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Birthplace: Lubbock, Texas

I. Education

Ph.D. Materials Science and Engineering, University of Washington, Seattle, Washington; June 15, 1984.

M.S. Chemistry, University of Washington, Seattle, Washington; December 15, 1979.

B.S. Chemistry, Texas Tech University, Lubbock, Texas; June 14, 1977.

II. Professional Development

Research Scientist (Research Scholar), Department of Chemical and Biological Engineering, Princeton University, Princeton, New Jersey; July 1, 1999 to November 30, 2018.

Consultant, Vorbeck Materials Inc. (Jessup, MD), June 3, 2010 to present.

Research Staff Member, Department of Chemical Engineering and Princeton Materials Institute, Princeton University, Princeton, New Jersey; September 1, 1992 to June 30, 1999.

Research Manager and Scientist, Advanced Ceramic Materials Laboratory, Washington Technology Center, University of Washington, Seattle, Washington; September 1, 1987 to August 31, 1992.

Postdoctoral Research Associate, Materials Science and Engineering, University of Washington, Seattle, Washington; February 15, 1986 to August 31, 1987.

Materials Characterization Engineer, Wacker Siltronic Corporation, Portland, Oregon; June 11, 1984 to September 15, 1985.

Graduate Research Assistant, Materials Science and Engineering, University of Washington, Seattle, Washington; January 1, 1980 to May 31, 1984.

Graduate Research Assistant, Chemistry, University of Washington, Seattle, Washington, September 15, 1977 to December 31, 1979.

III. Description of Activities

1. Research Scientist, Chemical and Biological Engineering, Princeton University (current position): applied and basic research into the chemistry of graphene oxide and reduced

graphene oxide applications and properties, energy storage devices, energetic materials and propellants, covalent functionalization of graphene-based materials, tetrazines, piezo- and ferroelectric ceramics, electrets, nanocomposite ceramics, graphene-based materials and devices, mesostructured ceramics, aluminum solubilization and stabilization in aqueous solution, synthesis of inorganic and organic polymers, ceramic templating of liquid crystals and cellulose (wood mineralization), biocomposites, vibrational spectroscopy, UV/Visible spectroscopy, electron microscopy, thermal analysis, rheometry, atomic force microscopy, microlithographic patterning of ceramics, atomic absorption and ICP, and electrooptical ceramics

General duties: proposal and grant administration for research group, research account management, website development and management (Drupal, OpenScholar, Wikipedia), inventory control, chemical supplies and waste management, prepared and submitted invention disclosures and patent applications, and general laboratory supervision of synthesis and characterization facilities in the Engineering Quad (A- and G-Wings, Aksay research laboratories)

Academic: laboratory supervision and instruction of visiting researchers, graduate students and postdoctoral researchers in analytical and synthetic methodologies, supervison of senior and junior research projects, and assisting instruction in "Materials World", a freshman seminar led by Prof. Ilhan Aksay, CBE (fall semesters), designing and implementing laboratory exercises for undergraduate students

2. Assistant to the Director, Associated Institutions of Materials Science (June 1997 to June 1999): state-supported industry/academe consortium of materials research and development agencies; shared facilities management and oversight, report and proposal preparation, account overview
3. Research scientist, Advanced Ceramic Materials Laboratory, Washington Technology Center, University of Washington, Seattle, Washington (September 1, 1987, to August 31, 1992): applied spectroscopy for the processing of ceramics and ceramic matrix composites; chemistry of ceramic precursors; inorganic and organic processing aids; electrooptical properties of ceramics; processing of ceramics using biomimicking
4. Research manager, Advanced Ceramic Materials Laboratory, Washington Technology Center, University of Washington, Seattle, Washington (September 1, 1987, to August 31, 1992): supervised budgetary, editorial, clerical, and research staff (4-5 administrative staff members and up to twenty researchers); prepared and supervised research accounts; prepared proposals and reports to granting agencies; maintained equipment inventory; approved equipment, supplies, and service purchases; established, supervised and administered computer services; prepared and submitted invention disclosures and patent applications
5. Administrative coordinator, Advanced Materials Technology Center Charge Center, Washington Technology Center, University of Washington, Seattle, Washington (December 1, 1990, to August 31, 1992): monitored equipment use and charges for analytical equipment in charge-back center, including high resolution electron microscopes, x-ray diffractometer, UV/Vis and IR spectrometers, rheometry, and thermal analysis; set policies of use and access; maintained service contracts; approved purchases of supplies and upgrades; submitted requests for acquisitions and projected cost reimbursements

IV. Services and Affiliations

Member, American Chemical Society

Member, American Association for the Advancement of Science

Assistant to the Director, Associated Institutions of Materials Science (New Jersey), 1998-1999

Center for Biomaterials and Medical Devices Facilities, September 1996 to 1999

Co-organizer, U.S./Japan Workshop on the ***Processing of Advanced Ceramics***, Seattle, Washington, August 21-24, 1988, with I. A. Aksay and M. Sarikaya.

Co-organizer, Workshop on the ***Design and Processing of Materials by Biomimicking***, Seattle, Washington, April 2-4, 1991, with M. Sarikaya and I. A. Aksay.

Participant, OBES/OIT Research Assistance Task Force Meeting on ***Environmentally Conscious Synthesis, Processing, and Use of Ceramics***; Princeton University, Princeton, New Jersey, May 5-7, 1993, sponsored by the DoE Office of Basic Energy Sciences (OBES), Division of Materials Sciences, and DoE Office of Industrial Technology (OIT), Division of Advanced Industrial Concepts.

Participant, Workshop on ***Basic Research Needs for Vehicles of the Future***; New Orleans, Louisiana, January 5-7, 1995, sponsored by the National Science Foundation and the Department of Energy in partnership with Chrysler, Ford Motor Company, and General Motors.

Participant, Workshop on ***Structural Hierarchy in Materials: Processing and Property Optimization***, Charleston, South Carolina, May 31-June 2, 1995, sponsored by the Army Research Office.

V. Honors and Academic Awards

Associate Member, Sigma Xi

Fellow, Washington Mining and Mineral Resources Research Institute, 1980-84.

Outstanding Teaching Assistant, Chemistry, University of Washington, 1977-78.

Member, Phi Eta Sigma Honor Fraternity, Texas Tech University, 1973-1977.

VI. Publications

Journal and Review Articles

1. "Combined Effects of Functional Groups, Lattice Defects, and Edges in the Infrared Spectra of Graphene Oxide," C. Zhang, D.M. Dabbs, L.-M. Liu, I.A. Aksay, R. Car, A. Selloni, *J. Phys. Chem. C* **119** 18167-18176 (2015).
2. "Functionalization of Graphene Oxide by Tetrazine Derivatives: A Versatile Approach toward Covalent Bridges between Graphene Sheets," Y. Li, V. Alain-Rizzo, L. Galmiche, P. Audebert, F. Miomandre, G. Louarn, M. Bozlar, M.A. Pope, **D. M. Dabbs**, I.A. Aksay, *Chem. Mater.* **27** 4298-4310 (2015).
3. "Enhanced Thermal Decomposition of Nitromethane on Functionalized Graphene Sheets: ab-initio Molecular Dynamics Simulations," L.-M. Liu, R. Car, A. Selloni, **D. M. Dabbs**, I. A. Aksay, R. A. Yetter, *J. Am. Chem. Soc.* **134** [46] 19011-16 (2012).

4. "Multifunctional and Low-Density Inorganic Nanocomposites," **D.M. Dabbs**, I.A. Aksay, *JOM* **64** [2] 226-233 (2012).
5. "Polyoxometalate Clusters Supported on Functionalized Graphene as Nanohybrids for the Catalytic Combustion of Liquid Fuels," J.-P. Tessonnier, F.M. Haas, **D.M. Dabbs**, F.L. Dryer, R.A. Yetter, M.A. Barteau, *MRS Symp. Proc*. **1451**, (2012).
6. "High Surface Area Tapes Produced with Functionalized Graphene," S. Korkut, J. D. Roy-Mayhew, **D. M. Dabbs**, D. L. Milius, I. A. Aksay; *ACS Nano* **5** [6] 5214-22 (2011).
7. "Functionalized Graphene Sheet Colloids for Enhanced Fuel Combustion," J. L. Sabourin, **D. M. Dabbs**, R. A. Yetter, F. L. Dryer, I. A. Aksay, *ACS Nano* **3** 3945-3954 (2009).
8. "Mechanical properties of L_3-templated nanostructured silica," I. A. Aksay, H. Sai, **D. M. Dabbs** *Abstr. Papers Am. Chem. Soc.* **236** (2008).
9. "Mechanical properties of L_3-templated nanostructured silica," H. Sai, **D. M. Dabbs**, I. A. Aksay, *Polymer Preprints* **49** (2) 546-547 (2008).
10. "Non-Peptide Polymeric Silicatein α Mimic for Neutral pH Catalysis in the Formulation of Silica," D. H. Adamson, **D. M. Dabbs**, C. R. Pacheco, M. V. Giotto, D. E. Morse, I. A. Aksay, *Macromolecules* **40** 5710-5717 (2007).
11. "Solvothermal Removal of the Organic Template from L_3 ("Sponge") Templated Silica Monoliths," **D. M. Dabbs**, N. Mulders, I. A. Aksay, *J. Nanoparticle Res*. **8** 603-614 (2006).
12. "The Stability of L_3 Sponge Phase in Acidic Solutions," S. H. Bhansali, A.-S. Malik, J. M. Jarvis, I. Akartuna, **D. M. Dabbs**, J. D. Carbeck, I. A. Aksay, *Langmuir* **22** 4060-4064 (2006).
13. "Silica Monoliths Templated on L_3-Liquid Crystal," A.-S. Malik, **D. M. Dabbs**, H. E. Katz, I. A. Aksay, *Langmuir* **22** 325-31 (2006).
14. "Inhibition of Aluminum Oxyhydroxide Precipitation with Citric Acid," **D. M. Dabbs**, U. Ramachandran, S. Lu, J. Liu, L.-Q. Wang, I. A. Aksay, *Langmuir* **21** 11690-95 (2005).
15. "Non-peptide, Silicatein α inspired silica condensation catalyst," D. H. Adamson, **D. M. Dabbs**, D. E. Morse, I. A. Aksay, *Polym. Mater. Sci. & Eng.* **90** 239-240 (2004).
16. "Disordered mesoporous silicates formed by templation of a liquid crystal (L_3)," A.-S. Malik, **D. M. Dabbs**, I. A. Aksay, H. E. Katz *Solid-State Chemistry of Inorganic Materials III, MRS Symp. Proc.* **658** (MRS, Warrendale, PA 2001).
17. "Sol Gel Coated Glass Cells for Spin-exchange Polarized ^{3}He," M. Hsu, G. D. Cates, and I. Kominis, I. A. Aksay, **D. M. Dabbs**, *J. Appl. Phys*. **77** [13] 2069-71 (2000).
18. "Silica Gels with Tunable Nanopores through Templating of the L_3 Phase," K. M. McGrath, **D. M. Dabbs**, N. Yao, K. J. Edler, I. A. Aksay, and S. M. Gruner, *Langmuir* **16** [2] 398-406 (2000).
19. "Self–Assembled Ceramics Produced by Complex Fluids Templation," **D. M. Dabbs,** I. A. Aksay, *Ann. Rev. Phys. Chem.* **51** 601-22 (2000).
20. "Nanocomposite Mullite/Mullite Powders by Spray Pyrolysis," **D. M. Dabbs**, N. Yao, and I. A. Aksay, *J. Nanoparticle Res.* **1** [1] 127-30 (1999).

21. "Formation of a Silicate L_3 Phase with Continuously Adjustable Pore Sizes," K. M. McGrath, **D. M. Dabbs**, N. Yao, I. A. Aksay, and S. M. Gruner, *Science* **279** [5355] 1289 (27 February 1998).

22. "Metastability of Spinel-type Solid Solutions in the SiO_2-Al_2O_3 System," J. M. McHale, K. Yurekli, **D. M. Dabbs**, A. Navrotsky, S. Sundaresan, and I. A. Aksay, *Chem. Mater*. **9** [12] 3096-100 (1997).

23. "Formation of a Silicate L_3 Phase with Continuously Adjustable Pore Sizes," K. M. McGrath, **D. M. Dabbs**, N. Yao, I. A. Aksay, and S. M. Gruner, *Science* **277** [5323] 552-6 (25 July 1997).

24. "Porphyrin Amphiphiles as Templates for the Nucleation of Calcium Carbonate," J. Lahiri, G. Xu, **D. M. Dabbs**, N. Yao, I. A. Aksay, and J. T. Groves, *J. Am. Chem. Soc*., **119** [23] 5449-50 (1997).

25. "Structure and Transport Properties of a Porous Magnetic Gel via X-ray Tomography," M. D. Rintoul, S. Torquato, C. Yeong, S. Erramilli, D. Keane, **D. M. Dabbs**, I. A. Aksay, *Phys. Rev. E* **54** [3] 2663-69 (1996).

26. "Mullite ($3Al_2O_3 \cdot 2SiO_2$) Synthesis with Aluminosiloxanes," D. R. Treadwell, **D. M. Dabbs**, and I. A. Aksay, *Chem. Mater*. **8** [8] 2056-60 (1996).

27. "Biomimetic Fabrication of Materials–The Minimalist Approach," J. Lahiri, G. Xu, T. Lee, **D. M. Dabbs**, N. Yao, I. A. Aksay, and J. T. Groves, in *Smart Materials Technologies and Biomimetics*, A. Crowson, ed. *Proc. SPIE*, **2716** 317 (1996).

28. "Synthesis and Processing of Nanostructured Ceramics," I. A. Aksay, **D. M. Dabbs**, I. Homma, S. Manne, D. L. Milius, N. Nakagawa, M. Trau, and N. Yao, in *Nano-Sized Powder and Related Composite Materials*, *NEPTIS-IV*, K. Iinoya, Y. Tsuji, K. Niihara, K. Higashitani, and H. Masuda, eds., pp. 49-57 (Nisshin Engineering Co. Ltd., Osaka, Japan, 1995).

29. "Bioinspired Processing of Nanostructured Materials," I. A. Aksay and **D. M. Dabbs**, in *Proc. 8th International Metallurgy and Materials Congress, Istanbul*, S. Tumtas, N. Guresin, and F. Sapci, eds., pp. 775-94 (Chamber of Metallurgical Engrs, Turkey, Publ. 32, 1995).

30. "The Breakup of the Intermediate Gold Aggregates," N. Yao, W. Y. Shih, **D. M. Dabbs**, and I. A. Aksay, in *Proc. Microscopy and Microanalysis*, G. W. Bailey, M. H. Ellisman, R. A. Hennigar, and N. J. Zaluzec, eds., pp. 196-97 (Jones and Begell Pub., 1995).

31. "Nanocomposite Processing via Infiltration of Mesoporous Silica," U. Srinivasan, I. Homma, C. M. Chun, **D. M. Dabbs**, D. A. Hajduk, S. M. Gruner, and I. A. Aksay, in *Proc. Microscopy and Microanalysis*, G. W. Bailey, M. H. Ellisman, R. A. Hennigar, and N. J. Zaluzec, eds., pp. 210-11 (Jones and Begell Pub., 1995).

32. "Bioinspired Processing of Ceramic-Matrix Composites," I. A. Aksay, **D. M. Dabbs**, J. T. Staley, and M. Sarikaya, in *Proc. Int'l Workshop on Ceramic Science and Technology*, ed. M. Özenbas, pp. 51-64 (Middle East Technical University, Ankara, Turkey, 1995).

33. "Processing of Monolithic Magnetic Gels for Magnetophoresis," Y.-N. Jun, **D. M. Dabbs**, I. A. Aksay, and S. Erramilli, *Langmuir* **10** 3377-9 (1994).

34. "Silicification of Wood Cell Walls," S. E. Keckler, **D. M. Dabbs**, N. Yao, and I. A. Aksay, *Proc. 52nd Ann. Mtg. MSA*, pp. 428-9 (Microscopy Society of America, 1994).
35. "Surfactant Mediated Deformation of Gold Particles," **D. M. Dabbs**, N. Yao, and I. A. Aksay, *Proc. 52nd Ann. Mtg. MSA*, pp. 446-7 (Microscopy Society of America, 1994).
36. "Bioinspired Processing of Ceramic-Matrix Composites," I. A. Aksay, **D. M. Dabbs**, J. T. Staley, and M Sarikaya, in *Proc. of the Third Euro-Ceramics, Vol. 1*, edited by P. Duran and J. F. Fernandez, pp. 405-18 (Faenza Editrice Ibérica, San Vicente, Spain, 1993).
37. "Mullite for Structural, Electronic, and Optical Applications," I. A. Aksay, **D. M. Dabbs**, and M. Sarikaya, *J. Am. Ceram. Soc.* **74** [10] 2343-58 (1991).
38. "Infrared Transparent Mullite through Densification of Monolithic Gels at 1250°C," N. Shinohara, **D. M. Dabbs**, and I. A. Aksay, *Infrared and Optical Transmitting Materials*, R. W. Schwartz, ed., *Proc. SPIE* **683** 12-18 (1986).
39. "Preliminary Comments on the Influence of Slag Additives on the Solubility of Arsenic, Bismuth, and Selenium in Slag," S. C. Marschman, **D. M. Dabbs**, L. Fang, and D. C. Lynch, *Metall. Slags Fluxes*, Int. Symp., Proc. 2, H. A. Fine and D. R. Gaskell, eds., pp. 417-25 (Metall. Soc. AIME, Warrendale, PA, 1984).
40. *The Physical Chemistry of Arsenic in Fayalite Slag*, **D. M. Dabbs**, Ph.D. Dissertation, University of Washington, Seattle, WA (1984).
41. "Influence of Al_2O_3 and CaO on the Solubility of As, Bi and Se in Silicate Slag," **D. M. Dabbs**, S. C. Marschman, L. Fang, D. C. Lynch, *J. Metals* **36** (8) 89 (1984).
42. "Re-evaluation of the Activity of Arsenic in Molten Copper," **D. M. Dabbs** and D. C. Lynch, *Metall. Trans. B* **14B** 502 (1983).
43. "Analysis of the Molecular Form of Arsenic in Silicate Slag," **D. M. Dabbs** and D. C. Lynch, *Advances in Sulfide Smelting*, H. Y. Sohn, D. B. George, and A. D. Zunkeyl, eds. (The Metall. Soc. AIME, New York, 1983).
44. "Analysis of Arsenic in Fayalite Slag," **D. M. Dabbs**, D. C. Lynch, *J. Metals* **35** (12) A62-A63 (1982).

Submitted, to be Submitted, or in Preparation

1. "Experimental and Theoretical Investigation of Enhanced Fuel Decomposition in the Presence of Colloidal Functionalized Graphene Sheet-Supported Platinum Nanoparticles," H.-S. Sim, R. A. Yetter, S. Hong, A. C. T. van Duin, **D. M. Dabbs**, I. A. Aksay.
2. "Functionalized Graphene Sheet as a Dispersible Fuel Additive for Catalytic Decomposition of Methylcyclohexane," H.-S. Sim, R. A. Yetter, A. C. T. van Duin, **D. M. Dabbs**, I. A. Aksay.
3. "Role of Graphene Sheet Functionalization on the Colloidal Stability and Combustion of Nitromethane," J. L. Sabourin, L. Liu, **D. M. Dabbs**, A. Selloni, R. Car, R. A. Yetter, F. L. Dryer, I. A. Aksay.
4. "Binding of Monosubstituted Chloro-*s*-Tetrazines on Funtionalized Graphene Sheets," C. Zhang, **D. M. Dabbs**, I. A. Aksay, R. Car, A. Selloni.

5. "Rapid Thermolysis of *s*-Tetrazines Bound to Functionalized Graphene Sheets," J. B. DeLisio, N. Kumbhakarna, **D. M. Dabbs**, I. A. Aksay, R. A. Yetter, M. Zachariah, S. T. Thynell.
6. "Unusual Rapid Decomposition Mechanism in *s*-Tetrazines Bound to Functionalized Graphene Sheets," S. Selcuk, **D. M. Dabbs**, I. A. Aksay, R. Car, A. Selloni.
7. "Mechanical properties of L_3-templated nanostructured silica," H. Sai, **D.M. Dabbs**, I.A. Aksay.
8. "Enhancing the Sensitivity of Sensors using Nanostructured Silica Coatings," R. M. Kozarsky, **D. M. Dabbs**, I. A. Aksay.
9. "On the Breakup of the Intermediate Aggregates during the Growth of Colloidal Gold Particles," **D. M. Dabbs**, W. Y. Shih, N. Yao, I. A. Aksay.
10. "Characterization of Mesoscopic Silica with Microscopic Patterns," L. Zhou, P. Fenter, **D. M. Dabbs**, P. M. Eisenberger, I. A. Aksay.
11. "Fossilization of Wood through the Hydrolysis of Alkoxides," D. R. Treadwell, W. C. Hicks, **D. M. Dabbs**, and I. A. Aksay.
12. "The Channel Structure of Mesoporous Silica Templated on the Disordered L_3 Liquid Crystal," M. F.-H. Sakiestewa-Sze, **D. M. Dabbs**, I. A. Aksay.

Patents and Patent Applications

1. "Batteries Incorporating Graphene Membranes for Extending the Cycle-life of Lithium-ion Batteries," M. A. Pope, V. Alain-Rizzo, J. S. Lettow, I. A. Aksay, **D. M. Dabbs**, Princeton University and Vorbeck Materials Corp. (Jessup, MD); Appl. No. 14/739,184, June 15, 2015; International patent application US2015/035570, 28 January 2016.
2. "Electrohydrodynamically Formed Structures of Cabonaceous Material," I. A. Aksay, V. Alain-Rizzo, D. J. Bozym, **D. M. Dabbs**, N. Szamreta, C. B. Ustundag, Princeton University and Vorbeck Materials Corp. (Jessup, MD); Appl. No. 62/311,477, 22 March 2016.
3. "Electrodes Incorporating Composites of Graphene and Selenium-Sulfur Compounds for Improved Rechargeable Lithium Batteries," M. A. Pope, **D. M. Dabbs**, I. Aksay, Princeton University and Vorbeck Materials Corp. (Jessup, MD); US patent application 2016/0254535, 1 September 2016.
4. "Covalent Functionalization of Graphene and Graphene Oxides by Bridging Molecules," I. A. Aksay, V. Alain-Rizzo, P. Audebert, M. Bozlar, **D. M. Dabbs**, L. Galmiche, Y. Li, F. Miomandre, M. A. Pope, Princeton University and ENS Cachan (France).
5. "Graphene Tapes" S. Korkut (Vorbeck Materials Corp.), D. L. Milius, J. D. Roy-Mayhew, **D. M. Dabbs**, I. A. Aksay, US patent application 2011/0287241, Princeton University and Vorbeck Materials Corp. (Jessup, MD); 24 November 2011.
6. "Catalyzed Combustion of Hydrocarbon Fuels using Dispersed Functionalized Graphene Sheets" J. L. Sabourin (PSU), **D. M. Dabbs**, R. A. Yetter (PSU), F. L. Dryer, I. A. Aksay; Princeton University (2009).

7. "L_3-silica/polyurethane thermally insulating nanocomposite" I. A. Aksay, C. M. Wahl, **D. M. Dabbs**, I. Yilgor; US patent applicaton 2005/0137315 A1, Princeton University, 23 June 2005.
8. "Lyotropic Liquid Crystalline L_3 Phase Silicated Nanoporous Monolithic Composites and Their Production," K. M. McGrath, **D. M. Dabbs**, I. A. Aksay, S. M. Gruner, U.S. Patent #6,638,885 (October 28, 2003).
9. "Sol-Gel Coated Polarization Vessels," G. D. Cates, Jr., I. A. Aksay, W. Happer, M. F. Hsu, and **D. M. Dabbs**, U.S. Patent #6,551,559 (April 22, 2003).
10. "Low Temperature Sintering of Ceramic Materials," M. Hama, **D. M. Dabbs**, and I. A. Aksay, U.S. Patent #5,135,691 (August 4, 1992).

Technical Reports

1. "Smart Functional Nanoenergetic Materials: Graphene as a Reactive Material and Carrier of Energetic Materials" AFOSR Final Report (FA9550-13-1-0004), 9 November 2018; Annual Progress Reports filed each November from 2012 through 2017.
2. "Evolved Gas Analysis for Materials and Propellant Applications," AFOSR/DURIP Final Progress Report (FA9550-16-1-0114), 31 May 2017.
3. "Smart Functional Nanoenergetic Materials," R. A. Yetter (PI), S. T. Thynell, M. R. Zachariah, B. E. Eichhorn, I. A. Aksay, A. Selloni, R. Car, Steve Son, V. Yang, Space Propulsion and Power Program Review, 1 October 2015, Arlington, VA.
4. "Energy-Efficient Hybrid Medium and Heavy Duty Vehicle Power Systems," J. S. Lettow, Q7 Quarterly Progress Report (Grant DE-AR0000319), 15 January 2015; Q8 Report 15 April 2015.
5. "Energy-Efficient Hybrid Medium and Heavy Duty Vehicle Power Systems," J. S. Lettow, Q6 Quarterly Progress Report (Grant DE-AR0000319), 14 October 2014; Q5 Report 14 July 2014; Q4 Report 14 April 2014; Q3 Report 14 January 2014; Q2 Report 14 October 2013; Q1 Report 14 July 2013.
6. "Innovative Design and Processing of Multi-Functional Adaptive Structural Materials," I. A. Aksay, final technical report (Grant number W911NF-09-1-0476), ARO, 15 December 2013.
7. "Electrically Conducting Polymer-Graphene Nanocomposites," I. A. Aksay and F. Miomandre, final technical report, Partner University Fund, the French Embassy to the United States, 20 September 2013.
8. "Innovative Design and Processing of Multi-Functional Adaptive Structural Materials," I. A. Aksay, annual technical report (Grant number W911NF-09-1-0476), ARO, 31 August 2012.
9. "Multifunctional Colloidal Nanocatalysts for Liquid Fuel Combustion," I. A. Aksay, final technical report (Grant number FA9550-09-1-0523), AFOSR/ARRA, 30 March 2012.
10. "Multifunctional Colloidal Nanocatalysts for Liquid Fuel Combustion," I. A. Aksay, annual technical report (Grant number FA9550-09-1-0523), AFOSR/ARRA, 24 July 2011.

11. “NIRT: Graphene Sheets for Use in Nacre-Mimic Layered and Tabular Composites,” I. Aksay, R. K. Prud’homme, D. H. Adamson, R. Car; final technical report (Award 0609049), National Science Foundation, 31 July 2011.
12. “Innovative Design and Processing of Multi-Functional Adaptive Structural Materials,” I. A. Aksay, interim technical report (Grant number W911NF-09-1-0476), ARO, 1 October 2011.
13. “Innovative Design and Processing of Multi-Functional Adaptive Structural Materials,” I. A. Aksay, interim technical report (Grant number W911NF-09-1-0476), ARO, 1 October 2010.
14. “NIRT: Graphene Sheets for Use in Nacre-Mimic Layered and Tabular Composites,” I. Aksay, R. K. Prud’homme, D. H. Adamson, R. Car; interim technical report (Award 0609049), National Science Foundation, 30 September 2010.
15. “Multifunctional Colloidal Nanocatalysts for Liquid Fuel Combustion,” I. A. Aksay, annual technical report (Grant number FA9550-09-1-0523), AFOSR/ARRA, 29 June 2010.
16. “Graphene in Electrical Energy Storage Devices,” I. A. Aksay, final technical report (Grant number W911NF-09-1-0064), DARPA, 5 May 2010.
17. “MURI: Design and Processing of Electret Structures,” I. A. Aksay, G. M. Whitesides; final technical report (Award W911NF-04-1-0170), Army Research Office, 15 December 2009.
18. “NIRT: Graphene Sheets for Use in Nacre-Mimic Layered and Tabular Composites,” I. Aksay, R. K. Prud’homme, D. H. Adamson, R. Car; interim technical reports (Award 0609049), National Science Foundation, 2007-2009 (current).
19. “Modulation of Fibronectin to Improve Integration of Dental Implant Materials,” I. A. Aksay, final technical report (Award HSS SUB 08-10-07), National Institute of Health, 22 July 2009.
20. “Pixelated Matter for Multi-Functional Composites Development,” I. A. Aksay, D. A. Saville, Y. Kevrekidis, G. M. Whitesides; final technical report (Award HR0011-04-1-0053), 6 October 2006.
21. “SMFM: Innovative Design and Processing of Multi-Functional Composites Optimized for Strength and Transport,” I. Aksay, J. D. Carbeck, J. H. Prevost, final technical report (Award MDA972-00-1-0028), 29 December 2005.
22. “Piezoelectric Microcantilevers with Nanoscopic Coatings: A Breakthrough Sensing Technology,” I. A. Aksay, J. Carbeck, W. Y. Shih, W. H. Shih; final technical report (Award NAG2-1475), NASA Ames Research Center, 28 February 2005.
23. “Self-Healing Organic/Inorganic Nanocomposites,” D. H. Adamson, **D. M. Dabbs**, D. E. Morse, I. A. Aksay; final technical report (Award NAG1-01-010), 12 January 2005.
24. “Precipitation and Deposition of Aluminum-Containing Phases in Tank Wastes,” **D. M. Dabbs**, I. A. Aksay; final technical report (Award DE-FG07-98ER14929), 12 January 2005.
25. “US-Turkey Cooperative Research: Study of Micropatterning of Thin Films and Size Effects,” I. A. Aksay, M. Ozenbas (Turkey); final technical report (Award 9810336), National Science Foundation, 7 May 2004.
26. “SGER: Piezoelectric Cantilevers for Nanoscale Sensing,” I. A. Aksay, J. Carbeck; final technical report (Award 0003882), National Science Foundation, 5 June 2003.

27. "Precipitation and Deposition of Aluminum-Containing Phases in Tank Wastes," S. V. Mattigod, D. T. Hobbs, L.-Q. Wang, **D. M. Dabbs**, I. A. Aksay; technical report, OSTI number 834764 (Award DE-FG07-98ER14929), 1 June 2002.
28. "AASERT: Colloidal Processing using Nanosized Particles," I. A. Aksay, **D. M. Dabbs**; final technical report (Award F49620-96-1-0191), 1 May 2001.
29. "AASERT: Biomimetic Processing of Ceramic Composites," I. A. Aksay, **D. M. Dabbs**; final technical report (Award DAAH04-93-G-0098), 2 April 2001.
30. "MURI: Smart Materials Systems through Mesoscale Patterning," I. A. Aksay, S. M. Gruner, P. C. Y. Lee, R. K. Prud'homme, W.-H. Shih, S. Torquato, G. M. Whitesides; final technical report (Award DAAH04-95-1-0102), 1 November 2001.
31. "Nanodesigning of Hierarchical Multifunctional Ceramics," I. A. Aksay, final technical report (Award F49620-93-1-0259), Air Force Office of Scientific Research, 31 July 1996.
32. "Aqueous Injection Molding of Si_3N_4 by Thermal Gelation," G. S. Burpee, H.-L. Ker, J. S. Lettow, D. L. Milius, **D. M. Dabbs**, and I. A. Aksay; final rogress report to Norton/St. Gobain, 17 August 1993.
33. "Consolidation of Colloidally Processed Powder Agglomerates," D. L. Milius, **D. M. Dabbs**, and I. A. Aksay; final progress report to Dow Chemical, 19 July 1993.
34. "Nanodesigning of Hierarchical Multifunctional Ceramics," I. A. Aksay, Principal Investigator; Final Technical Report to the Directorate of Chemistry and Materials Science, AFOSR-91-0040, 28 September 1993.
35. "Nanodesigning of Hierarchical Multifunctional Ceramics," annual technical progress report and final report, Air Force Office of Scientific Research, grant number AFOSR-91-0040, October 1, 1990, through September 30, 1992.
36. "Advanced Ceramic Materials Laboratory," Washington Technology Center, annual progress reports, July 1, 1986, through June 30, 1992.
37. "Advanced Materials Technology Center," Washington Technology Center, annual progress reports, July 1, 1986, through June 30, 1992.
38. "Microdesigning of Ceramics and Ceramic/Polymer Composites," IBM Program reviews, April 23, 1986, through December 31, 1991.
39. "Microdesigning of Lightweight/High Strength Ceramic Materials," annual technical progress reports and final report, Air Force Office of Scientific Research, grant number AFOSR-87-0114, December 1, 1986, through February 28, 1991.
40. "Workshop on the Design and Processing of Materials by Biomimicking," workshop report, Air Force Office of Scientific Research, grant number AFOSR-91-0177, April 2-4, 1991.
41. "Ceraming Cellular Structures," final technical report, Weyerhaeuser, December 31, 1991.
42. "Processing of Ceramics by Biopolymers *and* Ultrastructure-Property Relationships in Biocrystals," combined annual technical progress report, Air Force Office of Scientific Research, grant numbers AFOSR-88-0135 and AFOSR-89-0496, February 1, 1989, through January 31, 1990.

43. "Processing of Ceramics by Biopolymers," annual technical progress report, Air Force Office of Scientific Research, grant number AFOSR-88-0135, February 1, 1988, through January 31, 1989.

Other Reports and Manuscripts

1. "Basic Research Needs for Vehicles of the Future," P. E. Eisenberger, ed. (Princeton Materials Institute, Princeton University, 1995).
2. "Structural Hierarchy in Materials: Processing and Property Optimization," I. A. Aksay and W. C. Simmons, eds. (1995).

VII. Presentations

1. "Combustion of Solid Fuels and Propellants with Reactive Particles: Functionalized Graphene Sheets for Addressable Energetic Materials," S. Selcuk, **D. M. Dabbs** (presenter), A. Selloni, R. Car, I. A. Aksay, M. Rehwoldt, J. B. DeLisio, M.R. Zachariah, Tri-Service Energetic Materials Basic Science Review, 23 August 2017, Arlington, VA.
2. "Propellant Design and Control: MURI12-Smart Functional Nanoenergetic Materials", R. A. Yetter (presenter), 2017 Space Propulsion and Power Program Review, 25 May 2017, Basic Research Innovation and Collaboration Center, Arlington, VA.
3. "Smart Functional Nanoenergetic Materials: Graphene as a Reactive Material and Carrier of Energetic Materials," I. A. Aksay, A. Selloni, R. Car, S. Selcuk, **D. M. Dabbs** (presenter), Tri-Service Energetic Materials Basic Science Review, 17 August 2016, Arlington, VA.
4. "Smart Functional Nanoenergetic Materials," R. A. Yetter (PI), S. T. Thynell, M. R. Zachariah, B. E. Eichhorn, I. A. Aksay, A. Selloni, R. Car, Steve Son, V. Yang, Space Propulsion and Power Program Review, 1 October 2015, Basic Research Innovation and Collaboration Center, Arlington, VA.
5. "Energy-Efficient Hybrid Medium and Heavy Duty Vehicle Power Systems," J. S. Lettow, Department of Energy ARPA-E (Grant DE-AR0000319), 15 April 2015, Jessup, MD.
6. "Smart Functional Nanoenergetic Materials," R. A. Yetter (PI), S. T. Thynell, M. R. Zachariah, B. E. Eichhorn, I. A. Aksay, A. Selloni, R. Car, Steve Son, V. Yang, Space Propulsion and Power Program Review, 18 September 2014, Arlington, VA.
7. "Infrared Spectroscopy of Functionalized Graphene Sheets from First Principle Calculations," C. Zhang, **D.M. Dabbs**, I.A. Aksay, R. Car, A. Selloni, *APS Meeting Abstracts*. Vol. 1. March 2014 (p. 37008).
8. "Smart Functional Nanoenergetic Materials," R. A. Yetter (PI), S. T. Thynell, M. R. Zachariah, B. E. Eichhorn, I. A. Aksay, A. Selloni, R. Car, Steve Son, V. Yang, Space Propulsion and Power Program Review, 17 December 2013, Arlington, VA.
9. "Graphene Oxide Chemistry," C. Zhang, A. Selloni, R. Car, **D. M. Dabbs**, I. A. Aksay, Partner University Fund Review, August 27 and 28, 2013, Princeton, NJ.
10. "Graphene as a Reactive Material and Carrier of Energetic Materials," I. A. Aksay, A. Selloni, R. Car, C. Zhang, **D. M. Dabbs**, N. Kumbhakarna, S. T. Thynell, J. B. DeLisio, M. R. Zachariah, AFOSR MURI Review, August 21, 2013, Arlington, VA.

11. "Graphene as a Reactive Material and Carrier of Energetic Materials," I. A. Aksay, A. Selloni, R. Car, C. Zhang, **D. M. Dabbs**, N. Kumbhakarna, S. T. Thynell, J. B. DeLisio, M. R. Zachariah, Partner University Fund Review, August 27 and 28, 2013, Princeton, NJ.
12. "Smart Functional Nanoenergetic Materials," R. A. Yetter (PI), S. T. Thynell, M. R. Zachariah, B. E. Eichhorn, I. A. Aksay, A. Selloni, R. Car, Steve Son, V. Yang, Space Propulsion and Power Program Review, 13 September 2012, Arlington, VA.
13. "Graphene as a Reactive Material and Carrier of Energetic Materials," I. A. Aksay, A. Selloni, R. Car, **D. M. Dabbs**, AFOSR MURI Review, August 9, 2012, Arlington, VA.
14. "Nanoparticles and the Combustion of Functionalized Graphene Sheets," **D. M. Dabbs** *Nanocatalysts for Combustion*, AFOSR MURI/ARRA Review, December 9-10, 2010, New Haven, Connecticut.
15. "Nanoparticles and the Combustion of Functionalized Graphene Sheets," **D. M. Dabbs** *Nanocatalysts for Combustion*, AFOSR MURI/ARRA Review, December 3-4, 2009, Arlington, Virginia.
16. "Mechanical properties of L_3-templated nanostructured silica," H. Sai, **D.M. Dabbs**, I.A. Aksay, Division of Polymer Chemistry, American Chemical Society, August 17-21, 2008, Philadelphia, Pennsylvania.
17. "Non-peptide, Silicatein α inspired silica condensation catalyst" D. H. Adamson, **D. M. Dabbs**, D. E. Morse, I. A. Aksay, Division of Polymeric Materials: Science and Engineering, 227th ACS National Meeting, March 28-April 1, 2004, Anaheim, California.
18. "Nanoparticle/Polymer Composites" T. Tsakalakos, **D. M. Dabbs**, I. A. Aksay, Advanced Materials via Immiscible Polymer Processing (AMIPP), Program Review, January 15, 2004, Busch Campus, Rutgers University, Piscataway, New Jersey.
19. "Functional Nanocomposites" T. Tsakalakos, I. A. Aksay, R. L. Lehman, T. N. Nosker, J. D. Idol, R. Renfree, J. Lynch, S. Wolbach, M. DaSilva, **D. M. Dabbs**, K. E. Van Ness, NAMIX – 1st International Conference on Nano-Micro Interface: From Basic Science to Commercial Applications in Nano- and Microtechnology, May 26-28, 2003, Hilton Hotel, Berlin, Germany.
20. "On the Synthesis and Properties of Nanocomposites" T. Tsakalakos, J. D. Idol, R. Renfree, R. L. Lehman, T. J. Nosker, I. A. Aksay, **D. M. Dabbs**, K. E. Van Ness, MRS Fall Meeting, November 28 - December 6, 2002, Boston, Massachusetts.
21. "Functional Applications of Nanostructures", T. Tsakalakos, I. A. Aksay, R. L. Lehman, T. N. Nosker, J. D Idol, R. Renfree, **D. M. Dabbs**, K. E. Van Ness, *NATO-Advanced Study Institute, Synthesis, Functional Properties & Applications of Nanostructures*, Heraklion, Crete, Greece, July 26-August 4, 2002.
22. "On the Synthesis and Properties of Nanocomposites" T. Tsakalakos, I. A. Aksay, R. L. Lehman, T. N. Nosker, J. D Idol, R. Renfree, **D. M. Dabbs**, K. E. Van Ness, *NANO2002, Sixth International Conference on Nanostructured Materials*, Orlando, Florida, June 16-21, 2002.
23. "Wood-Ceramic Composites," **D. M. Dabbs**, D. R. Treadwell, and I. A. Aksay, Materials Research Society, Boston, Massachusetts, November 26-30, 2001.

24. "Disordered Mesoporous Silicates formed by Templation of a Liquid Crystal (L_3)," A.-S. Malik, **D. M. Dabbs**, I. A. Aksay, Materials Research Society, Boston, Massachusetts, November 27-30, 2000.
25. "Phase Transition in Alumina/Mullite Composites," **D. M. Dabbs**, N. Yao, and I. A. Aksay, American Ceramic Society Annual Meeting, Indianapolis, Indiana, April 25-28, 1999.
26. "Templating the L_3 'Sponge' Phase with Inorganics," **D. M. Dabbs**, K. M. McGrath, K. J. Edler, N. Yao, S. M. Gruner, and I. A. Aksay, American Ceramic Society Annual Meeting, Indianapolis, Indiana, April 25-28, 1999.
27. "The 'Sponge' Phase (and other mesoporous materials): Synthesis and Characterization," S. M. Gruner, K. J. Edler, **D. M. Dabbs**, E. Hutchins, K. M. McGrath, and I. A. Aksay, ARO/MURI Review, Harvard University, Cambridge, Massachusetts, September 28-29, 1999.
28. "L_3 'Sponge' Phase: Applications," **D. M. Dabbs**, K. J. Edler, K. M. McGrath, N. Yao, S. M. Gruner, and I. A. Aksay, ARO/MURI Review, Harvard University, Cambridge, Massachusetts, September 28-29, 1999.
29. "Templating the L_3 Phase: Mesoporous Ceramics," **D. M. Dabbs**, K. M. McGrath, S. M. Gruner, and I. A. Aksay, 100th Annual Meeting, American Ceramic Society, Cincinnati, Ohio, May 3-6, 1998.
30. "Templating of L_3 Liquid Crystalline Phase with Inorganics," **D. M. Dabbs**, K. M. McGrath, K. J. Edler, N. Yao, S. M. Gruner, I. A. Aksay; 1998 AIChE Annual Meeting, Miami Beach, FL, November 15-20, 1998.
31. "X-Ray Diffraction Study of Patterned Mesoscopic Thin Films," L. Zhou, A. Y. Ku, **D. M. Dabbs**, P. Fenter, P. M. Eisenberger, D. A. Saville, and I. A. Aksay, Materials Research Society Annual Meeting, Boston, Massachusetts, November 30-December 3, 1998.
32. "Formation of a Silicate Sponge Phase," K. M. McGrath, S. M. Gruner, I. A. Aksay, **D. M. Dabbs**, and N. Yao, Materials Research Society National Meeting, San Francisco, California, March 31-April 4, 1997.
33. "Surfactant-Framework Interaction in the Mesoporous Silica Based Materials," K. Kniaz, A. Navrotsky, **D. M. Dabbs**, and I. A. Aksay, Materials Research Society National Meeting, Boston, Massachusetts, December 2-6, 1996.
34. "Mullite-Al_2O_3 Nanocomposites Formed by Exsolution," **D. M. Dabbs**, I. A. Aksay, and N. Yao, 98th Annual Meeting, American Ceramic Society, Indianapolis, Indiana, April 14-17, 1996.
35. "Nanocomposite Processing via Infiltration of Mesoporous Silica," U. Srinivasan, I. Homma, C. M. Chun, **D. M. Dabbs**, D. A. Hajduk, S. M. Gruner, and I. A. Aksay, 53rd Annual Meeting, Microscopy Society of America, 1995.
36. "The Breakup of the Intermediate Gold Aggregates," N. Yao, W. Y. Shih, **D. M. Dabbs**, and I. A. Aksay, 53rd Annual Meeting, Microscopy Society of America, 1995.
37. "The Processing of Nanocomposite Powders Through Solution Chemistry," **D. M. Dabbs**, D. M. Shahid, and I. A. Aksay, 97th Annual Meeting, American Ceramic Society, Cincinnati, Ohio, April 30-May 3, 1995.

38. "Desintering of Nanosized Particles," **D. M. Dabbs**, N. Yao, and I. A. Aksay, 96th Annual Meeting, American Ceramic Society, Indianapolis, Indiana, April 24-28, 1994.
39. "Inorganic/Organic Interactions in Wood," S. E. Keckler, **D. M. Dabbs**, and I. A. Aksay, 96th Annual Meeting, American Ceramic Society, Indianapolis, Indiana, April 24-28, 1994.
40. "Surfactant Mediated Deformation of Gold Particles," **D. M. Dabbs**, N. Yao, and I. A. Aksay, 52nd Annual Meeting, Microscopy Society of America, New Orleans. Louisiana, July 31 to August 5, 1994.
41. "Silicification of Wood-cell Walls," S. E. Keckler, **D. M. Dabbs**, N. Yao, and I. A. Aksay, 52nd Annual Meeting, Microscopy Society of America, New Orleans. Louisiana, July 31 to August 5, 1994.
42. "Surfactant Mediated Deformation in Aggregates of Nanoscale Gold Particles," **D. M. Dabbs**, W. Y. Shih, N. Yao, and I. A. Aksay, Poster Session, Materials Research Fair, Princeton Materials Institute, Princeton University, Princeton, New Jersey, November 21, 1994.
43. "Nanostructured "Wagon-Wheel" Texture in Sol-Gel Silica Through Co-Assembly with Organics," N. Yao, **D. M. Dabbs**, M. D. McGehee, S. M. Gruner, C. M. Chun, A. Navrotsky, and I. A. Aksay, poster presentation, 96th Annual Meeting, American Ceramic Society, Indianapolis, Indiana, April 24-28, 1994.
44. "PEEK/Low Melt Phosphate Glass Composite," J.-F. Hwang, D. R. Treadwell, D. D. Bidinger, **D. M. Dabbs**, M. Sarikaya, and I. A. Aksay, 95th Annual Meeting, American Ceramic Society, Cincinnati, Ohio, April 18-22, 1993.
45. "Ceramic Wood Composites," D. R. Treadwell, W. C. Hicks, **D. M. Dabbs**, and I. A. Aksay, 95th Annual Meeting, American Ceramic Society, Cincinnati, Ohio, April 18-22, 1993.
46. "Evolution of Mullite from Inorganic Polymers," D. R. Treadwell, **D. M. Dabbs**, J. J. Lannutti, and I. A. Aksay, 43rd Pacific Coast Regional Meeting, American Ceramic Society, Seattle, Washington, October 25-27, 1990.
47. "The Role of Nanometer Scale Heterogeneities on IR Characteristics of Ceramics," I. A. Aksay, **D. M. Dabbs**, and D. R. Treadwell, SPIE 1990 International Symposium, "Optical and Optoelectronic Applied Science and Engineering (Sol Gel Optics)," San Diego, CA, July 10-11, 1990.
48. "On-line Process Control in Mullite Formation through IR Characterization," with N. Shinohara, T. Yogo, M. Sarikaya, and I. A. Aksay, The First International Workshop on Mullite, November 9-10, 1987, Tokyo, Japan.
49. "FTIR Characterization of Mullite-Forming Gels," **D. M. Dabbs** and I. A. Aksay, The 39th Pacific Coast Regional Meeting of the American Ceramic Society, October 22-24, 1986, Seattle, Washington.
50. "Low Temperature Sintering of Al_2O_3 by Inorganic Polymer Infiltration," M. Hama, **D. M. Dabbs**, and I. A. Aksay, The 39th Annual Pacific Coast Regional Meeting of the American Ceramic Society, October 22-24, 1986, Seattle, Washington.

51. "Analysis of Arsenic in Fayalite Slag," **D. M. Dabbs** and D. C. Lynch, TMS/AIME 112th Annual Meeting, Atlanta, Georgia; March, 1983.
52. "Analysis of the Form and Activity of Arsenic and Bismuth in Slag," S. C. Marschman, **D. M. Dabbs**, and D. C. Lynch, TMS/AIME 111th Annual Meeting, Dallas, Texas; April, 1982.

VIII. Funded Proposals

Proposals funded with D. M. Dabbs as Principal Investigator.

1. "Precipitation and Deposition of Aluminum-Containing Phases in Tank Wastes," Department of Energy/EMSP grant #DE-FG07-98ER14929; $210,000 September 15, 1998 – September 14, 2001.
2. "Acquisition of Vibrational Spectroscopy Facility for Materials Science," submitted to Army Research Office/DURIP; instrumentation award for $132,500 March 31, 1999 – December 31, 2002 (August 1998).
3. "Precipitation and Deposition of Aluminum-Containing Phases in Tank Wastes," from DOE/EMSP. Renewal, $215,000 for the period October 1, 2001 to September 30, 2004.
4. "Precipitation and Deposition of Aluminum-Containing Phases in Tank Wastes," from DOE/EMSP. Renewal, $220,000 for the period January 15, 2005 to January 14, 2008.

Participation in Other Funded Proposals

Unless otherwise noted, the Principal Investigator on the following proposals was Prof. Ilhan A. Aksay.

1. "Advanced Ceramic Materials," Washington Technology Center; 1987-1989, 1989-1991, and 1991-1993 biennia funding requests; $1,323,334, July 1, 1987, through June 30, 1993.
2. "Microdesigning of Lightweight/High Strength Ceramics," Air Force Office of Scientific Research; renewal proposals, 1987-1990; $1,498,019, December 1, 1987, through February 28, 1991.
3. "Processing, Fabrication, and Characterization of High Temperature Superconducting Ceramics," Boeing Aerospace Company and Defense Advanced Research Project Agency; $1,184,000, September 30, 1988, through December 31, 1992.
4. "Feasibility Studies on Advanced Ceramics," Trinus Partners; $10,000, January 1, 1988, through February 29, 1988.
5. "U.S./Japan Workshop on the Processing of Advanced Ceramics," Army Research Office; $27,000, August 8, 1988, through August 7, 1989.
6. "Molecular Graphic/Modeling Workstations," Battelle, Pacific Northwest Laboratory; $75,000, October 20, 1988, through September 29, 1989.
7. "Ceraming Cellular Structures," Weyerhaeuser; $40,000, June 1, 1990, through February 28, 1991.
8. "Nanodesigning of Hierarchical Multifunctional Ceramics," Air Force Office of Scientific Research; $615,000, October 1, 1990, through September 30, 1992.

9. "Layered Nanocomposites by Biomimetic Processing" to Case Western Reserve University as a subcontract of an ARO/URI grant. Third year renewal, $100,000 for the period from July 1, 1994 to June 30, 1995.
10. "Nanodesigning of Hierarchical Multifunctional Ceramics" to AFOSR. Third year renewal, $360,000 for the period from October 1, 1994 to September 31, 1995.
11. "Bioinspired Processing of Composites" to NSF as an IRG proposal (I. A. Aksay and seven other participants). Requested $3,847,962 for the period July 1, 1994 to June 30, 1999; $295,000 for 1995 awarded.
12. "Smart Materials Systems through Mesoscale Patterning," to ARO/MURI (I. A. Aksay, S. M. Gruner, P. C. Y. Lee, R. K. Prud'homme W.-H. Shih, S. Torquato, and G. M. Whitesides). Awarded $5,000,000 for the period from December 15, 1994 to December 14, 1999.
13. "Acquisition of the Gatan Image Filter System and an Environmental Cell for an Existing Philips CM-100 FEG-TEM" to the AFOSR/DURIP (with I. A. Aksay with N. Yao). $305,165 August 1, 1996 – January 31, 1998.
14. "Acquisition of Laminated Object Manufacturing System for Fabricating Smart Ceramic Materials," to the ARO/DURIP (with I. A. Aksay). Awarded $175,000 March 2, 1998 – December 31, 2001.
15. "Improved Orthopædic Implant Design and Fabrication," to Johnson & Johnson Corporate Biomaterials Center (I. A. Aksay and R. K. Prud'homme). Awarded $200,000 January 1 – December 31, 1998.
16. "Precipitation and Deposition of Aluminum Containing Phases in Tank Wastes," D. M. Dabbs principal investigator, to DOE/EMSP (subcontractor to PNNL). Awarded $210,000 September 1, 1998 – August 31, 2001.
17. "Designer Nanoporous Inorganics through Templating of L_3 Liquid Crystalline Phase," Lucent Technologies. Awarded $100,000 July 1, 1999-June 30, 2001.
18. "Chemical Energy Conversion and Power Generation at the Microelectronical Systems Scale (MEMS)," Lord Corporation (I. A. Aksay and F. L. Dryer). Awarded $40,000 for the period 07/01/99-6/30/00.
19. "New Jersey Center for Biomaterials and Medical Devices," New Jersey Commission on Science and Technology (NJCST). Awarded $50,000 for the period 02/01/99-01/31/00.
20. "Chemical Energy Conversion and Power Generation at the Microelectronical Systems Scale (MEMS)," DynCorp/ARO (I. A. Aksay and F. L. Dryer). Awarded $200,000 for the period 10/01/99-09/30/00.
21. "Colloidal Processing of Ceramics through Electrohydrodynamic Deposition (EHD)," NASA (pending) (I. A. Aksay and D. A. Saville). Requested $460,858 for the period 10/01/99-09/30/03.
22. "Design and Processing of Bioinspired Laminated Organic/Inorganic Composites," NASA. Requested $756,706 for the period 06/01/99-05/31/02.

23. "Self Healing Organic/Inorganic Nanocomposites," from NASA/Langley Research Center (with D.H. Adamson, Ilhan A. Aksay, Princeton University; in collaboration with D.E. Morse, UCSB). ($375,000 for the period January 1, 2001 to December 31, 2003.)
24. "Advanced Functional and Structural Materials from Immiscible Polymer Blends," Sub-contract with Rutgers University to the New Jersey Commission on Science and Technology ($200,000 for the period October 1, 2001 to September 30, 2006.)
25. "Bioinspired Design and Processing of Multifunctional Nanocomposites," BIMat NASA/URETI (Ilhan A. Aksay, Princeton University, Edward Samulski, USC-Chapel Hill; Daniel Morse, UC-Santa Barbara; Rodney Ruoff, Northwestern University (co-PI's)). ($15,000,000 for the period August 19, 2002 to August 18, 2007.)
26. Directed Technologies Inc., Arlington, Virginia "*Pixelated Hydrogen Sources*" ($125,000 for the period December 1 – December 31 2003).
27. "Design and Processing of Electret Structures," to ARO/MURI (with George Whitesides, Harvard University (PI). (Total requested $5,000,000 for the period April 1, 2004 to March 31, 2009.)
28. "Fundamental Studies on Interfacial Charge Development and Transport in Graphene-based Ultracapacitors," from PNNL ($100,000 for the period April 1, 2008 to March 31, 2009 and $150,000 for the period of July 1, 2009 to June 30, 2010).
29. "Multifunctional Nanocomposites for Aerospace Applications," from NASA Langley Research Center ($50,000 for the period June 1, 2008 to May 31, 2009).
30. "Multifunctional Colloidal Nanocatalysts for Liquid Fuel Combustion," to AFOSR-ARRA. ONR - Topic #12 ($2,916,000 for the period July 1, 2009 to June 30, 2011).
31. "Innovative Design and Processing of Multi-Functional Adaptive Structural Materials," to ARO MURI - Topic #26 ($6,250,000 for the period September 1, 2009 to August 31, 2014).
32. "Electrically Conducting Polymer-Graphene Nanocomposites," to the Partner University Fund, French Embassy to the United States (collaboration with Ecole Normale Supérieure de Cachan, France) ($240,000 for the period 15 March 2010 to 14 March 2013).
33. "Low-Cost, Fast-Charging Batteries for Hybrid Vehicles," subaward through Vorbeck Materials, this project's primary sponsor is the Department of Energy's Advanced Research Projects Agency – Energy (ARPA-E) ($250,000 for the period 4 March 2013 to 5 March 2015).
34. "Smart Functional Nanoenergetic Materials," to AFOSR, R.A. Yetter (PennState), PI. ($1,424,999 for 36 mos. beginning 1 October 2012 plus $950,000 for 24 mos. beginning 1 October 2015)(no-cost extension through October 2018).
35. "Acquisition of an Advanced Thermal and Evolved Gas Analysis System for Materials and Propellant Applications" to DoD Defense University Research Instrumentation Program (DURIP)($73,275; 10 March 2016).

IX. Services

University

1. Safety Committee, Chemical and Biological Engineering, September 2010 to present.

2. Center for Biomaterials and Medical Devices Facilities, September 1996 to June 1999.
3. Fire Safety Officer, Princeton Materials Institute, September 1994 to December 1996.
4. Materials Analysis Cost Center Operations Committee, Department of Materials Science and Engineering, University of Washington, September 1, 1990, to September 1, 1992.
5. Technical Services Committee, Department of Materials Science and Engineering, University of Washington, September 1, 1989, to September 1, 1992.
6. Computer Services Committee, Department of Materials Science and Engineering, University of Washington, September 29, 1989, to September 1, 1992.
7. Administrative Committee, Department of Materials Science and Engineering, University of Washington, January 2, 1989, to June 30, 1990.

Community

1. Parent Volunteer, Riverside Elementary School, Princeton, New Jersey 1993-97 (with Joni M. Dabbs) (Outdoor science laboratory, gardening, built grow box and garden shed, compost bin, general garden maintenance, made and mounted plant identification placards).
2. Science Volunteer, Princeton Public Schools, Princeton, New Jersey 1994-2003 (assist with teacher questions on science matters and demonstration projects).
3. K-12 Outreach project, MRSEC/Princeton Center for Complex Materials 1996-1999 (module review and teacher education, use of module materials, editing of text materials, supplemental instruction and materials).
4. Scoutmaster 2001-2005; Assistant Scoutmaster, 1999-2001 and 2005-2011; Troop 88, Boy Scouts of America, Princeton, New Jersey (Mercer Area District, Central New Jersey Council).
5. Education Consultant 2003 to present, Project SPLASH (Student Participation in Learning Aquatic Science and History) (Delaware River Steamboat Floating Classroom) www.Steamboatclassroom.Org.