-7,855,372; Allowed December 21, 2010.
- "High-Efficiency Neutron Detectors and Methods of Making the Same," D.S. McGregor and R.T. Klann, [US-7,164,138](#); Allowed January 16, 2007.
- "Method and System for Measuring Neutron Emissions and Ionizing Radiation, Solid State Detector for use Therein, and Imaging System and Array of Such Detectors for use Therein," D.S. McGregor, [US-6,921,903](#); Allowed July 26, 2005.
- "Method and System for High-Speed, 3D Imaging of Optically-Invisible Radiation," C.J. Branch-Sullivan, K.J. Kearfott, B. Stojadinovic, and D.S. McGregor, [US-6,815,687](#); Allowed November 9, 2004.
- "Method and System for Detecting Ionizing Radiation," D.S. McGregor and K.J. Kearfott, [US-6,806,474](#); Allowed October 19, 2004.
- "Collimated Radiation Detector Assembly, Array of Collimated Radiation Detectors and Collimated Radiation Detector Module," D.S. McGregor, [US-6,781,132](#); Allowed August 24, 2004.
- "Entertainment Assembly for a Caged Animal," D.S. McGregor and H.K. Gersch, [US-6,736,088](#); Allowed May 18, 2004.
- "Method and System for Determining Depth Distribution of Radiation Emitting Material Located in a Source Medium and Radiation Detector System for use Therein," R.R. Benke, K.J. Kearfott, and D.S. McGregor, [US-6,727,505](#); Allowed April 27, 2004.
- "Radiation Assisted Electron Source," J.C. Engdahl, D.S. McGregor, and R.A. Rojeski, [US-6,570,165](#); Allowed May 27, 2003.
- "Pocked Surface Neutron Detector," D.S. McGregor and R.T. Klann, [US-6,545,281](#); Allowed April 8, 2003.
- "Method and System for Determining Depth Distribution of Radiation Emitting Material Located in a Source Medium and Radiation Detector System for use Therein," R.R. Benke, K.J. Kearfott, and D.S. McGregor, [US-6,528,797](#); Allowed March 4, 2003.

- "Coated Semiconductor Devices for Neutron Detection," R.T. Klann and D.S. McGregor, [US-6,479,826](#); Allowed November 12, 2002.
- "High Resolution Ionization Detectors and Array of Such Detectors," D.S. McGregor and R.A. Rojeski, [US-6,175,120](#); Allowed January 16, 2001.

## Publications

### Contributions to Books:

- D.S. McGregor, "Semiconductor Radiation Detectors," Ch. 48 in Applications of Particle Detectors in Particle Physics, Medicine Astrophysics and Related Fields, I. Buvat and C. Grupen, Eds. (Springer, 2012).
- W. Dunn and D.S. McGregor, "Gamma Ray Spectroscopy," Ch. 38 in Applications of Particle Detectors in Particle Physics, Medicine, Astrophysics and Related Fields, I. Buvat and C. Grupen, Eds. (Springer, 2012).
- D.S. McGregor, "Chapter 8, Detection and Measurement of Radiation," in *Fundamentals of Nuclear Science and Engineering*, 2nd Ed., by J.K. Shultis and R.E. Faw (CRC Press, Boca Raton, 2007).
- D.S. McGregor and J.E. Kammeraad, "Chapter 10, Gallium Arsenide Radiation Detectors and Spectrometers," in *Semiconductors and Semimetals*, Vol. 43, Weber, Willardson and Beer, eds., (Academic Press, San Diego, 1995) pp. 383-442.
- D.S. McGregor, G.F. Knoll, Y. Eisen, and R. Brake, "Fabrication and Evaluation of Room Temperature Operated Radiation Detectors Processed from Undoped LEC Bulk Gallium Arsenide Material," in *GaAs Detectors and Electronics for High Energy Physics*, C. del Papa, P.G. Pelfer, and K. Smith, eds., (World Scientific, Singapore, 1992) pp. 30-43.

### Selected Refereed Publications (from over 100):

- K.A. Nelson, N. Edwards, M.R. Kusner, M.R. Mayhugh, B.W. Montag, A.J. Schmidt, C.D. Wayant, D.S. McGregor, "A Modular Large-Area Li Foil Multi-Wire Proportional Counter Neutron Detector," *Rad. Phys. Chem.*, (2015) in press.
- D.S. McGregor, S.L. Bellinger, R.G. Fronk, L. Henson, D. Huddleston, T. Ochs, J.K. Shultis, T.J. Sobering, T. Taylor, "Development of Compact High Efficiency Microstructured Semiconductor Neutron Detectors," *Rad. Phys. Chem.*, (2015) in press.
- B.W. Montag, M.A. Reichenberger, N. Edwards, P. Ugorowski, M. Sunder, J. Weeks, D.S. McGregor, "Static Sublimation Purification Process and Characterization of LiZnP Semiconductor Material," *J. Crys. Growth*, **419** (2015) pp. 133 -137.
- B.W. Montag, M.A. Reichenberger, M. Sunder, P.B. Ugorowski, K. Nelson, D.S. McGregor, "Bulk Crystal Growth, and High-Resolution X-Ray Diffraction Results of LiZnP Semiconductor Material," *J. Crys. Growth*, **419** (2015) pp. 143 - 148.
- R.G. Fronk, S.L. Bellinger, L.C. Henson, D.E. Huddleston, T.R. Ochs, T.J. Sobering, D.S. McGregor, "High-Efficiency Microstructured Semiconductor Neutron Detectors for Direct <sup>3</sup>He Replacement," *Nucl. Instrum. and Meth.*, **A779** (2015) pp. 25 - 32.
- B.W. Montag, M.A. Reichenberger, N. Edwards, P.B. Ugorowski, M. Sunder, J. Weeks, D.S. McGregor, "Synthesis and Characterization of LiZnP and LiZnAs Semiconductor Material," *J. Crys. Growth.*, **412** (2015) pp. 103 - 108.
- K.A. Nelson, N.S. Edwards, N.J. Hinson, C.D. Wayant, D.S. McGregor, "A Suspended Boron Foil Multi-Wire Proportional Counter Detector," *Nucl. Instrum. and Meth.*, **A767** (2014) pp. 14-18.
- K.A. Nelson, S.L. Bellinger, N.S. Edwards, B.W. Montag, A.J. Schmidt, C. Wayant, D.S. McGregor, "Thermal Neutron Response and Theoretical Comparison of LiF-Coated Aluminized Mylar," *Nucl. Instrum. and Meth.*, **A762** (2014) pp. 130-134.
- K. A. Nelson, M.R. Kusner, B.W. Montag, M.R. Mayhugh, A.J. Schmidt, C.D. Wayant, J.K. Shultis, D.S. McGregor, "[Characterization of a Mid-Sized Li Foil Multi-Wire Proportional Counter Neutron Detector](#)," *Nucl. Instrum. and Meth.*, **A762** (2014) pp. 119-124.
- B.W. Montag, M.A. Reichenberger, K.R. Arpin, K.A. Nelson, P.B. Ugorowski, D.S. McGregor, "[Elemental Analysis and Current-Voltage Characteristics of LiZnP and LiZnAs Samples for Solid-State Neutron Detectors](#)," *MRS Online Proceedings Library*, **1576**, (2013) mrs13-1576-ww08-02 doi:10.1557/opl.2013.1061.
- D.S. McGregor, E. Ariesanti, "[Platelet Growth of Mercuric Iodide](#)," *J. Crys. Growth*, **379** (2013) pp. 7-15.

- T.M. Oakes, S.L. Bellinger, W.H. Miller, E.R. Myers, R.G. Fronk, B.W. Cooper, T.J. Sobering, P.R. Scott, P. Ugorowski, D.S. McGregor, J.K. Shultis, A.N. Caruso, "[An Accurate and Portable Solid State Neutron Rem Meter](#)," Nucl. Instrum. and Meth., **A719** (2013) pp. 6-12.
- S. L. Bellinger, R. G. Fronk, T. J. Sobering, D. S. McGregor, "Characteristics of the Large-Area Stacked Microstructured Semiconductor Neutron Detector," Proc. SPIE - Int. Soc. Opt. Eng., vol. 8373, no. 83730I, pp. 1-10, 2012.
- K.A. Nelson, J.A. Geuther, J.L. Neihart, T.A. Riedel, R.A. Rojas, P.B. Ugorowski, D.S. McGregor, "A Novel Method for Detecting Neutrons Using Low Density High Porosity Aerogel and Saturated Foam," Nucl. Instrum. and Meth., **A686** (2012) pp. 100-105.
- K.A. Nelson, J.A. Geuther, J.L. Neihart, T.A. Riedel, R.A. Rojas, P.B. Ugorowski, D.S. McGregor, "[Nuclear Reactor Pulse Tracing Using a CdZnTe Electro-Optic Radiation Detector](#)," Nucl. Instrum. and Meth., **A680** (2012) 97-102.
- S.L. Bellinger, R.G. Fronk, T.J. Sobering, D.S. McGregor, "Arrayed High Efficiency Dual-Integrated Microstructured Semiconductor Neutron Detectors," Applied Radiation and Isotopes, **70** (2012) pp. 1121 - 1124.
- K.A. Nelson, J.A. Geuther, J.L. Neihart, T.A. Riedel, R.A. Rojas, D.S. McGregor, "Nuclear Reactor Pulse Calibration Using a CdZnTe Electro-Optic Radiation Detector," Applied Radiation and Isotopes, **70** (2012) pp. 1118 - 1120.
- S.L. Bellinger, R.G. Fronk, W.J. McNeil, T.J. Sobering, D.S. McGregor, "Improved High Efficiency Stacked Microstructured Neutron Detectors Backfilled With Nanoparticle  $^6\text{LiF}$ ," IEEE Trans. Nuclear Science, **59** (2012) pp. 167 - 173.
- K.A. Nelson, S.L. Bellinger, B.W. Montag, J.L. Neihart, T.A. Riedel, A.J. Schmidt, D.S. McGregor, "Investigation of a Lithium Foil Multi-Wire Proportional Counter for Potential  $^3\text{He}$  replacement," Nucl. Instrum. and Meth., **A 66**(2012) pp. 79-84.
- S.L. Bellinger, R.G. Fronk, W.J. McNeil, T.J. Sobering, and D.S. McGregor, "Enhanced Variant Designs and Characteristics of the Microstructured Solid-State Neutron Detector," Nucl. Instrum. and Meth., **A 652** (2011) pp. 387-391.
- A. Kargar, E. Ariesanti, D.S. McGregor, "Charge Collection Efficiency Characterization of a  $\text{HgI}_2$  Frisch Collar Spectrometer with Collimated High Energy Gamma Rays," Nucl. Instrum. and Meth., **A 652** (2011) pp. 186 - 192.
- E. Ariesanti, A. Kargar, D.S. McGregor, "Mercuric Iodide Crystal Growth and Frisch Collar Detector Fabrication," Nuclear Technology, **175** (2011) pp. 124-130.
- A. Kargar, E. Ariesanti, D.S. McGregor, "A Comparison Between Spectroscopic Performance of  $\text{HgI}_2$  and  $\text{CdZnTe}$  Frisch Collar Detectors," Nuclear Technology, **175** (2011) pp. 131-137.
- D.S. McGregor, J.K. Shultis, "[Reporting Detection Efficiency for Semiconductor Neutron Detectors; a Need for a Standard](#)," Nucl. Instrum. and Meth., **A632** (2011) pp. 167-174.
- E. Ariesanti, A. Kargar, D.S. McGregor, "Fabrication and Spectroscopy Results of Mercuric Iodide Frisch Collar Detectors," Nucl. Instrum. and Meth., **A 624** (2010) pp. 656-661.
- K.A. Nelson, N. Edwards, M.J. Harrison, A. Kargar, W.J. McNeil, R.A. Rojas and D.S. McGregor, "Investigation of  $\text{CdZnTe}$  and  $\text{LiNbO}_3$  as Electro-Optic Neutron Detectors," Nucl. Instrum. and Meth., **A620** (2010) pp. 363-367.
- A. Kargar, M.J. Harrison, A.C. Brooks and D.S. McGregor, "Characterization of Charge Carrier Collection in a  $\text{CdZnTe}$  Frisch Collar Detector with a Highly Collimated  $^{137}\text{Cs}$  Source," Nucl. Instrum. and Meth., **A620** (2010) pp. 270-278.
- C.J. Solomon, J.K. Shultis, D.S. McGregor, "Reduced Efficiency Variation in Perforated Neutron Detectors with Sinusoidal Trench Design," Nucl. Instrum. and Meth., **A618** (2010) pp. 260-265.
- P. Ugorowski, M. J. Harrison and D. S. McGregor, "Design and Performance of a Compton-Coincidence System for Measuring Non-proportionality in New Scintillators," Nucl. Instrum. and Meth., **A615** (2010) pp. 182-187.
- C.M. Henderson, Q.M. Jahan, W.L. Dunn, J.K. Shultis, D.S. McGregor, "Characterization of Prototype Perforated Semiconductor Neutron Detectors," Radiation Physics and Chemistry, **79** (2010) pp. 144-150.
- S.L. Bellinger, W.J. McNeil, D.S. McGregor, "[Improved Fabrication Technique for Microstructured Solid-State Neutron Detectors](#)," Proc. MRS, Vol. **1164** (2009) pp. L06-01.
- M.J. Harrison, C. Linnick, B. Montag, S. Brinton, M. McCreary, F.P. Doty, D.S. McGregor, "[Scintillation Performance of Aliovalently Doped  \$\text{CeBr}\_3\$](#) ," IEEE Trans. Nucl. Sci., **NS-56** (2009) pp. 1661-1665.

- M.J. Harrison, A. Kargar, A.C. Brooks, K.H. Carpenter, D.S. McGregor, "Improved Techniques for the Fabrication of Frisch Collar CdZnTe Gamma Ray Spectrometers," IEEE Trans. Nucl. Sci., **NS-56** (2009) pp. 1671-1676.
- M. Meier, M.J. Harrison, S. Spalsbury, D.S. McGregor, "Laser Induced Thermomigration of Te Precipitates in CdZnTe Crystals," J. Crystal Growth, **311** (2009) pp. 4247-4250.
- D.S. McGregor, W.J. McNeil, S.L. Bellinger T.C. Unruh, J.K. Shultis, "Microstructured Semiconductor Neutron Detectors," Nucl. Instrum. and Meth., **A608** (2009) pp. 125-131.
- J.K. Shultis and D.S. McGregor, "[Design and Performance Considerations for Perforated Semiconductor Thermal-Neutron Detectors](#)," Nucl. Instrum. and Meth., **A606** (2009) pp. 608-636.
- A. Kargar, A.C. Brooks, M.J. Harrison, K.T. Kohman, R.B. Lowell, R.C. Keyes, H. Chen, G. Bindley, D.S. McGregor, "The Effect of the Dielectric Layer Thickness on Spectral Performance of CdZnTe Gamma Ray Spectrometers," IEEE Trans. Nucl. Sci., **NS-56** (2009) pp. 824-831.
- S.L. Bellinger, W.J. McNeil, T.C. Unruh, D.S. McGregor, "Characteristics of 3D Microstructured Semiconductor High Efficiency Neutron Detectors," IEEE Trans. Nucl. Sci., **NS-56** (2009) pp. 742-746.
- T.C. Unruh, S.L. Bellinger, D.E. Huddleston, W.J. McNeil, E. Patterson, T. Sobering, R.D. Taylor, D.S. McGregor, "Design and Operation of a 2D Thin Film Semiconductor Neutron Detector Array for use as a Beamport Monitor," Nucl. Instrum. and Meth., **A604** (2009) pp. 150-153.
- W.J. McNeil, S.L. Bellinger, T.C. Unruh, C.M. Henderson, P. Ugorowski, B. Morris-Lee, R.D. Taylor, D.S. McGregor, "1-D Array of Perforated Diode Neutron Detectors," Nucl. Instrum. and Meth., **A604** (2009) pp. 127-129.
- D.S. McGregor, S. Bellinger, D. Bruno, W.L. Dunn, W.J. McNeil, E. Patterson, B.B. Rice, J.K. Shultis, T. Unruh, "Perforated Diode Neutron Detector Modules Fabricated from High-Purity-Silicon," Radiation Physics and Chemistry, **78** (2009) pp. 874-881.
- M.J. Harrison, F.P. Doty, D.S. McGregor, "The Fano Factor and Non-Uniformities Affecting Charge Transport in Semiconductors," Phys. Rev. B, **77** (2008) pp. 195-207.
- D.S. McGregor, T.C. Unruh, and M.J. McNeil, "Thermal Neutron Detection with Pyrolytic Boron Nitride," Nucl. Instrum. and Meth., **A591** (2008) pp. 530-533.
- K.C. Mandal, S.H. Kang, M. Choi, A. Kargar, M.J. Harrison, D.S. McGregor, A.E. Bolotnikov, G.A. Carini, G.C. Camarda, R.B. James, "Characterization of Low Defect Cd<sub>0.9</sub>Zn<sub>0.1</sub>Te and CdTe Crystals for High Performance Frisch Collar Detectors," IEEE Trans. Nucl. Sci., **NS-54** (2007) pp. 802-806.
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- A.S.M. Sabbir Ahmed, J.K. Shultis, D.S. McGregor, "Response Functions for Calculating Density Profiles in Fuel Rods Using In-Core Neutron Detectors," Prog. in Nucl. Energy, **49** (2007) pp. 385-396.
- Q. Jahan, E. Patterson, B. Rice, W.L. Dunn and D.S. McGregor, "Neutron Dosimeters Employing High-Efficiency Perforated Semiconductor Detectors," Nuclear Instruments and Methods, **B263** (2007) pp. 183-185.
- M.J. Harrison, A. Kargar, D.S. McGregor, "[Charge Collection Characteristics of Frisch Collar CdZnTe Gamma Ray Spectrometers](#)," Nucl. Instrum. and Meth., **A579** (2006) pp. 134-137.
- M.F. Ohmes, D.S. McGregor, J.K. Shultis, A.S.M.S. Ahmed, R. Ortiz, R.W. Olsen, "[Recent Results and Fabrication of Micro-Pocket Fission Detectors](#)," Proc. SPIE, **6319** (2006) pp. 1P1 - 1P9.
- A. Kargar, A.M. Jones, W.J. McNeil, M.J. Harrison, and D.S. McGregor, "[Angular Response of a W-Collimated Room-Temperature Operated CdZnTe Frisch Collar Spectrometer](#)," Nuclear Instruments and Methods, **A562** (2006) pp. 262-271.
- A. Kargar, A.M. Jones, W.J. McNeil, and D.S. McGregor, "[CdZnTe Frisch Ring Detectors for Low-Energy Gamma Ray Spectroscopy](#)," Nuclear Instruments and Methods, **A558** (2006) pp. 487-503.
- M.J. Harrison, A.P. Graebner, W.J. McNeil, and D.S. McGregor, "[Carbon Coating of Fused Silica Ampoules](#)," Journal of Crystal Growth, **290** (2006) pp. 597-601.
- J.K. Shultis and D.S. McGregor, "[Efficiencies of Coated and Perforated Semiconductor Neutron Detectors](#)," IEEE Transactions on Nuclear Science, **NS-53** (2006) pp. 1659-1665.



- A.E. Bolotnikov, G.S. Camarda, G.A. Carini, M. Fiederle, D.S. McGregor, W. McNeil, G.W. Wright, and R.B. James, "[Performance Characteristics of Frisch-Grid CdZnTe Detectors](#)," IEEE Transactions on Nuclear Science, **NS-53** (2006) pp. 607-614.
- D.S. McGregor, M.F. Ohmes, R.E. Ortiz, A.S.M.S. Ahmed, and J.K. Shultis, "[Micro-Pocket Fission Detectors \(MPFD\) for In-Core Neutron Flux Monitoring](#)," Nuclear Instruments and Methods, **A554** (2005) pp. 494-499.
- D.S. McGregor and J.K. Shultis, "[Response to Hallbeck et al.](#)," Nuclear Instruments and Methods, **A536** (2005) pp.232-234.
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- W.J. McNeil, A.E. Bolotnikov, G.W. Wright, R.B. James, and D.S. McGregor, "[Single Charge Carrier Type Sensing with a Frisch Ring CdZnTe Semiconductor Radiation Detector](#)," Applied Physics Letters, **84** (2004) pp. 1988-1990.
- D.S. McGregor and J.K. Shultis, "[Spectral Identification of Thin-Film-Coated and Solid-Form Semiconductor Neutron Detectors](#)," Nuclear Instruments and Methods, **A517** (2004) 180-188.
- M.F. Ohmes, D.S. McGregor, J.K. Shultis, P.M. Whaley, A.S.M. Sabbir Ahmed, C.C. Bolinger, T.C. Pinsent, "[Development of Micro-Pocket Fission Detectors \(MPFD\) for Near-Core and In-Core Neutron Flux Monitoring](#)," Proc. SPIE, Vol. **5198** (2003) pp. 234-242.
- P.M. De Lurgio, R.T. Klann, C.L. Fink, D.S. McGregor, P. Thiyagarajan, I. Naday, "[A Neutron Detector to Monitor the Intensity of Transmitted Neutrons for Small-Angle Neutron Scattering Instruments](#)," Nuclear Instruments and Methods, **A505** (2003) pp. 46-49.
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