

Curriculum Vitae

THOMAS G. THUNDAT

Professor, Dept. Chemical and Biological Engineering
University of Buffalo

DEMOGRAPHIC AND PERSONAL INFORMATION

Current Appointments

University

- 2017 - present Professor, Chemical and Biological Engineering, University of Buffalo
- 2010 - present Professor, Chemical and Biological Engineering, University of Alberta (LOA)
- 2016 - present Thousand Talent Professorship (foreigners), Shanghai Jiao Tong University
- 2013 - present Centenary Chair Professor, visiting, Indian Institute of Science, Bangalore, India
- 2009 - present Distinguished Professor (honorary), Indian Institute of Technology, Madras

Personal Data

Education and Trainin

- Ph. D., Physics, 1987, State University of New York at Albany
- M. Sc., Physics (First Class), 1980, Indian Institute of Technology, Madras, India
- B. Sc., Physics (major), Chemistry and Mathematics (minors), (First Class) 1978, University of Kerala, India
- Post-doctoral (scanning probe microscopy): 1987-1990 Arizona State University

Past Professional Experience (in reverse chronological order):

- 2010 - 2017 Canada Excellence Research Chair (CERC) Professor, University of Alberta
- 2012 - 2017 Fellow, National Institute of Nanotechnology (NRC, Canada)
- 2014 - 2016 Associate Director, India-Canada Center of Excellence (IC-IMPACTS)
- 2005 - 2010 UT-Battelle Corporate Fellow, Oak Ridge National Laboratory (ORNL)
- 2002 - 2005 Distinguished Scientist, ORNL
- 2001 - 2010 Research Professor/Joint Faculty, University of Tennessee, Knoxville, TN
- 1998 - 2002 Senior Scientist, ORNL
- 1998 - 2010 Group Leader, Nanoscale Science and Devices Group, ORNL
- 1996 - 2010 Visiting Professor, University of Burgundy, Dijon, France
- 1992 - 1998 Research Staff Member, ORNL
- 1983 - 1984 Graduate Research Intern, Bell Labs, Murray Hill, NJ

Professional Society Fellowships:

- Fellow, American Institute for Medical and Biological Engineering (AIMBE)(2017)
- Fellow, National Academy of Inventors (NAI)(2014)
- Fellow, Society for Optics and Photonics Engineers (SPIE) (2012)
- Fellow, American Society of Mechanical Engineers (ASME) (2010)
- Fellow, Electrochemical Society (ECS) (2008)
- Fellow, American Association for Advancement of Science (AAAS) (2006)
- Fellow, American Physical Society (APS) (2002)

Honors and Awards:

- 2013 State University of New York, Albany, Distinguished Alumni Award
- 2010 R&D100 Award (Mode Synthesizing AFM)
- 2010 Outstanding Achievement Award, ECS Sensor Division
- 2007 Nano 50 Award
- 2007 Southeastern Federal Laboratory Consortium (FLC) Award, Honorable Mention
- 2006 UT - Battelle Significant Event Award
- 2005 National FLC Award
- 2004 Jesse Beams Award (Southeastern American Physical Society)
- 2004 Scientific American 50 Award
- 2004 Pioneer Awards, American Society of Mechanical Engineers (ASME)
- 2004 R&D 100 Award (explosive vapor sensor)
- 2004 National Federal Laboratory Consortium Award
- 2004 Distinguished Alumni Award, IIT Madras
- 2004 Life Sciences Division, Excellence in Research Award
- 2003 ORNL Inventor of the Year (Molecular comb)
- 2003 Southeastern Federal Laboratory Consortium Award
- 2003 Battelle Distinguished Inventor
- 2002 New York Kerala Center, Outstanding Accomplishments in Applied Sciences Award
- 2001 National Federal Laboratory Consortium Award
- 2000 Discover Magazine Award
- 2000 ORNL Inventor of the Year (cantilever sensors)
- 2000 UT - Battelle Technical Achievement Award for publication
- 2000 UT - Battelle Technical Achievement Award for Invention
- 1998 Lockheed Martin R&D Accomplishment Award
- 1997 ASME Emerging Technology Award
- 1997 Lockheed Martin R&D Accomplishment Award
- 1997 Lockheed Martin Publication Award
- 1996 U.S. Department of Energy Young Scientist Award
- 1996 R&D 100 Award (Cantilever IR sensors and Hg sensors)
- 1996 Lockheed Martin Publication Award
- 1996 Lockheed Martin Inventor's Award
- 1995 Health & Safety Research Division Excellence in Research Award
- 1994 Martin-Marietta Energy Systems Significant Event Award
- 1982 Outstanding Teaching Assistant Award, State University of New York
- 1978 National Merit Scholarship (India)

RESEARCH ACTIVITIES

My rgroup's research activities are focused on understanding and manipulating nanomechanical effects at interfaces and using that knowledge for the development of high performance sensors, devices, and materials, for applications in health, environment, and energy. These interdisciplinary research efforts cover from basic research to design and development of complete systems. We have used molecular adsorption-induced stress as well as mass loading effects as the basis for developing microfabricated sensors. Although microfabricated cantilever sensors have extremely high sensitivity, they have very poor selectivity. To overcome this challenge we have used molecular engineering of immobilized interfaces to obtain chemical and biological selectivity. Although molecular engineering interfaces is very attractive, it suffers from reproducibility issues. To overcome this challenge we have developed a technique of nanomechanical spectroscopy where the adsorbed molecules are modulated with infrared

radiation and monitoring the resultant mechanical effects for molecular selectivity. Development of miniature sensors for applications turned out to be a challenge due to the large size of the batteries. To overcome this challenge we have pioneered new concept of transferring electrical power through a single wire. These reach activities of the last twenty-five years or so have resulted over 40 issued US patents, and over 400 refereed publications with total citation of over 12,000.

Significant Career Accomplishments:

- Pioneered the development of single wire (single contact) electricity transmission concept (2010)
- Developed hyphenated sensor concepts of combining electrical, optical, and mechanical resonances (2000)
- Pioneered the development of a novel class of physical, chemical, and biological sensors based on adsorption-induced force (1991)
- Developed and patented micromechanical infrared detection, imaging technique including mechanical IR spectroscopy (1995)

Total number of referred publications: 402

Total number of conference proceedings: 58

Total Book chapters: 16

Total number of patents: 40

Total number of citations: 12,886 (web of science)

Average citation/item: 27.8

U.S. Patents Awarded (40 Issued 5 pending):

1. A. Passian, T.G. Thundat, and L. Tetard, "Mode synthesizing atomic force microscopy and mode-synthesizing sensing", US Patent #8,789,211 B2 (2014)
2. A. Passian, T.G. Thundat, and L. Tetard, "Mode synthesizing atomic force microscopy and mode-synthesizing sensing", US Patent #8,448,261 B2 (2013)
3. T.G. Thundat, L.R. Senesac and C. Van Neste, "Acoustic enhancement for photo detecting devices", U.S. Patent #8,378,286 B2 (2013)
4. T.G. Thundat, C. Van Neste, G. Brown and L. Senesac, "Photoacoustic microcantilever", U.S. Patent #8,194,246 B2 (2012)
5. T.G. Thundat, C.W. Van Neste and A.A. Vass, "External split field generator", U.S. Patent # 8,120,225 B2 (2012)
6. T.G. Thundat, T.L. Ferrell and G.M. Brown, "Photoelectrochemical molecular comb", U.S. Patent # 8,110,082 B2 (2012)
7. T.G. Thundat, C.W. Van Neste and A.A. Vass, "Internal split field generator", U.S. Patent # 8,089,188 (2012)
8. C.W. Van Neste, M.E. Morales-Rodriguez, L.R. Senesac and T.G. Thundat, "Standoff spectroscopy using a conditioned target", U.S. Patent # 8,080,796 (2011)
9. Y. Dechang, L.R. Senesac and T.G. Thundat, "Sensor for detecting and differentiating chemical analytes", U.S. Patent # 7,972,865 (2011)
10. C. Van Neste, L.R. Senesac and T.G. Thundat, "Photoacoustic point spectroscopy", U.S. Patent # 7,961,313 (2011)
11. T.G. Thundat, A. Passian and R.H. Farahi, "Microscale fluid transport using optically controlled Marangoni effect", U.S. Patent # 7,939,811 (2011)

12. C. Van Neste, L.R. Senesac and T.G. Thundat, "Reverse photoacoustic standoff spectroscopy", U.S. Patent # 7,924,423 (2011)
13. T.G. Thundat and G. M. Brown, "Electrochemical sensor having suspended element counter electrode and deflection method for current sensing", U.S. Patent # 7,716,965 (2010)
14. M. Su, T.G. Thundat and D. Hedden, "Method and apparatus for remote sensing of molecular species at nanoscale utilizing a reverse photoacoustic effect", U.S. Patent # 7,665,364 (2010)
15. V.I. Boiadjiev, G.M. Brown, L. Pinnaduwege, T.G. Thundat, P.V. Bonnesen and G. Goretzki, "Method for making gold thiolate and photochemically functionalizing microcantilevers", U.S. Patent # 7,579,052 (2009)
16. T.G. Thundat and R.J. Warmack, "Surface wave chemical detector using optical radiation", U.S. Patent # 7,243,548 (2007)
17. T.G. Thundat, T.L. Ferrell and G.M. Brown, "Photo-electrochemical molecular comb", U.S. Patent # 7,211,181 (2007)
18. L.A. Pinnaduwege, T.G. Thundat, G.M. Brown, J.E. Hawk and V.I. Boiadjiev, "Chemically functionalized microcantilevers for detection of chemical, biological, and explosive material", U.S. Patent # 7,207,206 (2007)
19. B.M. Evans, T.G. Thundat, R.D. Komistek, D.A. Dennis and M. Mahfouz, "In-vivo orthopedic implant diagnostic device for sensing load, wear, and infection", U.S. Patent # 7,097,662 (2006)
20. T.G. Thundat, T.L. Ferrell and G.M. Brown, "Photo-electrochemical molecular comb", U.S. Patent # 7,090,757 (2006)
21. J.W. Lee and T.G. Thundat, "Separation and counting of single molecules through nanofluidics, programmable electrophoresis, and nanoelectrode-gated tunneling and dielectric detection", U.S. Patent # 7,033,476 (2006)
22. J.W. Lee and T.G. Thundat, "DNA and RNA sequencing by nanoscale reading through programmable electrophoresis and nanoelectrode-gated tunneling and dielectric detection", U.S. Patent # 6,905,586 (2005)
23. T.L. Ferrell and T.G. Thundat, "Spectrometry and filtering with high rejection of stray light", U.S. Patent # 6,831,747 (2004)
24. T.G. Thundat, T.L. Ferrell, K.M. Hansen, F. Tian, "High Throughput Microcantilever Detector", U.S. Patent # 6,763,705 (2004)
25. M.J. Doktycz, C.L. Britton, S.F. Smith, P.I. Oden, W. Bryan, J.A. Moore, T.G. Thundat and R.J. Warmack, "Micro-machined calorimetric sensors", U.S. Patent # 6,436,346 (2002)
26. T.G. Thundat and E.A. Wachter, "Piezoelectrically tunable resonance frequency beam utilizing a stress sensitive film", U.S. Patent # 6,336,366 (2002)
27. J.K. Davis, T.G. Thundat and E.A. Wachter, "Magnetically tunable resonance frequency beam utilizing a stress-sensitive film", U.S. Patent # 6,311,557 (2001)
28. T.G. Thundat, P.I. Oden, R.J. Warmack and E.L. Finot, "Micromechanical transient sensor for measuring viscosity and density", U.S. Patent # 6,311,549 (2001)
29. T.G. Thundat, K.B. Jacobson, M.J. Doktycz, S. J. Kennel and R.J. Warmack, "Micromechanical antibody sensor", U.S. Patent # 6,289,717 (2001)
30. T.G. Thundat, E.A. Wachter and J.K. Davis, "Electrostatically tunable resonance frequency beam utilizing a stress-sensitive film", U.S. Patent # 6,263,736 (2001)
31. T.G. Thundat, "Uncoated microcantilevers as chemical sensors", U.S. Patent # 6,212,939 (2001)

32. C.L. Britton, R.J. Warmack, W.L. Bryan, R. L. Jones, P.I. Oden and T.G. Thundat, "Capacitively readout multi-element sensor array with common-mode cancellation", U. S. Patent # 6,167,748 (2001)
33. T.G. Thundat, R.J. Warmack and E.A. Wachter, "Electromagnetic and nuclear radiation detector using micromechanical sensors", U.S. Patent # 6,118,124 (2000)
34. T.G. Thundat and M.J. Doktycz, "Micromechanical scanning differential calorimeter", U.S. Patent # 6,096,559 (2000)
35. T.G. Thundat, P.I. Oden and P.G. Datskos, "Non-contact passive temperature measuring system and method of operation using micro-mechanical sensors", U.S. Patent # 6,050,722 (2000)
36. T.G. Thundat, "Micro-mechanical potentiometric sensors", U.S. Patent # 6,016,686 (2000)
37. T.G. Thundat and R.J. Warmack, "High resolution three dimensional doping profiler", U.S. Patent # 6,005,400 (1999)
38. T.G. Thundat, "Microcantilever detector for explosives", U.S. Patent # 5,918,263 (1999)
39. T.G. Thundat, and E.A. Wachter, "Microcantilever sensor," U.S. Patent # 5,719,324 (1998)
40. E.A. Wachter, and T.G. Thundat, "Microbar sensor," U.S. Patent # 5,445,008 (1995)

PUBLICATIONS:

Total Peer Reviewed Journal Publications: 402

Web of Science - Refereed Journal Publications: 402

Total Citations: ~ 12,872 **h-index:** 57

Google Scholar – total citations 20,797+, **h-index** 74, and **i-10 index** 296

(<http://scholar.google.ca/citations?user=5COIB58AAAAJ>)

2017

1. S.C. Roy, T. Kundu, V.R. Ramgopal Rao, T. Thundat, "On-chip integration of photodetector and sensor: A multi-modal photonic device for sensing applications", IEEE Sensors Journal, 17, 4773-80 (2017).
2. Y.Q. Zhang, H.B. Tao, J. Liu, Y.F. Sun, J. Chen, B. Hua, T. Thundat, J.L. Luo, "A rational design for enhanced oxygen reduction: Strongly coupled silver nanoparticles and engineered perovskite nanofibers", Nano Energy, 38, 392-400 (2017).
3. B. Khorshidi, T. Thundat, D. Pernitsky, and M. Sadrzadeh, "A parametric study on the synergic impacts chemical additives on permeation properties of thin film composite polyamide membrane", Journal of Membrane Science, 535, 248-257 (2017).
4. X.C. Liu, I. Chae, N. Miriyala, D. Lee, T. Thundat, S. Kim, "Broadband mid-infrared standoff reflection-absorption spectroscopy using a pulsed external cavity quantum cascade laser", Applied Spectroscopy, 71, 1494-1505 (2017).
5. S. Chaudhari, K. Chaudhari, S. Kim, M.F. Khan, J. Lee, and T. Thundat, "Electrophoresis assisted time-of-flow mass spectrometry using hollow channel nanomechanical resonators", Sci. Reports, 7, 3535 (2017).
6. D. Zhang, T. Thundat, and R. Narain, "Flocculation and dewatering of fine mature tailing using temperature-response cationic polymers", Langmuir 33, 5900-09 (2017).
7. Z. Antic, S. Kuzman, V. Dordevic, M.D. Dramicanin, T. Thundat, "white- and blue-light emitting dysprosium(III) and terbium(III) doped gadolinium titanate phosphors, Luminescence 32, 539-544 (2017).

8. J.S. Chen, B. Yan, X.G. Wang, O.X. Huang, T. Thundat, H.B. Zheng, “Core cross-linked double hydrophilic block copolymer micelles based on multiple hydrogen bonding interactions”, *Polymer Chemistry*, 8, 3066-3073 (2017).
9. K.R. Jiang, Y.N. Yang, G. Thakur, Y. Kotsuchibashi, S. Naiker, R. Narain, T. Thundat, “Rapid and highly sensitive detection of dopamine using conjugated oxaborole-based polymer and glycopolymer systems”, *ACS Applied Materials and Interfaces*, 9, 15225-31 (2017).
10. Z. Li, K. Ahadi, K. Jiang, B. Ahvazi, P. Li, A.O. Anyia, K. Cadien, and T. Thundat, “Free standing hierarchical porous carbon film derived from hybrid nanocellulose for high power super capacitors”, *Nano Energy* 10, 1847-60 (2017).
11. S. Pendharker, H. Hu, S. Molesky, R. Starko-Bowes, Z. Poursofi, S. Parmanik, N. Nazemifard, R. Fedosejevs, T. Thundat, Z. Jacob, “Thermal grapheme metamaterials and epsilon-near-zero high temperature plasmonics”, *J. Optics*, 19, article # 055101 (2017).
12. Q. Chen, J. Liu, T. Thundat, M.R. Gray, Q. Liu, “Spatially resolved organic coating on clay minerals in bitumen froth revealed by AFM adhesion mapping”, *Fuel* 191, 283-289 (2017).
13. S. Seif, T. Thundat, and K. Cadien, “Evaluation of efficiency factors and internal resistance of thermoelectric materials”, *International Journal of Energy Research*, 41, 198-206 (2017).
14. B. Hua, M. Li, Y.F. Sun, Y.Q. Zhang, N. Yan, J. Chen, T. Thundat, J. Li, J.L. Luo, “A coupling for success: Controlled growth of Co/CoOx nanoshoots perovskite mesoporous nanofibers as high-performance trifunctional electrocatalysts in alkaline condition”, *Nano Energy*, 32, 247-254 (2017).
15. B. Khorshidi, B. Soltannia, T. Thundat, M. Sadzadeh, “Synthesis of thin film composite polyamide membrane: Effect of monohydric and polyhydric alcohol additives in aqueous solution”, *J. Membrane Science* 523, 336-345 (2017).
16. D. Lee, I Chae, O. Kwon, K.H. Lee, C. Kim, S. Kim, T. Thundat, “Plasmonic absorbers with optical cavity for the enhancement of photothermal/opto calorimetric infrared spectroscopy” *App. Phys. Lett.*, 110, Article# 011901 (2017).
17. G. Haghghat, A. Sohrabi, P.M. Shaibani, C.W. Van Neste, S. Naicker, and T. Thundat, “The role of chloride ions in plasma-activated water treatment process”, *Environmental Science-Water Research and Technology.*, 3, 156-168 (2017).
18. P.M. Shaibani, H. Etaysah, S. Naicker, K. Kaur, T. Thundat, “Metabolic study of cancer cells using a pH sensitive hydrogel nanofiber light addressable potentiometric sensor”, *ACS Sensors*, 2, 151-156 (2017).
19. S.A.M. Bukhari, M.F. Khan, A. Goswami, R.M. McGee, T. Thundat, “Thermomechanical analysis of pico gram polymers using a suspended microchannel cantilever”, *RSC Advances*, 7, 8415-8420 (2017).

2016

20. A. Phani, V. Putkaradze, J.E. Hawk, K. Prashanthi, T. Thundat. “A nanostructured surface increases friction exponentially at the solid-gas interface”, *Sci. Reports*, 6, Article # 32996 (2016).
21. H. Itayash, M.F. Khan, K. Kaur, and T. Thundat, Microfluidic cantilever detects bacteria and measures their susceptibility to antibiotics in confined volumes, *Nature Comm.*, 7:12947, DOI:10.1038/ncomms12947 (2016).
22. Z. Antic, M. Dramicanin, K. Prashanthi, D. Jovanovic, S. Kuzman, and T. Thundat, Pulsed Laser Deposited Dysprosium-Doped Gadolinium–Vanadate Thin Films for Noncontact, Self-Referencing Luminescence Thermometry, *Advanced Materials*, DOI: 10.1002/adma.201601176 (2016).

23. N. Soin, P. Zhao, K. Prashanthi, J. Chen, P. Ding, E. Zhou, T. Shah, S.C. Ray, C. Tsonos, T. Thundat, E. Siores, J. Luo, "High performance triboelectric nanogenerators based on phase-inversion piezoelectric membranes of poly (vinylidene fluoride)-zinc stannate (PVDF-ZnSnO₃) and polyamide", *Nano Energy*, 30, 470-480 (2016).
24. K. Prashanthi, J.E. Hawk, R. McGee, R. Gaikwad, and T. Thundat, "In-situ probing of thermal desorption of vapor molecules on a nanowire using work function variation", *Nano Research*, 9, 3334-33345 (2016).
25. C.W. Van Neste, R. Hull, J.E. Hawk, A. Phani, M.J. Unsworth, T. Thundat, "Electrical excitation of the earth for resonant, wireless power transfer", *Wireless Power Transfer*, 3, 117-125 (2016)
26. T. Abraham, A. Afacan, P. Dhandharia, and T. Thundat, Conduction and dielectric mechanisms in Athabasca oil sands with application to electrical heating, *Energy and Fuels*, 30, 5630-5642 (2016).
27. J. Liu, K. Prashanthi, Z. Li, R.T. McGee, K. Ahadi, and T. Thundat, Strain-induced electrostatic enhancement of BiFeO₃ nanowire loops, *Phys. Chem. Chem. Phys.*, 18, 22772-22777 (2016).
28. H. Etayash, A.R. McGee, K. Kaur, and T. Thundat, Nanomechanical Sandwich assay for multiple cancer biomarkers in breast cancer cell-derived exosomes, *Nanoscale*, DOI 10:1039/c6nr03478k (2016).
29. A.K. Pickering, Richard Hull, J.E. Hawk, Arindam Phani, C.W. Van Neste, and Thomas Thundat, Quasi wireless power and control for battery-free robotics, *Wireless Power Transfer*, 2, 134-142 (2016).
30. B. Khorshidi, A. Bhinder, T. Thundat, D. Pernitsky, and M. Sadrzadeh, Developing high throughput thin film composite polyamide membranes for forward osmosis treatment of SAGD produced water, *J. Membrane Science*, 511, 29-39 (2016).
31. Z. Li, J. Liu, K.R. Jiang, and T. Thundat, Carbonized nanocellulose sustainably boosts the performance of activated carbon in ionic liquid supercapacitors, *Nano Energy*, 25, 161-169 (2016).
32. M.F. Khan, N. Miriyala, J. Lee, M. Hassanpourfard, A. Kumar, and T. Thundat, Heat capacity measurements of sub-nanoliter volumes of liquids using biomaterial microchannel cantilevers, *Appl. Phys. Letts.*, 108, Article Number: 211906, DOI: 10.1063/1.4952614 (2016).
33. N. Miriyala, M.F. Khan, and T. Thundat, Thermomechanical behaviour of a biomaterial microchannel cantilever subjected to periodic IR radiation, *Sensor and Actuators B-Chemical*, 235, 273-279 (2016).
34. M.S. Ghoraishi, J.E. Hawk, A. Phani, M.F. Khan, and T. Thundat, "Clustering mechanism of ethanol-water mixtures investigated with photothermal microfluidic cantilever deflection" *Sci. Reports*, 6, DOI 23966, (2016).
35. B. Khorshidi, T. Thundat, B. Fleck, M. Sadrzadeh, "A novel approach toward fabrication of high performance thin film composite polyimide membranes", *Sci. Reports*, 6, Article# 22069 (2016).
36. J. Kim, Song, K. Kim, S. Kim, J. Song, N. Kim, M.F. Khan, N.L. Zhang, J.E. Sader, K. Park, D. Kim, T. Thundat, J. Lee, "Hollow Microtube Resonators via Silicon Self-Assembly toward Subattogram Mass Sensing Applications" *Nano Letters*, 16, 1537-45 (2016).
37. F. Khor, T. Thundat, and Z. Jacob, "Universal spin-momentum locked optical forces", *Appl. Phys. Letts*, 108, Article#061102 (2016).
38. A. Bhinder, T. Thundat, D. Pernitsky, M. Sadrzadeh, "Developing high throughput thin film composite polyamide membranes for forward osmosis treatment of SAGD produced water", *J. Membrane Science*, 511, 29-39 (2016).

39. P.M. Shaibani, K.R. Jiang, G. Haghghat, M. Hassanpourfard, H. Etayash, S. Naiker, and T. Thundat, "The detection of Escherichia coli (E. coli) with the pH sensitive hydrogel nanofiber-light addressable potentiometric sensor (NF-LAPS)", *Sensors and Actuators - B*, 226, 176-183 (2016).
40. T. Abraham, C. Van Neste, A. Afacan, and T. Thundat, "Dielectric relaxation-based capacitive heating of oil sands", *Energy & Fuels*, 30, 1987-1996 (2016).
41. M.H. Zarifi, M. Rahimi, M. Daneshmand, and T. Thundat, "Microwave ring resonator-based interface sensors for oil sands applications", *Sensors & Actuators-B*, 224, 632-639 (2016).
42. Z. Antic, K. Prashanthi, S. Culubrk, K. Vukovic, M.D. Dramicanin, T. Thundat, "Effect of annealing conditions on the structural and luminescent properties of Eu³⁺ doped Gd₂Ti₂O₇ films", *App. Surf. Sci.*, 364, 273-279 (2016).
43. Z. Antic, V. Dordevic, M.D. Dramicanin, T. Thundat, "Photoluminescence of Eu(III)-doped Y_xSc_(1-x)2O₃ nanoparticles: Linear relationship between structural emission properties", *Ceramic international*, 42, 3899-3906 (2016).
44. I. Chae, M.F. Khan, J. Song, T. Kang, J. Lee, T. Thundat, "Standoff mechanical resonance spectroscopy based on infrared sensitive hydrogel cantilevers", *Anal. Chem.*, 88, 9678-84 (2016)
45. S.S. Djokic, Z. Antic, N.S. Djokic, T. Thundat, "Galvanic deposition gold on silicon surfaces in Au(I) in alkaline fluoride-free solutions", *J. Electro. Chem. Soc.*, 163, D818-D820 (2016).
46. S.S. Djokic, Z. Antic, N.S. Djokic, K. Cadian, T. Thundat, "Galvanic process on silicon surfaces in Cu(II)alkaline fluoride-free solutions", *J. Electro. Chem. Soc.*, 163, D651-D654 (2016).
47. M. Hassanpourfard, R. Gosh, T. Thundat, A. Kumar, "Dynamics of bacterial streamers induced clogging in microfluidic devices", *Lab on a Chip*, 16, 4091-4096 (2016).

2015

48. A. Talukdar, M. Faheem Khan, Dongkyu Lee, Seonghwan Kim, Thomas Thundat and Goutam Koley "Piezotransistive transduction of femtoscale displacement for photoacoustic spectroscopy" *Nature Communications* 6, (2015).
49. L. Tetard, A. Passian, R.H. Farahi, T. Thundat, B.H. Davison, "Optomechanical spectroscopic material characterization", *Nature Nanotechnology*, DOI:1038/NNano.2015.168 (2015).
50. K. Prashanthi, A. Phani, and T. Thundat, "Photothermal electrical resonance spectroscopy of physisorbed molecules on a nanowire resonator," *Nano Letters* 15 (8), 5658–5663 (2015).
51. H. Etayash, KR Jiang, S. Azmi, T. Thundat, and K. Kaur, "Real-time detection of breast cancer cells using peptide functionalized microcantilever arrays", *Scientific Reports*, 5, 13967 (2015).
52. M. Hassanpourfard, Z. Nikakhtari, R. Ghosh, Siddhartha Das, Thomas Thundat, Yang Liu, and Alope Kumar, "Bacterial floc mediated rapid streamer formation in creeping flows." *Scientific Reports* no. 5:13070. doi: 10.1038/srep13070 (2015).
53. K. Prashanthi, P. Dhandraria, N. Miriyala, R. Gaikwad, D. Barlage and T. Thundat, "Enhanced photo-collection in single BiFeO₃ nanowire due to carrier separation from radial surface field," *Nano Energy* 13, 240–248 (2015).
54. J. Liu, R. Gaikwad, A. Hande, S. Das, and T. Thundat, "Mapping and quantifying surface charges on clay nanoparticles", *Langmuir*, 31, 10469-10476 (2015).
55. I. Chae, D. Lee, S. Kim, T. Thundat, Electronic Nose for Recognition of Volatile Vapor Mixtures Using a Nanopore-Enhanced Opto-Calorimetric Spectroscopy, *Anal. Chem.* 87 Issue: 14 Pages: 7125-7132 DOI: 10.1021/acs.analchem.5b00915 (2015).

56. B. Khorshidi, T. Thundat, B. Fleck, M. Sadrzadeh, Thin Film Composite Polyamide Membranes: Parametric Study on the Influence of Synthesis Conditions, *RSC Adv.*, 5, 54985-54997 (2015).
57. M. H. Zarifi, A. Sohrabi, P. M. Shabani, M. Daneshmand, and T. Thundat, "Detection Of Volatile Organic Compounds Using Microwave Sensors", *Sensors Journal*, IEEE 15(1), 248-254, (2015).
58. M.H. Zarifi, M. Daneshmand, T. Thundat, High resolution microwave microstrip for sensing applications, *Sensor and Actuators A*, 233, 224 (2015).
59. S Azmi, K. Jiang, M. Stiles, T Thundat, K Kaur, "Detection of *Listeria monocytogenes* with short peptide fragments from class IIa bacteriocins as recognition elements" *ACS combinatorial science*, 17 (3), 156-163 (2015).
60. M. Rahimi, I. Chae, J.E. Hawk, Sushanta K. Mitra, Thomas Thundat, Methane sensing at room temperature using photothermal cantilever deflection spectroscopy, *Sensors and Actuators B: Chemical* Volume 221, Pages 564–569, (2015).
61. R. Gaikawad, A. Hande, S. Das, S.K. Mitra, and T. Thundat, Determination of Charge on Asphaltene Nanoaggregates in Air Using Electrostatic Force Microscopy, *Langmuir*, 31, 679-684, DOI: 10.1021/la503968v, (2015).
62. R. Gaikwad, S. Djokic, and T. Thundat, Galvanic Deposition of Gold on GaAs: A Tip-Induced Lithography Approach, *Journal of the Electrochemical Society* Volume: 162 Issue: 9 Pages: D486-D489 (2015).
63. T. Biswas, N. Miriyala, C. Doolin, T. Thundat, J.P. Davis, and K.S.D Beach, "Time-resolved mass sensing of a molecular adsorbate nonuniformly distributed along a nanomechanical string", *Physical Review Applied*, 3, 4002 (2015).
64. N. Sooin, K. Prashanthi, S. Sharma, A.A. Narasimulu, J. Luo, T.H. Shaw, E. Siores, T. Thundat, "Exclusively self-aligned beta phase PVDF with abnormal piezoelectric coefficient prepared by self inversion", *Chemical Communications*, 51, 8257 (2015).
65. D. Lee, O. Zandieh, S. Kim, S. Jeon, and T. Thundat, Sensitive and selective detection of hydrocarbon/water vapor mixtures with a nanoporous silicon microcantilever, *Sensors and Actuators B-Chemical*, Volume: 206 Pages: 84-89 (2015).
66. KJiang, H. Etayash, A. Azmi, S. Naicker, M. Hassanpourfard, G. Thankur, K. Kaur, and T. Thundat, "Rapid label-free detection of E-Coli using antibacterial peptide assisted impedance spectroscopy" *Anal. Methods*, 7, 9744-48 (2015).

2014

67. C.W. Van Neste, J.E. Hawk, A. Phani, J. Backs, R. Hull, T. Abraham, S.J. Glassford, A. K. Pickering and Thomas Thundat, Single-contact transmission for the quasi-wireless delivery of power over large surfaces, *Wireless Power Transfer*, Volume 1, Issue 02, pp 75-82 DOI: <http://dx.doi.org/10.1017/wpt.2014.9> (Sept. 2014)
68. D. Lee, S. Kim, S. Jeon, and T. Thundat, "Direct detection and speciation of trace explosives using nanoporous multi-functional microcantilever", *Anal. Chem.* 86, 5077-5082 (2014)
69. D. Lee, M. Lee, N. Jung, M. Yun, J. Lee, T. Thundat, and S. Jeon, "Modulus-tunable magnetoreheological elastomer microcantilevers", *Smart Materials and Structures*, 23, 055017, May 2014.
70. D. Lee, S. Kim, I. Chae, S. Jeon, and T. Thundat, "Nanowell-patterned TiO₂ microcantilevers for calorimetric sensing", *Appl. Phys. Lett.*, 104, 141903, (2014).

71. Faheem M. Khan, S. Kim, D. Lee, S. Schmidt, A. Boisen, and T. Thundat, "Nanomechanical identification of liquid reagents in a microfluidic channel", *Lab on a Chip*, 13, 1302-7 (2014).
72. S. Das, T. Thundat, and S.K. Mitra, "Asphaltene migration and separation in presence of aggregation in electroosmotic-electrophoretic microchannel transport", *Colloids and Surfaces A*, 446, 23-32 (2014)
73. G. Thakur, K. Jinag, D. Lee, K. Prashanthi, S. Kim, and T. Thundat, "Investigation of pH-Induced protein conformation changes by nanomechanical deflection", *Langmuir* 30, 2109, (2014).
74. N. Bajwa, C.J. Maldonado, T. Thundat, and A. Passian, "Piezoresistive measurement of swine H1N1 hemagglutinin peptide binding with microcantilever array" *AIP Advances*, 4, 037118, March 2014.
75. K. Prashanthi, and T. Thundat, "In-situ study of electric field-induced magnetization in multiferroic BiFeO₃ nanowires", *Scanning*, 36, 224-230 (2014).
76. H. Etayash, K. Jiang, T. Thundat, and K. Kaur, "Impedimetric detection of pathogenic gram-positive bacteria using an antimicrobial peptide from class IIa bacteriocins", *Anal. Chem.*, 86, 1693-1700, 2014.
77. X.C. Liu, C.W. Van Neste, M. Gupta, Y.Y. Tsui, S. Kim, and T. Thundat, "Standoff reflection-absorption spectra of surface adsorbed explosives measured with pulsed quantum cascade lasers", *Sensors and Actuators B-Chemical*, 191, 450-456 (2014).
78. M. Bagheri, I Chae, D. Lee, S. Kim, and T. Thundat, "Selective detection of physisorbed hydrocarbons using photothermal cantilever deflection spectroscopy", *Sensors and Actuators B-Chemical*, 191, 765-769 (2014).
79. M. Mehrenfar, G. Gaikwad, S. Das, S.K. Mitra, and T. Thundat, "Effect of temperature on morphologies of evaporation-triggered asphaltene nanoaggregates", *Langmuir* 30, 800-804 (2014).
80. D. Lee, S. Kim, C.W. Van Neste, M. Lee, S. Jeon, and T. Thundat, "Photoacoustic spectroscopy of surface adsorbed molecules using a nanostructured resonator array", *Nanotechnology*, 25, 035501 (2014).
81. H. Etayash, L. Norman, T. Thundat, M. Stiles, K. Kaur, "Surface-conjugated anti-microbial peptide leucocin A displays high binding to pathogenic gram-positive bacteria", *Applied Materials and Interfaces*, 6, 1131-1138 (2014).

2013

82. K. Prashanthi, R. Gaikwad, T. Thundat, "Surface dominant photoresponse of multiferroic BiFeO₃ nanowires under sub-band gap illumination", *Nanotechnology*, 24, 505710 (2013).
83. S.S. Djokic, N.S. Djokic, C. Guthy, and T. Thundat, "Deposition of copper, silver, and gold from aqueous solutions onto germanium substrates via galvanic displacement", *Electrochimica Acta*, 109, 475-481 (2013).
84. N. Miriyala, K. Prashanthi, and T. Thundat, "Oxygen vacancy dominant strong visible photoluminescence from BiFeO₃ nanotubes", *Physica Status Solidi - Rapid Research Letters*, 7, 668-671 (2013).
85. K. Prashanthi, N. Miriyala, R.D. Gaikwad, M. Moussa, V.R. Rao, and T. Thundat, "Vibrational energy harvesting using photo-patternable piezoelectric nanocomposite cantilevers" *Nano Energy*, 2, 923-932 (2013).
86. A. Ollagnier, A. Fabre, T. Thundat, and R. Finot, "Activation process of reversible Pd thin film hydrogen sensors", *Sensors and Actuators B-Chemical*, 186, 258-262 (2013).

87. A. Passian, L. tetrad, and T. Thundat, "Comments on the paper "A comprehensive modeling and vibration analysis of AFM microcantilevers subjected to nonlinear tip-sample interaction forces" by Sohrab Eslami and Nader Jalili", *Ultramicroscopy*, 131, 92-93 (2013).
88. M. Yun, S. Lee, C. Yim, N. Jung, T. Thundat, and S. Jeon, "Suspended polymer nanobridge on a quartz resonator", *Appl. Phys. Lett.*, 103, 053109 (2013).
89. N. Soin, S.S. Roy, S. Sharma, T. Thundat, J.A. McLaughlin, "Electrochemical and oxygen reduction properties of pristine and nitrogen-doped few layered graphene nanoflakes", *J. Solid State Electrochem.*, 17, 2139-2149 (2013)
90. A. Passian, L. Tetard, and T. Thundat, "Comment on the paper "A comprehensive modeling and vibration analysis of AFM microcantilevers subjected to nonlinear tip-sample interaction forces" Ultramicroscopy 131, 92-93 (2013)
91. S. Das, T. Thundat, and S.K. Mitra, "Analytical model for zeta potential of asphaltene", *Fuel*, 108, 543-549 (2013)
92. G. Thakur, K. Prashanthi, and T. Thundat, "Directed self-assembly of proteins into discrete patterns" *Scientific Reports*, 3, 1923, DOI 10.1038/srep01923 (2013)
93. A. Leru, R.H. Farahi, L. Tetard, S. Enoch, T. Thundat, and A. Passian,, "Plasmon assisted thermal modulation in nanoparticles", *Optics Express*, 21, 12145-12158 (2013)
94. A. Sohrabi, P.M. Shaibani, and T. Thundat, "The effect of electric field on the diameter and size of electrospun nylon6 nanofibers", *Scanning* 35, 183 (2013)
95. H. Etayash, L. Norman, T. Thundat, and K. Kaur, "Peptide-bacteria interactions using engineered surface-immobilized peptides from class IIa bacteriocins", *Langmuir*, 29, 4048-4056 (2013).
96. P.M. Shaibani, P. Kovur, A. Sohrabi and T. Thundat, "Photocatalytic BiFeO₃ nanofibrous mats for effective water treatment", *J. Nanotech.*, DOI 10.1155/2013/939531(2013)
97. A. Sohrabi, P.M. Shaibani, H. Etayash, K. Kaur and T. Thundat, "Sustained drug release and antibacterial activity of ampicillin incorporated poly (methyl methacrylate)-Nylon6 core/shell nanofibers", *Polymer*, 54, 2699-2705 (2013).
98. K. Prashanthi, M. Gupta, Y.Y. Tsui and T. Thundat, "Effect of annealing atmosphere on microstructural and photoluminescence characteristics of multiferroic BiFeO₃ thin films prepared by pulsed laser deposition technique", *Appl. Phys A*, 110, 903-907 (2013).
99. S. Kim, D. Lee, X. Liu, C. Van Neste, S. Jeon and T. Thundat, "Molecular recognition using receptor-free nanomechanical infrared spectroscopy based on a quantum cascade laser", *Sci. Rep.* 3, 1111 (2013).
100. S.S. Djokic, L. Nolan, K. Cadien, and T. Thundat. "Electroless deposition of copper on silver and niobium surfaces", *Electrochemistry Letters*, 2, D16-D18 (2013).
101. S. Kim, D. Lee, M. Yun, N. Jung, S. Jeon and T. Thundat, "Multi-modal characterization of nanogram amounts of a photosensitive polymer", *Appl. Phys. Lett.*, 102, 024103 (2013).

2012

102. C. Yim, M. Yun, S. Kim, N. Jung, S.-H. Lim, M. Lee, S.-W. Rhee, T. Thundat and S. Jeon, "Nanomechanical thermal analysis of indium films using silicon microcantilevers", *Jap. J. App. Phys.*, 51, 08KB07 (2012).
103. A. Passian and T. Thundat, "Materials Science: The abilities of instabilities", *Nature*, 487, 440-441 (2012).

104. E. Finot, V. Rouger, L. Markey, R. Seigneuric, M.H. Nadal and T. Thundat, "Visible photothermal deflection spectroscopy using microcantilevers", *Sens. Actuators B: Chemical*, 169, 222-228 (2012).
105. R. H. Farahi, A. Passian, L. Tetard and T. Thundat, "Critical issues in sensor science to aid food and water safety", *ACS Nano*, 6, 4548-4556 (2012).
106. N. Soin, S.S. Roy, S.K. Mitra, T. Thundat and J.A. McLaughlin, "Nanocrystalline ruthenium oxide dispersed few layered grapheme (FLG) nanoflakes as supercapacitor electrodes", *J. Mater. Chem.*, 22, 14944-14950 (2012).
107. N. Buchar, R. Sunasee, K. Ishihara, T. Thundat and R. Narain, "Degradable thermoresponsive nanogels for protein encapsulation and controlled release", *Bio-conjugate Chemistry*, 23, 75-83 (2012).
108. A. Valiei, A. Kumar, P.P., Mukherjee, Y. Liu and T. Thundat, "A web of streamers biofilm formation in a porous microfluidic device", *Lab-on-a-chip*, 12, 5115 (2012).
109. S. Das, R.P. Misra, T. Thundat, S. Chakraborty and S.K. Mitra, "Modeling of asphaltene transport and separation in the presence of finite aggregation effects in pressure-driven microchannel flow", *Energy and Fuels*, 26, 5851-5857 (2012).
110. S.S. Djokic, N.S. Djokic and T. Thundat, "Galvanic and chemical deposition of bismuth powders from aqueous solutions", *J. Electrochem Soc.*, 159 (10), D587-591, (2012).
111. C. Guthy, C.W. Van Neste, S. Mitra, S. Bhattacharjee and T. Thundat, "Parametric energy conversion of thermoacoustic vibrations", *Appl. Phys. Lett.*, 100, 203902, (2012).
112. K. Prashanthi, G. Thakur and T. Thundat, "Surface enhanced strong visible photoluminescence from one-dimensional multiferroic BiFeO₃ nanostructures", *Surface Sci.*, 606, L83-L86, (2012).
113. R.H. Farahi, A. Passian, L. Tetard and T. Thundat, "Pump-probe spectroscopy using quantum cascade lasers", *J. of Phys. D- Appl. Phys.* 45, 12, 125101 (2012).
114. S.S. Djokic, K. Prashanthi and T. Thundat, "Electroless deposition of bismuth containing films on copper and silver substrates from KBiI₄ solutions", *Electrochemical and Solid-State Letters* 15(5), D23-D25, (2012).
115. K. Prashanthi, P.M. Shaibani, A. Sohrabi, T. S. Natarajan and T. Thundat, "Nanoscale magnetoelectric coupling in multiferroic BiFeO₃ nanowires," *Phys. Status Solidi RRL* 6, No. 6 (2012).
116. A.L. Lereu, A. Passian, R.H. Farahi, L. Abel-Tiberini, L. Tetard and T. Thundat, "Spectroscopy and imaging of nanorods toward nanopolarimetry", *Nanotechnology*, 23, 045701 (2012)
117. B. Neha, R. Sunasee, K. Ishihara, T. Thundat and R. Narrain, "Biodegradable thermoresponsive nanogels for protein encapsulation and controlled release", *Bioconjugate Chemistry*, 23, 75-83 (2012)
118. K. Prashanthi, M. Naresh, V. Seena, T. Thundat and V.R. Rao, "A novel photo-plastic piezoelectric SU-8/ZnO₂ nanocomposites for MEMS applications", *JMEMS*, 21, 259-261, (2012).
119. K. Prashanthi, H. Zhang, V. R. Rao and T. Thundat, "Local piezoelectric response of ZnO nanoparticles embedded in a photosensitive polymer matrix", *Phys. Status Solid RRL* 6, No.2, (2012). DOI 10.1002/pssr.201105538.
120. M.E. Morales-Rodriguez, C.W. Van Neste, L.R. Senesac, S.M. Mahajan and T. Thundat, "Ultraviolet decomposition of surface adsorbed explosives investigated with infrared standoff spectroscopy", *Sensors and Actuators B* 161 (1), 961-966, (2012).

2011

121. M. Yun, C. Yim, N. Jung, S. Kim, T. Thundat and S. Jeon, "Nanomechanical thermal analysis of photosensitive polymers", *Macromolecules* 44, 9661, (2011).
122. L. Tetard, A. Passian, R.H. Farahi, B.H. Davison, S. Jung, A.J. Ragauskas, A.L. Lereu and T. Thundat, "Nanometrology of delignified Populus using mode synthesizing atomic force microscopy", *Nanotechnology* 22, 465702, (2011).
123. L. Tetard, A. Passian, R.H. Farahi, B.H. Davison, A.L. Lereu and T. Thundat, "Optical and plasmonic spectroscopy with cantilever shaped materials", *J Phys D: Appl. Phys.* 44, 445102, (2011).
124. L. Tetard, A. Passian, R.H. Farahi, B.L. Davison and T. Thundat, "Optomechanical spectroscopy with broadband interferometric and quantum cascade laser sources", *Optics Letters*, 36, 3251-3253 (2011).
125. L. Tetard, A. Passian, S. Eslami, N. Jalili, R.H. Farahi and T. Thundat, "Virtual resonance and difference frequency generation by van der Walls interactions", *Phys. Rev. Lett.*, 106, 180801 (2011).
126. K.R. Buchapudi, H. Xin, Y. Xin, H.F. Ji and T. Thundat, "Microcantilever biosensors for chemicals and bio-organisms", *Analyst*, 136 (8), 1539-1556 (2011).

2010

127. C. Van Neste, M. Morales-Rodriguez, L.R. Senesac, S.M. Mahajan and T. Thundat, "Quartz crystal tuning fork photoacoustic point sensing", *Sensors and Actuators B*, 150 (1), 402-405 (2010).
128. L. Tetard, A. Passian and T. Thundat, "New modes for subsurface atomic force microscopy through nanomechanical coupling", *Nature Nanotechnology*, 5, 105-109 (2010).
129. L. Tetard, A. Passian, R.H. Farahi and T. Thundat, "Atomic force microscopy of silica nanoparticles and carbon nanohorns in macrophages and red blood cells", *Ultramicroscopy*, 110 (6), 586-591 (2010).
130. L. Tetard, A. Passian, R.H. Farahi, U.C. Kalluri, B.H. Davison and T. Thundat, "Spectroscopy and atomic force microscopy of biomass", *Ultramicroscopy*, 110 (6) 701-707 (2010).
131. C.W. Van Neste, M.E. Morales-Rodriguez, L.R. Senesac, S.M. Mahajan and T. Thundat, "Quartz crystal tuning fork photoacoustic point sensing", *Sensors and Acutators, B: Chemica*, 150 (1), 402-405 (2010).
132. A. Braiman, F. Rudakov and T. Thundat, "DNA separation on surfaces" *Appl. Phys. Lett.*, 97, 033703 (2010).
133. S. Kim, D. Yi, A. Passian and T. Thundat, "Observation of an anomalous mass effect in microcantilever-based biosensing caused by adsorbed DNA", *Appl. Phys. Lett.*, 96, 153703 (2010).
134. T. Thundat, "DNA sequencing read with quantum mechanics", *Nature Nanotechnology*, 5, 4, 246-247 (2010).
135. T. Chen, D.P. Chang, T. Liu, R. Desikan, R. Datar, T. Thundat, R. Berger and S. Zaucher, "Glucose-responsive polymer brushes for microcantilever sensing", *J. Mat. Chem.*, 20, 3391-3395 (2010).
136. S. Kim, K.D. Kihm and T. Thundat, "Fluidic applications for an atomic force microscopy with microcantilevers", *Experiments in Fluids*, 48, 721-736 (2010).

137. A. Graves, J. Olsen, N. Privorotskaya, L. Senesac, T. Thundat, W.P. King and A. Boisen. “Microcalorimetric sensor for vapor phase detection of optimized heat profile”, *Micro. Electro. Eng.* 87, 696-698 (2010).
138. A. Braiman, F. Rudakov and T. Thundat, “Highly selective separation of DNA fragments using optically directed transport”, *Appl. Phys. Lett.*, 96, 053701 (2010).
139. A. Passian, S. Kouchenchian, S.B. Yakubovich and T. Thundat, “Properties of index transforms in modeling of nanostructures and plasmonic systems”, *J. Math. Phys.*, 51, 023518 (2010).

2009

140. A. Graves, J.K. Olsen, N. Privorotskaya, L. Senesac, T. Thundat, W.P. King and A. Boisen, “Micro-Calorimetric sensor for vapor phase explosive detection with optimized heat profile”, *IEEE Sensors*, 1-3, 678-681 (2009).
141. L. Tetard, A. Passian and T. Thundat, “New modes for subsurface atomic force microscopy through nanomechanical coupling”. *Nature Nanotechnology* 20 December 2009 doi:10.1038/nnano.2009.454 (2009).
142. S. Kim, T. Rahman, L.R. Senesac, B.H. Davison and T. Thundat, “Piezoresistive cantilever arrays for consolidated bioprocessing monitoring”, *Scanning*, 31, 204-210 (2009).
143. A.F. Bange, G.M. Brown, L.R. Senesac and T. Thundat, “Stripping voltammetry of Pb and Cu using a microcantilever”, *Surface Science*, 603, L125-L127 (2009).
144. R.H. Farahi, A. Passian, Y.K. Jones, L. Tetard, A.L. Lereu and T.G. Thundat, “Laser reflectometry of submegahertz liquid meniscus ringing”, *Opt. Lett.*, 34, 3148 (2009).
145. A. Boisen and T. Thundat, “Design and fabrication of cantilever array sensors”, *Materials Today*, 12, 32-38 September (2009).
146. D. Lee, S. Kim, N. Jung, T. Thundat and S. Jeon, “Effects of gold patterning on the bending profile and the frequency response of a microcantilever”, *J. Appl. Phys.*, 106, 024310 (2009).
147. R. Datar, S. Kim, S. Jeon, S. Manalis, P. Hesketh, A. Boisen and T. Thundat, “Cantilever sensors: Nanomechanical tools for diagnostics”, *MRS Bulletin*, 34, 449-454 (2009).
148. L.R. Senesac, D. Yi, A. Grave, J.H. Hales, Z.J. Davis, D.M. Nicholson, A. Boisen and T. Thundat, “Microdifferential thermal analysis and detection of adsorbed explosive molecules using microfabricated bridges”, *Rev. Sci. Instrum.*, 80, 035102 (2009).
149. C. Van Neste, L.R. Senesac and T. Thundat, “Standoff spectroscopy of surface adsorbed chemicals”, *Anal. Chem.*, 81, 1952 (2009).

2008

150. D. Yi, A. Greve, J.H. Hales, L.R. Senesac, D.M. Nicholson, A. Boisen and T. Thundat, “Detection of adsorbed explosives materials using thermal response of suspended microfabricated bridges”, *Appl. Phys. Lett.*, 93, 154102 (2008).
151. L. Tetard, A. Passian, R. Linch, B. Voy, G. Shekawat, V.P. Dravid and T. Thundat, “Imaging nanoparticles in cells by nanomechanical holography”, *Nature Nanotechnology*, 3, 501 (2008).
152. A.L. Lereu, A. Passian, R.H. Farahi, N.F. Van Hulst, T.L. Ferrell and T. Thundat, “Thermoplasmonic shift and dispersion in thin metal films”, *J. Vac. Sci and Tech A: Vacuum, Surfaces and Films*, 26 (4), 836-841 (2008).
153. L. Tetard, A. Passian, K. Venmar, R. Linch, B. Voy, G. Shekawat, V.P. Dravid and T. Thundat, “Elastic phase response of silica nanoparticles buried in soft matter”, *Appl. Phys. Lett.*, 93, 133113, (2008).

154. C. Van Neste, L.R. Senesac and T. Thundat, "Standoff photoacoustic spectroscopy", *Appl. Phys. Lett.*, 92, 234102 (2008).
155. A.R. Krause, C. Van Neste, L.R. Senesac, T. Thundat and E. Finot, "Trace explosive detection using photothermal deflection spectroscopy", *J. App. Phys.*, 103, 094906 (2008).
156. G.A. Baker, R. Desikan and T. Thundat, "Label-free sugar detection using phenylboronic acid-functionalized piezoresistive microcantilevers", *Anal. Chem.* 80, 4860 (2008).
157. E. Finot, A. Passian and T. Thundat, "Measurement of mechanical properties of cantilever shaped materials", *Sensors*, 8, 3497 (2008).
158. T. Thundat, "Flexible approach pays off", *Nature Nanotechnology*, 3, 133 (2008).
159. D. Yi, L. Senesac and T. Thundat, "Speciation of energetic materials on a microcantilever using surface reduction", *Scanning*, 30, 208 (2008).
160. C. Van Neste, L. Senesac, D. Yi and T. Thundat, "Standoff detection of explosive residues using photothermal microcantilevers", *Appl. Phys. Lett.*, 92, 134102 (2008).
161. L. Senesac and T. Thundat, "Nanosensors for trace explosive detection", *Materials Today*, 11, 28 (2008).

2007

162. S. Velanki, S. Kelley, T. Thundat, D.A. Blake and H.F. Ji, "Detection of Cd(II) using antibody-modified microcantilever sensors", *Ultramicroscopy*, 107, 1123-1128 (2007).
163. D. Lee, T. Thundat and S. Jeon, "Electromechanical identification of molecules adsorbed on microcantilevers", *Sensors and Actuators B*, 124 (1), 143-146 (2007).
164. G. Koley, M. Qazi, L. Lakshmanan and T. Thundat, "Gas sensing using electrostatic force potentiometry", *Appl. Phys. Lett.*, 90, 173105 (2007).
165. R. Desikan, S. Armel, H.M. Meyer III and T. Thundat, "Effect of chain length on nanomechanics of alkanethiol self-assembly", *Nanotechnology*, 18(42) (2007).
166. A. Choudhury, P.J. Hesketh, T. Thundat and Z. Hu, "A piezoresistive microcantilever array for surface stress measurement: Curvature model and fabrication", *J. Micromechanics and Microengineering*, 17(10), 2065-2076 (2007).
167. D.W. Dareing, D. Yi and T. Thundat, "Vibration response of microcantilevers bounded by a confined fluid", *Ultramicroscopy* 107 (10-11), 1105-1110 (2007).
168. D. Yi, A. Passian, A.L. Lereu and T. Thundat, "An experimental investigation of analog delay generation for dynamic control of microsensors and atomic force microscopy", *Ultramicroscopy* 107 (10-11), 1020-1026 (2007).
169. G. Koley, M. Qazi, L. Lakshmanan and T. Thundat, "Gas sensing using electrostatic force potentiometry", *Appl. Phys. Lett.*, 90 (17) (2007).
170. S. Jeon, N. Jung and T. Thundat, "Nanomechanics of a self-assembled monolayer on microcantilever sensors measured by a multiple-point deflection technique", *Sensors and Actuators B*, 122 (2), 365-368 (2007).
171. A. Passian, A. L. Lereu, D. Yi, S. Barhen and T. Thundat, "Stochastic excitation and delayed oscillation of a micro-oscillator," *Phys. Rev. B*, 75, 233403 (2007).
172. A. Passian, A. L. Lereu, D. Yi, S. Barhen and T. Thundat, "Stochastic excitation and delayed oscillation of a micro-oscillator," *Virtual Journal of Nanoscale Science & Technology*, 15 (25) (2007).
173. E. Dareing, D. Yi and T. Thundat, "Vibration response of cantilevers bounded by a confined fluid", *Ultramicroscopy*, 107, 1105-1110 (2007).

174. D. Yi, A. Passian and T. Thundat, "An experimental investigation of analog delay generation for dynamic control of microsensors and atomic force microscopy," *Ultramicroscopy*, 107, 1020 (2007).

2006

175. A. Passian, S. Zahrai, A.L. Lereu, R.H. Farahi, T.L. Ferrell and T. Thundat, "Nonradiative surface plasmon assisted microscale Marangoni forces", *Phys Rev E Stat Nonlin Soft Matter Phys*, 73(6 Pt 2), 066311 (2006).
176. L. Lereu, A. Passian, R. H. Farahi, S. Zahrai and T. Thundat, "Plasmonic Marangoni forces," *J. Eur. Opt. Soc. Rapid Publications* 1, 06030 (2006).
177. A. Passian, V. Protopopescu and T. Thundat, "Fluctuation and dissipation of a stochastic micro-oscillator under delayed feedback," *J. Appl. Phys.*, 100, 114314 (2006).
178. D.G. Hafeman, J.B. Harkins, C.E. Witkowski, N.S. Lewis, R.J. Warmack, G.M. Brown and T. Thundat, "Optically directed molecular transport and 3D isoelectric positioning of amphoteric biomolecules", *PNAS*, 103, 6436 (2006).
179. R.H. Farahi, A. Passian, S. Zahrai, A.L. Lereu, T.L. Ferrell and T. Thundat, "Microscale Marangoni actuation: All-optical and all-electrical methods", *Ultramicroscopy* 106 (8-9), 815-821, (2006).
180. M. Su and T. Thundat, "Remote chemical sensing and recognition by acoustic mapping of photothermal fields", *Appl. Phys. Lett.*, 88, 194103, (2006).
181. D.W. Daering, F. Tian and T. Thundat, "Effective mass and flow patterns of fluids surrounding microcantilevers", *Ultramicroscopy*, 106, 789 (2006).
182. X.D. Yan, H.F. Ji and T. Thundat "Microcantilever (MCL) Biosensing", *Current Analytical Chemistry*, 2, 297 (2006).
183. R. Desikan, I. Lee and T. Thundat, "Effect of nanometer surface morphology on surface stress and adsorption kinetics of alkanethiol self-assembled monolayers", *Ultramicroscopy*, 106, 795 (2006).
184. A. Passian, S. Zaharai, R.H. Farahi, T.L. Ferrell and T. Thundat, "Nonradiative surface plasmon assisted microscale Marangoni forces", *Phys. Rev. E* 73, 066311 (2006).
185. S. Jeon, T. Thundat and Y. Braiman, "Effect of normal vibration on friction in the atomic force microscopy experiment", *Appl. Phys. Letts.*, 88 (21), No. 214102 (2006).
186. S. Kalinin, B.J. Rodriguez, J. Shin, S. Jesse, V. Grichko and T. Thundat, "Bioelectrochemical imaging by scanning probe microscopy: Galvani's experiment at nanoscale", *Ultramicroscopy*, 106, 334 (2006).
187. A. Wig, E.T. Arakawa, A. Passian, T.L. Ferrell and T. Thundat, "Photothermal spectroscopy of *Bacillus anthracis* and *Bacillus cereus* with microcantilevers", *Sensors and Actuators B*, 114, 206-211, (2006).
188. M.M.C. Chang, G. Cuda, Y.L. Bunimovich, M. Gaspari, J.R. Heath, H.D. Hill, C.A. Mirkin, A.J. Nijdam, R. Terracciano, T. Thundat and M. Ferrari, "Nanotechnologies for biomolecular detection and medical diagnostics", *Current Opinion in Chemical Biology*, 10(1), 11 (2006).
189. S.M. Jeon, R. Desikan, F. Tian and T. Thundat, "Influence of nanobubbles on the bending of microcantilevers", *Appl. Phys. Lett.* 88, No. 103118 (2006).
190. H.F. Ji, Y.Q. Liu, H.W. Du, X.H. Xu, and T. Thundat, "Spiral springs and microspiral springs for chemical and biological sensing", *Appl. Phys. Lett.*, 88, 063504 (2006).

191. B.J. Rodriguez, S.V. Kalinin, J. Shin, S. Jessee, V. Grichko, T. Thundat, A.P. Braddorf and A. Gruverman, "Electromechanical imaging of biomaterials by scanning probe microscopy", *J. Struct. Biology*, 153(2), 151-159 (2006).
192. A. Passian, A.L. Lereu, R.H. Ritchie, F. Meriaudeau, T. Thundat and T.L. Ferrell, "Surface plasmon assisted thermal coupling of multiple photon energies", *Thin Solid Films*, 497, 315 (2006).
193. Z. Hu, D.M. Zhou, R. Greenberg and T. Thundat, "Nanopowder molding method for creating implantable high-aspect ratio electrodes on thin flexible substrates", *Biomaterials*, 27(9), 2009-2017 (2006).
194. K.M. Hansen and T. Thundat, "Microcantilever biosensors", *Methods*, 37, 57-64 (2006).

2005

195. J. Shin, B.J. Rodriguez, A.P. Baddrof, T. Thundat, E. Karapetian, M. Kachanov, A. Gruverman and S.V. Kalinin, "Simultaneous elastic and electromechanical imaging by scanning probe microscopy: Theory and applications to ferroelectric and biological materials", *J. Vac. Sci. Technol. B* 23, 2102 (2005).
196. S.V. Kalinin, B.J. Rodriguez, T. Thundat and A. Gruverman, "Electromechanical imaging of biological systems with sub-10 nm resolution", *App. Phys. Lett.*, 87, 053901 (2005).
197. A. Tian, V. Boiadjev, L.A. Pinnaduwege, G.M. Brown and T. Thundat, "Selective detection of Cr(IV) using microcantilever electrode coated with self-assembled monolayer", *J. Vac. Sci. Technol.*, 23, 1022-1028 (2005).
198. L.A. Pinnaduwege, H.F. Ji and T. Thundat, "Moore's law in homeland defense: An integrated sensor platform based on silicon microcantilevers", *IEEE Sensors Journal*, 5, 774-785 (2005).
199. Z. Hu, V. Boiadjev and T. Thundat, "Nanocatalytic spontaneous ignition and self-supporting room temperature combustion", *Energy and Fuels*, 19, 855-858 (2005).
200. A.L. Lereu, A. Passian, J.P. Goudonnet, T. Thundat and T.L. Ferrell, "Optical modulation processes in thin films based on thermal effects of surface plasmons", *App. Phys. Lett.*, 86, 154101 (2005).
201. A. Passian, R.H. Ritchie, A.L. Lereu, T. Thundat and T.L. Ferrell, "Curvature effects in surface plasmon dispersion and coupling", *Phys. Rev. B*, 71, 115425 (2005).
202. A. Passian, A.L. Lereu, A. Wig, F. Meriaudeau, T. Thundat and T.L. Ferrell, "Imaging standing surface plasmons using photon tunneling", *Phys. Rev. B.*, 71 165418 (2005).
203. D.W. Daering, T. Thundat, S.M. Jeon and M. Nicholson, "Modal analysis of microcantilever sensors with environmental damping", *J. Appl. Phys.*, 97(8), 084902 (2005).
204. A. Tian, K.M. Hansen, T.L. Ferrell and T. Thundat, "Dynamic microcantilever sensors for discerning biomolecular interactions", *Anal. Chem.*, 77, 1601-1606 (2005).
205. R.H. Farahi, A. Passian, T. Ferrell and T. Thundat, "Marangoni forces created by surface plasmon decay", *Opt. Lett.*, 30(6), 616 (2005).
206. V.I. Boiadjev, G.M. Brown, L.A. Pinnaduwege, G. Goretzki, P.V. Bonnesen and T. Thundat, "Photochemical hydrosilylation of 11-undecyltriethylammonium bromide with hydrogen terminated Si surfaces for development of robust microcantilever sensors for Cr(IV)", *Langmuir*, 21(4), 1139-1142 (2005).
207. D.W. Daering and T. Thundat, "Simulation of adsorption-induced stress of a microcantilever sensor", *J. Appl. Phys.*, 97(4), 043526 (2005).
208. A. Passian, A.L. Lereu, E.T. Arakawa, A. Wig, T. Thundat and T. Ferrell, "Modulation of multiple photon energies by use of surface plasmons", *Opt. Lett.*, 30, 41-43 (2005).

209. S. Nath, A. Pal, S.K. Ghosh, S. Praharaj, S. Panigrahy, S. Kundu, T. Thundat, and T. Pal, "Synthesis, characterization, and optical properties of AuSe nanoalloys", *J. Nanosci. Nanotechnol.*, 5(11), 1832-1839 (2005).
210. M. Su, Z.X. Pan, V. Dravid, and T. Thundat, "Locally enhanced humidity for scanning probe nanolithography", *Langmuir*, 21(24), 10902-06 (2005).
211. H.F. Ji, Y.F. Zhang, V.V. Purushotham, S. Konudu, B. Ramachandran, T. Thundat and D.T. Haynie, "1,6-Hexanedithiol monolayers as a receptor for specific recognition of alkylmercury", *Analyst*, 130, 1577-1579 (2005).
212. J.D. Adams, B. Rogers, L. Manning, Z. Hu, T. Thundat, H. Cavazoz and S.C. Minne, "Piezoelectric self-sensing of adsorption-induced microcantilever bending", *Sensors and Actuators, A-Physical*, 121, 457-461 (2005).

2004

213. Z. Hu, T. Seeley, S. Kossek and T. Thundat, "Calibration of optical cantilever deflection readers", *Rev. Sci. Instrum.*, Vol.75 (2), 400-404 (2004).
214. L.A. Pinnaduwege, A. Wig, D.L. Hedden, A. Gehl, D. Yi, T. Thundat and R.T. Lareau, "Detection of trinitrotoluene via deflagration on a microcantilever", *J. App. Phys.* 95 (10), 5871-5875 (2004).
215. F. Tian, J.H. Pei, D.L. Hedden, G.M. Brown and T. Thundat, "Observation of the surface stress induced in microcantilevers by electrochemical redox processes", *Ultramicroscopy*, 100(3-4): 217-223, (2004).
216. A. Wig, A. Passian, E. Arakawa, T.L. Ferrell and T. Thundat, "Optical thin-film interference effects in microcantilevers", *J. Appl. Phys.* 95 1162-1165 (2004).
217. J.H. Pei, F. Tian and T. Thundat, "Glucose biosensor based on the microcantilever", *Anal. Chem.*, 76, 292-297 (2004).
218. S. Jeon and T. Thundat, "Instant curvature measurement for microcantilever sensors", *Appl. Phys. Lett.*, 85, 1083, (2004).
219. S. Jeon, Y. Braiman and T. Thundat, "Torsional spring constant for atomic force microscope cantilever", *Appl. Phys. Lett.*, 84, 1795, (2004).
220. L.A. Pinnaduwege, V.I. Boiadjiev, G.M. Brown and T. Thundat, "Detection of hexavalent chromium in ground water using a single microcantilever sensor", *Sensor Letters*, 2, 25 (2004).
221. L.A. Pinnaduwege, D. Yi, F. Tian and T. Thundat, "Adsorption of trinitrotoluene on uncoated silicon microcantilever surfaces", *Langmuir*, 20, 2690 (2004).
222. L.A. Pinnaduwege, A. Wig, D. Hedden, A. Gehl, D. Yi, T. Thundat and R. T. Lareau, "Detection of trinitrotoluene via deflagration on a microcantilever", *J. App. Phys.*, 95, 5871 (2004).
223. A.L. Lereu, A. Passian, T. L. Ferrell and T. Thundat, "Effect of thermal variations on the Knudsen forces in the transitional regime," *Appl. Phys. Lett.*, 84(6), 1013 (2004).
224. A. Passian, A. Wig, A L. Lereu, P.G. Evans, F. Meriaudeau, T. Thundat and T.L. Ferrell, "Probing large area surface plasmon interference in thin metal films using photon scanning tunneling microscopy", *Ultramicroscopy*, 98, (2004).
225. L.A. Pinnaduwege, D.L. Hedden, A. Gehl, V.I. Boiadjiev, J.E. Hawk, R.H. Farahi, T. Thundat, E.J. Houser, S. Stepnowski, R.A. McGill, L. Deel and R.T. Lareau, "A sensitive, handheld vapor sensor based on microcantilevers", *Rev. Sci. Instrum.*, 75, 4554-4557 (2004).
226. S. Jeon, Y. Braiman and T. Thundat, "Crosstalk between bending, twisting, and buckling modes of three types of microcantilever sensors", *Rev. Sci. Inst.*, 75, 4841-4844 (2004).

227. R.H. Farahi, A. Passian, T.L. Ferrell and T. Thundat, "Microfluidic manipulation via Marangoni forces", *Appl. Phys. Lett.*, 85(18), 4237-4239 (2004).
228. H.F. Ji, Y. Feng, X.H. Xu, V. Purushotham, T. Thundat and G.M. Brown, "Photon driven nanomechanical cyclic motion", *Chemical Communications*, 22, 2532-2533 (2004).
229. H.F. Ji, X.D. Yan, J. Zhang and T. Thundat, "Molecular recognition of biowarfare agents using micromechanical sensors", *Expert Review of Molecular Diagnostics*, 4 859-866 (2004).
230. A. Passian, A.L. Lereu, E.T. Arakawa, R.H. Ritchie, T. Thundat and T.L. Ferrell, "Opto-electronics versus electro-optic modulation", *Appl. Phys. Lett.*, 85, 2703-2705 (2004).
231. A. Passian, A. Wig, A.L. Lereu, F. Meriaudeau, T. Thundat and T.L. Ferrell, "Photon tunneling via surface plasmon coupling", *Appl. Phys. Lett.*, 85, 3420-3422 (2004).
232. S. Nath, S.K. Gosh, S. Panighai, T. Thundat and T. Pal, "Synthesis of a selenium nanoparticle and its photocatalytic application for decolorization of methylene blue under UV irradiation", *Langmuir*, 20, 7880-7883 (2004).
233. X.D. Yan, H.F. Ji, Y.J. Tang, Y. Lvov and T. Thundat, "Detection of organophosphates using acetyl cholinesterase (AChE) coated microcantilevers", *Instrum. Sci. Tech.*, 32, 175-183 (2004).
234. Y.J. Tang, J. Fang, X.H. Xu, H.F. Ji, G.M. Brown and T. Thundat, "Detection of femtomolar concentrations of HF using an SiO₂ microcantilever", *Anal. Chem.*, 76, 2478-2481 (2004).
235. L.A. Pinnaduwege, T. Thundat, J.E. Hawk, D.L. Hedden, P.F. Britt, E.J. Houser, S. Stepnowski, R.A. McGill and D. Bubb, "Detection of 2,4-dinitrotoluene using microcantilever sensors", *Sensors and Actuators B*, 99 (2-3), 223-229 (2004).
236. L.A. Pinnaduwege, T. Thundat, A. Gehl, S.D. Wilson, D.L. Hedden and R.T. Lareau, "Desorption characteristics of uncoated silicon microcantilever surfaces for explosive and common nonexplosive vapors", *Ultramicroscopy*, 100, 211 (2004).
237. P.G. Datskos, T. Thundat and N.V. Lavrik, "Micro and nanocantilever sensors", *Encyclopedia Nanosci. Nanotechnol.* X, 1-10 (2004).

2003

238. A. Mehta, P. Kumar, M.D. Dadmun, J. Zheng, R.M. Dickson, T. Thundat, B.G. Sumpter and M.D. Barnes, "Oriented nanostructures from single molecules of a semiconducting polymer: polarization evidence for highly aligned intramolecular geometries", *Nanoletters*, 3(5), 603-607 (2003).
239. L.A. Pinnaduwege, A. Gehl, D.L. Hedden, G. Muralidharan, T. Thundat, R.T. Lareau, T. Sulcheck, L. Manning, B. Rogers, M. Jones and J.D. Adams, "Explosives: A microsensor for trinitrotoluene vapor", *Nature*, 425(6957), 474 (2003).
240. A. Passian, R.J. Warmack, T.L. Ferrell, and T. Thundat, "Thermal transpiration at the microscale: a Crookes cantilever", *Phys. Rev. Lett.*, 90 (12) 124503 (2003).
241. Y.M. Yang, H.F. Ji and T. Thundat, "Nerve agent detection using a Cu²⁺/L-cysteine bilayer-coated microcantilever", *J. Amer. Chem. Soc.*, 125, 1124, (2003).
242. X. Yan, Y. Lvov, T. Thundat and H. F. Ji, "A general microcantilever surface modification method using a multilayer for biospecific recognition", *Organic and Biomolecular Chemistry*, 1477-0520, 460-462 (2003).
243. S. Cherian, R.K. Gupta, B.C. Mullin and T. Thundat, "Detection of heavy metal ions using protein-functionalized microcantilever sensors", *Biosensors and Bioelectronics*, 19 (5), 411-416 (2003).
244. A. Mehta, T. Thundat, M.D. Barnes, V. Chhabra, R. Bhargava, A.P. Bartko and R.M. Dickson, "Size-correlated spectroscopy and imaging of rare-earth-doped nanocrystals", *Appl. Opt.*, 42 (12), 2132-2139 (2003).

245. A. Passian, G. Muralidharan, A. Mehta, H. Simpson, T.L. Ferrell and T. Thundat, "Manipulation of microcantilever oscillations", *Ultramicroscopy*, 97(1-4), 391-399 (2003).
246. A. Passian, R.J. Warmack, A. Wig, R.H. Farahi, F. Meriaudeau, T.L. Ferrell, and T. Thundat, "Observation of Knudsen effect with microcantilevers" *Ultramicroscopy*, 97(1-4), 401-406 (2003).
247. J. Mertens, E. Finot, T. Thundat, A. Fabre, M. Nadal, V. Eyraud and E. Bourillot, "Effects of temperature and pressure on microcantilever resonance response", *Ultramicroscopy*, 97(1-4), 119-126 (2003).
248. G. Muralidharan, A. Wig, L.A. Pinnaduwege, D. Hedden, T. Thundat and R.T. Lareau, "Adsorption-Desorption characteristics of explosive vapors investigated with microcantilevers", *Ultramicroscopy*, 97(1-4), 433-439 (2003).
249. L.A. Pinnaduwege, V. Boiadjev, J.E. Hawk and T. Thundat, "Sensitive detection of plastic explosives with self-assembled monolayer-coated microcantilevers", *Appl. Phys. Lett.*, 83 (7), 1471-1473 (2003).
250. L.A. Pinnaduwege, J.E. Hawk, V. Boiadjev and T. Thundat, "Use of microcantilevers for the monitoring of molecular binding to self-assembled monolayers", *Langmuir* 19 (19), 7841-7844 (2003).
251. A. Passian, P.G. Evans, V.K. Varma, T.L. Ferrell and T. Thundat, "Piezoresistive detection of acoustic waves", *Rev. Sci. Instrum.*, 74 (2): 1031-1035 (2003).
252. D.C. Hansen, K.M. Hansen, T.L. Ferrell and T. Thundat, "Discerning biomolecular interactions using Kelvin probe technology", *Langmuir*, 19(18), 7514-7520 (2003).
253. P. Kumar, A. Mehta, M.D. Dadmun, and T. Thundat, "Narrow-bandwidth spontaneous luminescence from oriented semiconducting polymer nanostructures", *J Phys. Chem., B* 107(26): 6252-6257 (2003).
254. B. Rogers, L. Manning, M. Jones, T. Sulchek, K. Murray, B. Beneschott, J.D. Adams, Z. Hu, T. Thundat, H. Cavazos, and S.C. Minne, "Mercury vapor detection with a self-sensing, resonating piezoelectric cantilevers", *Rev. Sci. Instrum.*, 74(11), 4899-4901 (2003).
255. Y.F. Zhang, H.F. Ji, G.M. Brown and T. Thundat, "Detection of CrO_4^{2-} using a hydrogel swelling microcantilever sensor", *Anal. Chem.*, 75(18) 4773 (2003).

2002

256. X.H. Xu, T.G. Thundat, G.M. Brown and H.F. Ji, "Detection of Hg^{2+} using microcantilever sensors", *Anal. Chem.*, 74(15), 3611-3615 (2002).
257. K.A. Stevenson, A. Mehta, P. Sachenko and T. Thundat, "Nanomechanical effect of enzymatic manipulation of DNA on microcantilever surfaces", *Langmuir*, 18(23), 8732-8736 (2002).
258. L. Maya, C.H. Chen, K.A. Stevenson and T. Thundat, "Mass spectrometric analysis of water-soluble gold nanoclusters" *J Nanopart Res.*, 4(5), 417-422 (2002).
259. A.P. Bartko, L.A. Peyser, R.M. Dickson, A. Mehta, T. Thundat, R. Bhargava and M.D. Barnes, "Observation of dipolar emission patterns from isolated $\text{Eu}^{3+}:\text{Y}_2\text{O}_3$ doped nanocrystals: New evidence for single ion luminescence", *Chemical Physics Letter*, 358(5-6) 459-465 (2002).
260. K.A. Stevenson, G. Muralidharan, L. Maya, J.C. Wells, J. Barhen and T. Thundat, "Covalent attachment of gold nanoparticles to DNA templates," *J. Nanoscience and Nanotechnology* 2, 397-404 (2002).
261. L. Maya, C.H. Chen, K.A. Stevenson, G. Muralidharan and T. Thundat, "Assembly of gold nanoclusters on silicon surfaces," *Langmuir* 18, 2392-97 (2002).

262. A. Passian, A. Wig, F. Meriaudeau, T. Thundat and T.L. Ferrell, "Potential distribution and field intensity for a hyperboloidal probe in a uniform field," *J. Vac. Sci. & Tech. B* 20(1) 76-80 (2002).
263. S. Cherian and T. Thundat, "Determination of adsorption-induced variation in the spring constant of a microcantilever", *Appl. Phys. Lett.* 80(12), 2219-2221 (2002).
264. A. Passian, G. Muralidharan, S. Kouchekian, A. Mehta, S. Cherian, T.L. Ferrell and T. Thundat, "Electronic and thermal generation of vibrations of optically excited cantilevers", *J. Appl. Phys.* 91, 4693-4700 (2002).
265. H.F. Ji and T.G. Thundat, "In situ detection of calcium ions with chemically modified microcantilevers," *Biosensors & Bioelectronics* 17(4), 337-343 (2002).
266. A. Passian, G. Muralidharan, S. Kouchekian, A. Mehta, S. Cherian, T.L. Ferrell and T.G. Thundat, "Dynamics of self-driven microcantilevers," *J. Appl. Phys.* 91(7), 4693-4700 (2002).
267. S. Cherian, A. Mehta and T. Thundat, "Investigating the mechanical effects of adsorption of Ca^{2+} ions on a silicon nitride microcantilever surface", *Langmuir*, 18(18), 6935, (2002).
268. A. Passian, A. Wig, F. Meriaudeau, T.L. Ferrell and T. Thundat, "Knudsen forces on microcantilevers", *J. Appl. Phys.*, 92(10), 6326-6333, (2002).
269. A.C. Stephan, T. Gaulden, A.D. Brown, M. Smith, L.F. Miller and T. Thundat, "Microcantilever charged- particle flux detector" *Rev. Sci. Instrum.*, 73, 36-41 (2002).
270. A.C. Stephan, E. Finot, H.F. Ji, L.A. Pinnaduwege and T. Thundat, "Micromechanical measurement of active sites on silicon nitride using surface free energy variation", *Ultramicroscopy*, 91(1-4), 1-8 (2002).
271. G. Muralidharan, D. M. Nicholson, S. Rajic, T. M. Daniels-Race, H. Li, T. Thundat and P. G. Datskos, "An atomic force microscope-based investigation of vertical transport through GaAs/GaAlAs/ InAlAs/GaAs step-barrier heterostructures", *Ultramicroscopy*, 91, 133-138 (2002).
272. A. Subramanian, P.I. Oden, S.J. Kennel, K.B. Jacobson, R.J. Warmack, T. Thundat and M.J. Doktycz, "Glucose bio-sensing using an enzyme-coated microcantilever", *Appl. Phys. Lett.*, 81(2), 385 (2002).
273. P.G. Datskos and T. Thundat, "Nanocantilever signal transduction using electron transfer", *J. Nanoscience and Nanotechnology*, 2, 369 –373 (2002).
274. T.G. Thundat and G.M. Brown, "Environmental monitoring using microcantilever sensors", *Business Briefing: Life Sciences Technology* 58-62 (2002).

2001

275. G. Wu, R.H. Datar, K.M. Hansen, T. Thundat, R. J. Cote and A. Majumdar, "Bioassay of prostate-specific antigen (PSA) using microcantilevers", *Nature Biotechnology* 19 (9), 856-860 (2001).
276. Z. Hu, T. Thundat and R.J. Warmack, "Investigation of adsorption and absorption-induced stresses using microcantilever sensors", *J. Appl. Phys.*, 90, 427-431 (2001).
277. A. Passian, A. Wig, F. Meriaudeau, M. Buncick, T. Thundat and T.L. Ferrell, "Electrostatic force density for a scanned probe above a charged surface", *J. Appl. Phys.*, 90, 10100-1016 (2001).
278. K.M. Hansen, H.F. Ji, G.H. Wu, R. Datar, R. Cote, A. Majumdar and T. Thundat, "Cantilever-based optical deflection assay for discrimination of DNA single-nucleotide mismatches", *Anal. Chem.*, 73, 1567-1571 (2001).
279. A. Mehta, S. Cherian, D. Hedden and T. Thundat, "Manipulation and controlled amplification of Brownian motion of microcantilever sensors", *Appl. Phys. Lett.*, 78, 1637–1640 (2001).

280. F. Meriaudeau, T.L. Ferrell, E.T. Arakawa, A. Wig, A. Passion, T. Thundat, W.-J. Shen, S. Patel, F.B. Kraemer, "Study of different hormone-sensitive lipase concentrations using a surface plasmon resonance sensor", *Sensors and Actuators B*, 73 (2-3), 192-198 (2001).
281. E. Finot, T. Thundat, E. Lesniewska and J.P. Goudonnet, "Measuring magnetic susceptibilities of nanogram quantities of materials using microcantilevers", *Ultra Microscopy*, 86, 175-180 (2001).
282. G.H. Wu, H.F. Ji, K. Hansen, T. Thundat, R. Datar, R. Cote, M.F. Hagan, A. Chakraborty and A. Majumdar, "Origin of nanomechanical cantilever motions generated from biomolecular interactions", *PNAS*, 981560-1564 (2001).
283. H.F. Ji, T. Thundat, R. Dabestani, G.M. Brown, P.F. Britt and P.V. Bonnesen, "Ultrasensitive detection of CrO_4^{2-} using microcantilever sensors", *Anal. Chem.*, 73, 1572-1577 (2001).
284. H.F. Ji, K.M. Hansen, Z. Hu and T. Thundat, "Detection of pH variation using modified microcantilever sensors", *Sensors and Actuators B* 72, 233-238 (2001).
285. G. Muralidharan, A. Mehta, S. Cherian and T. Thundat, "Analysis of amplification of thermal vibrations of a microcantilever", *J. Appl. Phys.*, 89, 4587-91 (2001).

2000

286. T. Thundat, E. Finot, Z. Hu, R.H. Ritchie, G. Wu and A. Majumdar, "Chemical sensing in Fourier space", *Appl. Phys. Lett.*, 77, 4061 (2000).
287. M.D. Barnes, A. Mehta, T. Thundat, R.N. Bhargava, V. Chhabra and B. Kulkarni, "On-Off blinking and multiple bright states of single europium ions in $\text{Eu}^{3+}:\text{Y}_2\text{O}_3$ nanocrystals", *J. Phys. Chem.*, B104, 6099-6102 (2000).
288. Ji. Hai-Feng, E. Finot, R. Dabestani, T. Thundat, G.M. Brown and P. Britt, "A novel self-assembled monolayer (SAM) coated microcantilever for low level Cs ion Detection", *Chem. Commun.*, 6, 457-458 (2000).
289. L. Maya, G. Muralidharan, T. Thundat and E.A. Kenik, "Polymer-mediated assembly of gold nanoclusters" *Langmuir*, 16, 9151-9154 (2000).

1999

290. T. Thundat and L. Maya, "Monitoring chemical and physical changes on sub-nanogram quantities of platinum oxide", *Surf. Sci. Lett.*, 430, L546 (1999).
291. D.H. Lowndes, C.M. Rouleau, T.G. Thundat, G. Duscher, E.A. Kenik and S.J. Pennycook, "Silicon and zinc telluride nanoparticles synthesized by low energy density pulsed laser ablation into ambient gases", *J. Mat. Res.* 14(2), 359-370 (1999).
292. L. Maya, L.M. Anovitz, T. Thundat and C.S. Yust, "Optical and mechanical consequences of microstructural alteration of alpha platinum dioxide films", *J. Vac. Sci. Technol.* A17, 1036 (1999).
293. T. Pal, T. Thundat and A. Pal "Nanostrings of silver", *J. Material Science Lett.* 18, 1391-1394 (1999).
294. L. Maya, G.M. Brown and T. Thundat, "Porous platinum Electrodes derived from the reduction of sputtered platinum dioxide films", *J. Appl. Electrochemistry*, 29, 883-888 (1999).

1998

295. G. Eres, F.Y.C. Hui, T. Thundat and D.C. Joy, "Nano-fabrication by direct epitaxial growth", *Microelectronics Engineering*, 42, 519-522 (1998).
296. D.H. Lowndes, C.M. Rouleau, T. Thundat, G. Duscher, E.A. Kenik and S.J. Pennycook, "Silicon and zinc telluride nanoparticles synthesized by pulsed laser ablation: Size distributions and nanoscale structure", *Applied Surface Science*, 127-129, 355 (1998).

297. L. Maya, L. Riester, T. Thundat and C.S. Yust, "Characterization of sputtered amorphous platinum dioxide", J. Appl. Physics, 84, 6382-6386 (1998).

1997

298. T. Thundat, P.I. Oden and R.J. Warmack, "Microcantilever Sensors", Microscale Thermophysical Engineering 1(3), 185 (1997).
299. G. Eres, F.Y.C. Hui, T. Thundat and D.C. Joy, "Direct epitaxial growth of thin-film structures" J. Vac. Sci. Technol. B15, 2934 (1997).
300. K.M. Chen, D.E. Jesson, S.J. Pennycook, T. Thundat, and R.J. Warmack, "Critical nuclei shapes in the stress driven 2D to 3D transition", Phys. Rev., B56, R1700 (1997).
301. D.E. Jesson, K.M. Chen, S.J. Pennycook, T. Thundat and R.J. Warmack, "Mechanism of strain-induced roughening and dislocation multiplication in Si-Ge thin films", J. Electronics Materials, 26, 1039-1047 (1997).
302. P.D. Persans, P.W. Deelman, K.L. Stokes, L.J. Schowalter, A. Byrne and T. Thundat, "Optical studies of Ge islanding on Si (111)", Appl. Phys. Lett. 70, 472-474 (1997).
303. D.P. Allison, P.S. Kerper, M.J. Doktycz, T. Thundat, P. Modrich, F. Larimer, D. Johnson, P.R. Hoyt, M. Mucenski and R.J. Warmack, "Mapping individual cosmid DNAs by direct AFM imaging", Genomics, 41, 379-384 (1997).
304. P.W. Deelman, L.J. Schowalter and T. Thundat, "*In-situ* measurements of temperature-dependent strain relaxation of Ge/Si(111)", J. Vac. Sci. Technol., A15(3), 930-935 (1997).
305. P. M. Menon, C.S. Feigerle, R.E. Clausing, L. Heatherly and T. Thundat, "Indexing the hopper shaped {111} face produced in chemical vapor deposited diamond", Appl. Phys. Lett., 71, 3078 (1997).

1996

306. L. Maya, M. Paranthaman, J.R. Thompson, T. Thundat and R.J. Stevenson, "Ferromagnetic nanocomposite films of cobalt in a ceramic matrix formed by thermal decomposition of cobalt nitride, CoN, precursor", J. Appl. Phys., 79, 7905 (1996).
307. L. Maya, T. Thundat, J. R. Thompson and R. J. Stevenson, "Localized heating of nickel nitride/aluminum nitride nanocomposite films for data storage", Appl. Phys. Lett., 67, 3034-36 (1996).
308. P.I. Oden, G.Y. Chen, R.A. Steele, R.J. Warmack and T. Thundat, "Viscous drag measurements utilizing microfabricated cantilevers", Appl. Phys. Lett., 68, 3814-16 (1996).
309. D.P. Allison, P.S. Kerper, M.J. Doktycz, J.A. Spain, P. Modrich, F.W. Larimer, T. Thundat and R.J. Warmack, "Direct atomic force microscope imaging of *Eco*RI endonuclease site specifically bound to plasmid DNA molecules", PNAS, 93, 8826 (1996).
310. P.W. Deelman, T. Thundat and L.J. Schowalter, "AFM and RHEED study of Ge islanding on Si(111) and Si(100)", Appl. Surf. Sci., 104, 510 (1996).
311. P.G. Datskos, P.I. Oden, T. Thundat, E.A. Wachter, R.J. Warmack and S.R. Hunter, "Remote infrared radiation detection using piezoresistive microcantilevers", Appl. Phys. Lett., 69(20), 2986-88 (1996).
312. P.I. Oden, P.G. Datskos, T.G. Thundat and R.J. Warmack, "Uncooled thermal imaging using a piezoresistive microcantilever", Appl. Phys. Lett., 69(21), 3277-79 (1996).
313. E.A. Wachter, T. Thundat, P.G. Datskos, P.I. Oden, S.L. Sharp and R.J. Warmack, "Remote optical detection using microcantilevers," Rev. Sci. Instrum., 67(10), 3434-39 (1996).

314. G.Y. Chen, R.J. Warmack, P.I. Oden and T. Thundat, "Transient response of tapping scanning force microscopy in liquids," *J. Vac. Sci. Technol.*, B14(2), 1313-17 (1996).
315. G.Y. Chen, R.J. Warmack, A. Huang and T. Thundat, "Harmonic response of near-contact scanning force microscopy," *J. Appl. Phys.*, 78(3), 1465-9 (1996).
316. D. Welipitiya, Y.L. He, J. Zhang, P.I. Oden, T. Thundat, R.J. Warmack, I. Gobulukoglu, Z.S. Shan, D.J. Sellmyer and P.A. Dowben, "Fabrication of large arrays of micron-scale magnetic features by selective-area organometallic chemical-vapor-deposition," *J. Appl. Phys.*, 80(3), 1867-71 (1996).
317. D.E. Jesson, K.M. Chen, S.J. Pennycook, T. Thundat and R.J. Warmack, "Morphological evolution of strained films by cooperative nucleation", *Phys. Rev. Lett.*, 77, 1330 (1996).
318. K.M. Chen, D.E. Jesson, S.J. Pennycook, T. Thundat and R.J. Warmack, "New insights into the kinetics of the stress-driven two-dimensional to three-dimensional transition", *J. Vac. Sci. Technol. B* 14, 2199 (1996).

1995

319. L. Maya, M. Paranthaman, T. Thundat and M.L. Bauer, "Gold oxide as a precursor to gold/silica nanocomposites", *J. Vac. Sci. Technol.*, B14, 15-21 (1995).
320. K.M. Chen, D.E. Jesson, S.J. Pennycook, M. Mostoller, T. Kaplan, T. Thundat and R.J. Warmack, "Step instabilities: a new kinetic route to 3D growth", *Phys. Rev. Lett.* 75, 1582 (1995).
321. L. Weidan, T. Thundat, T. Anan and L.J. Schowalter, "Surface morphology of epitaxial $\text{CaF}_2/\text{Si}(111)$ and its influence on subsequent GaAs epitaxy", *J. Vac. Sci. Technol. B: Microelectronics and Nanometer Structures*, 13(2), 670-673 (1995).
322. T. Thundat, E.A. Wachter, S.L. Sharp and R.J. Warmack, "Detection of mercury vapor using resonating microcantilevers", *Appl. Phys. Lett.*, 66, 1695-97 (1995).
323. T. Thundat, G.Y. Chen, R.J. Warmack, D.P. Allison and E.A. Wachter, "Vapor detection using resonating microcantilevers", *Anal. Chem.*, 67, 519-21 (1995).
324. T. Thundat, S. L. Sharp, W. G. Fisher, R. J. Warmack and E. A. Wachter, "Micromechanical radiation dosimeter", *J. Appl. Phys.*, 66, 1563-65 (1995).
325. G.Y. Chen, T. Thundat, E.A. Wachter and R.J. Warmack, "Adsorption-induced surface stress and its effects on resonance frequency of microcantilevers", *J. Appl. Phys.*, 77, 3618-22 (1995).
326. T.J. Kreutz, R.E. Clausing, L. Heatherly, Jr., R.J. Warmack, T. Thundat, C.S. Feigerle and K. Wandelt, "Growth mechanisms and defects in boronated CVD diamonds as identified by scanning tunneling microscopy", *Phys. Rev.*, B51, 14554-558 (1995).
327. L.J. Schowalter, K. Yang and T. Thundat, "Atomic step organization in homoepitaxial growth on GaAs(111)B substrates", *Scanning Microscopy*, 8(4), 889-96 (1995).
328. E.A. Wachter and T. Thundat, "Micromechanical sensor for chemical and physical measurements", *Rev. Sci. Instrum.*, 66, 3662-67 (1995).
329. D.E. Jesson, K. Chen, S.J. Pennycook, T. Thundat and R.J. Warmack, "Crack-like sources of dislocation nucleation and multiplication in thin films", *Science*, 1161-3 (1995).
330. J.Chen, D.E. Jesson, S.J. Pennycook, M. Mostoller, T. Kaplan, T. Thundat and R.J. Warmack, "Step instabilities: A new kinetic route to 3D growth", *Phys. Rev. Lett.*, 1582-5 (1995).
331. G.Y. Chen, R.J. Warmack, A. Huang and T. Thundat, "Harmonic response of near-contact scanning force microscopy", *J. Appl. Phys.*, 78, 1465 (1995).
332. K.M. Chen, D.E. Jesson, S.J. Pennycook, T. Thundat and R.J. Warmack, "Cuspidal pit formation during the growth of $\text{Si}_x\text{Ge}_{1-x}$ strained layers", *Appl. Phys. Lett.*, 66(1), 34-6 (1995).

1994

333. T. Thundat, R.J. Warmack, G.Y. Chen and D.P. Allison, "Thermal and ambient-induced deflections of scanning force microscope cantilevers", *Appl. Phys. Lett.*, 64, 2894-96 (1994).
334. K. Yang, L.J. Schowalter and T.G. Thundat, "Diffusion length of Ga adatoms on GaAs (111) surface in the $\sqrt{19} \times \sqrt{19}$ reconstruction growth regime", *Appl. Phys. Lett.*, 64, 1641-43 (1994).
335. K. Maywald, R.J. Pylkki, L.J. Balk, T. Thundat, A. Majumdar and M.A. George, "Imaging of local thermal and electrical conductivity with scanning force microscopy", *Scanning Microscopy*, 8(2), 181-188 (1994).
336. T. Thundat, R.J. Warmack, D.P. Allison, K.B. Jacobson, N.J. Tao, J. Vesenka, S.M. Lindsay, H.J.K. Hober, L.A. Bottomley and C. Rabke, "Critical point mounting of kinetoplast DNA for atomic force microscopy", *Scanning Microscopy*, 8(1), 23-30 (1994).
337. D.H. Lowndes, M. DeSilva, M.J. Godbole, A.J. Pedraza, T. Thundat and R.J. Warmack, "Smooth polycrystalline ceramic substrates with enhanced metal adhesion by pulsed excimer laser processing", *Appl. Phys. Lett.*, 64, 1791-93 (1994).
338. G.Y. Chen, R.J. Warmack, T. Thundat, D.P. Allison and A. Huang, "Resonance response of scanning force microscope cantilevers", *Rev. Sci. Instrum.*, 65(8), 2532-37 (1994).
339. R.J. Warmack, X.Y. Zheng, T. Thundat and D.P. Allison, "Friction effects in atomic force microscopy", *Rev. Sci. Instrum.*, 65(2), 394-99 (1994).
340. Z.C. Wu, E.T. Arakawa, T. Inagaki, T. Thundat and L.J. Schowalter, "Experimental observations of a long-range surface mode in metal island films", *Phys. Rev. B* 49(11), 7782-85 (1994).
341. L.J. Schowalter, K. Yang and T. Thundat, "Atomic step organization in homoepitaxial growth on GaAs(111)B substrates", *J. Vac. Sci. Technol.*, B12(4), 2579-83 (1994).
342. T. Thundat, D.P. Allison and R.J. Warmack, "Stretched DNA structures observed with atomic force microscopy", *Nucleic Acids Research*, 22, 4224-28 (1994).

1993

343. I. Vesenka, S. Manne, G. Yang, C.J. Bustamante, E. Henderson, R. Balhorn, B.L. Blackford, Z. Mulhern, J. Yang, T. Thundat and F. Zenhausern, "Humidity effects on atomic force microscopy of gold-labeled DNA on mica", *Scanning Microscopy*, 7(3), 781-788 (1993).
344. V.N. Morozov, N.C. Seeman, N.R. Kalienbach, T.G. Thundat, H.J.K. Horber, R. Balhorn, S.M. Lindsay and R.L. McCarley, "New methods for depositing and imaging molecules in scanning tunneling microscopy", *Scanning Microscopy*, 7(3), 757-779 (1993).
345. T. Thundat, X.-Y. Zheng, G.Y. Chen and R. J. Warmack, "Role of relative humidity in atomic force microscopy imaging", *Surface Science*, 294(1-2), L939-L943 (1993).
346. T. Thundat, X.-Y. Zheng, G.Y. Chen, S.L. Sharp, R.J. Warmack and L.J. Schowalter, "Characterization of atomic force microscopy tips by adhesion force measurements", *Appl. Phys. Letters*, 63(15), 2150 (1993).
347. T. Thundat, R.J. Warmack, D. Ding and R.N. Compton, "Atomic force microscope investigation of C_{60} adsorbed on silicon and mica", *Appl. Phys. Lett.*, 63, 891-3 (1993).
348. D.P. Allison, T. Thundat, K.B. Jacobson and R.J. Warmack, "Imaging entire genetically functional DNA molecules with the scanning tunneling microscope", *J. Vac. Sci. Technol.*, A(11), 816-9 (1993).
349. T. Thundat, X.Y. Zheng, G.Y. Chen, S.L. Sharp, R.J. Warmack and L.J. Schowalter, "Characterization of AFM tips by adhesion force measurements", *J. Appl. Phys. Lett.*, 63, 2150-52 (1993).

350. T. Thundat, B.C. Sales, B.C. Chakoumakos, L.A. Boatner, D.P. Allison and R.J. Warmack, "Atomic layer-by-layer surface removal by force microscopy", *Surf. Sci. Lett.*, 293, L863-69 (1993).
351. D.P. Allison, M.J. Doktycz, T. Thundat, K.B. Jacobson, G.M. Brown, and R.J. Warmack, "Scanning probe microscopy of immobilized DNA", *Polymer Reprints*, 34(2), 332-33 (1993).
352. T. Thundat, R.J. Warmack, D.P. Allison, M.J. Doktycz and K.B. Jacobson, "Atomic force microscopy of single-stranded and double-stranded deoxyribonucleic acid", *J. Vac. Sci. Technol.*, A11(4), 824-828 (1993).

1992

353. W.G. Morris, D.M. White, J.L. Gordon and T. Thundat, "Polybutadiene emulsion particles observed by scanning tunneling microscopy", *J. Vac. Sci. Technol.*, A10, 623 (1992).
354. T. Thundat, X.-Y. Zheng, S.L. Sharp, D.P. Allison, R. J. Warmack, D.C. Joy, T.L. Ferrell, "Calibration of atomic force microscope tips using biomolecules", *Scanning Microscopy*, 6(4), 903-910 (1992).
355. T. Thundat, D.P. Allison, R.J. Warmack, G.M. Brown, K.B. Jacobson, J.J. Schrick, T.L. Ferrell, "Atomic force microscopy of DNA on mica and chemically modified mica", *Scanning Microscopy*, 6(4), 911-918 (1992).
356. D.P. Allison, R.J. Warmack, L.A. Bottomley, T. Thundat, G.M. Brown, R.P. Woychik, J.J. Schrick, K.B. Jacobson and T.L. Ferrell, "Scanning tunneling microscopy of DNA: A novel technique using radiolabeled DNA to evaluate chemically mediated attachment of DNA to surfaces", *Ultramicroscopy*, 42-44, Part B, 1088-1094 (1992).
357. T. Thundat, D.P. Allison, R.J. Warmack and T.L. Ferrell, "Imaging isolated strands of DNA molecules by atomic force microscopy", *Ultramicroscopy*, 42-44, Part B, 1101-1106 (1992).
358. P.I. Oden, L.A. Nagahara, J.J. Graham, J. Pan, N.J. Tao, Y. Li, T.G. Thundat, J.A. DeRose and S.M. Lindsay, "Atomic force and scanning tunneling microscopy observations of whisker crystals and surface modification on evaporated gold films", *Ultramicroscopy*, 42-44, Part A, 580-586 (1992).
359. T. Thundat, R.J. Warmack, D.P. Allison and T.L. Ferrell, "Electrostatic spraying of DNA molecules for investigation by scanning tunneling microscopy", *Ultramicroscopy*, 42-44, Part B, 1083-1087 (1992).
360. L.A. Bottomley, J.N. Haseltine, D.P. Allison, R.J. Warmack, T. Thundat, R.A. Sachleben, G.M. Brown, R.P. Woychik, K.B. Jacobson and T.L. Ferrell, "Scanning tunneling microscopy of DNA: The chemical modification of gold surfaces for immobilization of DNA", *J. Vac. Sci. Technol.*, A10, 591 (1992).
361. T. Thundat, R.J. Warmack, D.P. Allison, L.A. Bottomley, A.J. Lourenco and T.L. Ferrell, "Atomic force microscopy of deoxyribonucleic acid strands adsorbed on mica: The effect of humidity on apparent width and image contrast", *J. Vac. Sci. Technol.*, A10, 630 (1992).
362. T. Thundat, D.P. Allison, R.J. Warmack and T.L. Ferrell, "Imaging isolated strands of DNA molecules by atomic force microscopy", *Ultramicroscopy*, 42-44, 1083-87 (1992).
363. D.P. Allison, R.J. Warmack, L.A. Bottomley, T. Thundat, G.M. Brown, R.P. Woychik, J.J. Schrick, K.B. Jacobson and T.L. Ferrell, "Scanning tunneling microscopy of DNA: A novel technique using Radio-labeled DNA to evaluate chemically mediated attachment of DNA to surfaces", *Ultramicroscopy*, 42-44, 1088-94 (1992).

364. T. Thundat, R.J. Warmack, D.P. Allison and T.L. Ferrell, "Electrostatic spraying of DNA molecules for investigation by scanning tunneling microscopy", *Ultramicroscopy*, 42-44, 1083-87 (1992).
365. P.I. Oden, L.A. Nagahara, J. Graham, J. Pan, N.J. Tao, T. Thundat, J.A. DeRose and S.M. Lindsay "Atomic force and scanning tunneling microscopy observations of whisker crystals and surface modification on evaporated gold films", *Ultramicroscopy*, 42-44, 580-86 (1992).
366. G.M. Brown, T. Thundat, D.P. Allison and R.J. Warmack, "Electrochemical and *in-situ* atomic force microscopy and scanning tunneling microscopy investigations of titanium in oxalic acid solutions", *J. Vac. Sci. Technol.*, A10(5), 3001-6 (1992).
367. D.P. Allison, L.A. Bottomley, T. Thundat, R.J. Warmack, G.M. Brown and K.B. Jacobson, "Immobilization of DNA for scanning probe microscopy", *PNAS*, 89, 10129-33 (1992).
368. T. Thundat, X.Y. Zheng, S.L. Sharp, D.P. Allison, R.J. Warmack, D.C. Joy and T.L. Ferrell, "Calibration of atomic force microscope tips using biomolecules", *Scanning Microscopy*, 6, 903-10 (1992).
369. T. Thundat, D.P. Allison, R.J. Warmack, G.M. Brown, K.B. Jacobson and T.L. Ferrell, "Atomic force microscopy of DNA on mica and chemically modified mica", *Scanning Microscopy*, 6, 911-18 (1992).
370. T. Thundat, X.Y. Zheng, D.P. Allison and R.J. Warmack, "Role of relative humidity in atomic force microscopy imaging", *Surf. Sci. Lett.*, 294, L939-43 (1992).

1991

371. J.A. DeRose, T. Thundat, L.A. Nagahara and S.M. Lindsay, "Gold epitaxially grown on mica: Conditions for large area flat faces", *Surf. Sci.*, 256(1-2), 102-108 (1991).
372. P.I. Oden, T. Thundat, L.A. Nagahara, S.M. Lindsay, G.B. Adams and O.F. Sankey, "Superperiodic features observed on graphite under solution with scanning tunneling microscopy", *Surface Science* 254(1-3), L454-L459, (1991).
373. J.P. Carrejo, T. Thundat, L.A. Nagahara, S.M. Lindsay and A. Majumdar, "Scanning tunneling microscopy investigations of polysilicon films under solution", *J. Vac. Sci. Technol.*, B9, 955 (1991).
374. N. Mainsbridge and T. Thundat, "Scanning tunneling microscopy of chloroplasts", *J. Vac. Sci. Technol.*, B9, 1259 (1991).
375. Y.L. Lyubchenko, S.M. Lindsay, J.A. DeRose and T. Thundat, "A technique for stable adhesion of DNA to a modified graphite surface for imaging by scanning tunneling microscopy", *J. Vac. Sci. Technol.*, B9, 1288 (1991).
376. S.M. Lindsay, Y. Li, J. Pan, T. Thundat, L.A. Nagahara, P.I. Oden, J.A. DeRose, U. Knipping and J.W. White, "Studies of electrical properties of large molecular adsorbates", *J. Vac. Sci. Technol.*, B9, 1096 (1991).
377. J.A. DeRose, S.M. Lindsay, L.A. Nagahara, P.I. Oden and T. Thundat, "Electrochemical deposition of nucleic acid polymers for scanning probe microscopy", *J. Vac. Sci. Technol.*, B9, 1166 (1991).
378. P.I. Oden, T. Thundat, L.A. Nagahara, S.M. Lindsay, G. Adams and O.F. Sankey, "Superperiodic features observed on graphite under solution with STM", *Surf. Sci.*, 254, L454 (1991).

1990

379. T. Thundat, L.A. Nagahara, P.I. Oden and S.M. Lindsay, "Direct observation of bioelectrochemical process by scanning tunneling microscopy", *J. Vac. Sci. Technol.*, A8, 645 (1990).

380. T. Thundat, L.A. Nagahara, P.I. Oden, S.M. Lindsay, M.A. George and W.S. Glausinger, "Modification of tantalum surfaces by scanning tunneling microscopy in an electrochemical cell", *J. Vac. Sci. Technol.*, A8, 3537 (1990).
381. T. Thundat, L.A. Nagahara, and S.M. Lindsay, "Scanning tunneling microscopy studies of semiconductor electrochemistry", *J. Vac. Sci. Technol.*, A8, 539 (1990).
382. M.A. George, W.S. Glausinger, T. Thundat and S.M. Lindsay, "Electrical, spectroscopic, and morphological investigation of chromium diffusion through gold films", *Thin Solid Films*, 189(1), 59-72 (1990).
383. T. Thundat, L.A. Nagahara, S.M. Lindsay, M.A. George and W.S. Glausinger, "Scanning tunneling microscopy tip field induced surface modification of Ta surfaces in aqueous solutions", *J. Vac. Sci. Technol.*, A8, 3537 (1990).
384. T. Thundat, J. Zegenhagen, K. Thygesen and W.M. Gibson, "Electrochemically deposited Ni on Ge(111) surface investigated with x-ray standing waves", *Surf. Sci.*, 230, 205 (1990).
385. M.A. George, Q.C. Bao, I.W. Sorensen, W.S. Glausinger and T. Thundat, "Thermally-induced changes in electrical and topographical changes in the resistance, microstructure and adhesion of thin gold films on Si/SiO₂", *J. Vac. Sci. Technol.*, A8, 1491-1497 (1990).
386. L.A. Nagahara, T. Thundat and S.M. Lindsay, "Nanolithography on semiconductor surfaces under an etching solution", *Appl. Phys. Lett.*, 57, 270 (1990).
387. L.A. Nagahara, T. Thundat, P.I. Oden, S.M. Lindsay, and R.L. Rill, "Electrochemical deposition of molecular adsorbates for in situ scanning probe microscopy", *Ultramicroscopy*, 33, 107-116 (1990).
388. S.M. Mohapatra, B.N. Dev, L. Luo, T. Thundat, W.M. Gibson, K.C. Misra, N. Sahoo and T.P. Das, "Electronic structure and associated properties of adsorbed atoms on silicon surfaces including fine structure interactions", *Reviews of Solid State Science*, Vol. 4, 873 (1990).

1989

389. S.M. Lindsay, T. Thundat, L.A. Nagahara, U. Knipping and R. Rill, "Images of DNA double helix in water", *Science*, 244, 1063 (1989).
390. L.A. Nagahara, T. Thundat and S.M. Lindsay, "Preparation and characterization of STM tips for electrochemical studies", *Rev. Sci. Instrum.*, 60, 3128 (1989).
391. S.M. Lindsay, L.A. Nagahara, T. Thundat, U. Knipping, R.L. Rill, B. Drake, C.B. Prater, A.L. Wisenborn, S.A.C. Gould and P.K. Hansma, "STM and AFM images of nucleosome DNA under water", *J. Biomol. Struct. Dyn.*, 7, 279 (1989).
392. S.M. Lindsay, L.A. Nagahara, T. Thundat and P.I. Oden, "Sequence, packing and nanometer scale structure in STM images of nucleic acids under water", *J. Struct. Dyn.*, 7, 289 (1989).

1988

393. T. Thundat, S.M. Mohapatra, B.N. Dev, W.M. Gibson and T.P. Das, "Experimental and theoretical investigation of chemisorbed Ga on Si(111)", *J. Vac. Sci. Technol.*, A6, 681 (1988).
394. B. Barris, U. Knipping, S.M. Lindsay, L.A. Nagahara and T. Thundat, "Images of DNA fragments in an aqueous environment by scanning tunneling microscopy", *Biopolymers*, 27, 1691 (1988).
395. L.A. Nagahara, S.M. Lindsay, T. Thundat and U. Knipping, "Tip-bias induced surface modification on gold surfaces", *J. Microsc.*, 152, 145 (1988).
396. S.M. Lindsay, T. Thundat and L.A. Nagahara, "Adsorbate deformation as a contrast mechanism in STM biopolymers in an aqueous medium", *J. Microsc.*, 152, 213 (1988).
397. M.A. George, T. Thundat, S.M. Lindsay and W.S. Glausinger, "An investigation of mercury adsorption in thin gold films", *J. Microsc.*, 152, 703 (1988).

1987

398. H.S. Cheng, L. Luo, M. Okamoto, T. Thundat, S. Hasimoto and W.M. Gibson, "Lattice location of chemisorbed bromine on Si(111) thin crystal by mega-electron-vol $^4\text{He}^+$ transmission ion channeling", *J. Vac. Sci. Technol.*, A5, 607 (1987).
399. T. Thundat, J. Zegenhagen and W.M. Gibson, "Chemically deposited Ni on Si(111) investigated with x-ray standing waves", *J. Vac. Sci. Technol.*, A5, 1484 (1987).

1985

400. B.N. Dev, T. Thundat and W.M. Gibson, "An x-ray standing wave interference spectrometric analysis of chemisorption of Se on Si(111) and Si(220) surfaces", *J. Vac. Sci. Technol.*, A(3), 946 (1985).
401. B.N. Dev, V. Aristov, N. Hertel, T. Thundat and W.M. Gibson, "An x-ray standing wave interference spectrometric (XSWIS) analysis of bromine adsorbed on cleaved silicon from solution", *J. Vac. Sci. Technol. A* (3), 975 (1985).
402. B.N. Dev, V. Aristov, N. Hartel, T. Thundat and W.M. Gibson, "Chemisorption of Bromine on cleaved Si(111) surface: An x-ray standing wave interference spectrometric analysis", *B Surf. Sci.*, 163, 457 (1985).

Conference Proceedings:

1. I. Chae, C.W. Van Neste, Ozone alteration for background references using QCL based mid infrared standoff spectroscopy, MICRO- AND NANOTECHNOLOGY SENSORS, SYSTEMS, AND APPLICATIONS VII, Proceedings of SPIE, Edited by: George, T; Dutta, AK; Islam, MS, Volume: 9467, Article Number: 94672P, DOI: 10.1117/12.2178606 (2015).
2. S. Kim, D Lee, T Thundat, Miniaturization of Photothermal Cantilever Deflection Spectroscopy with an Electrical Readout, *ECS Transactions* 64 (1), 19-24, (2014)
3. "Piezoelectric response of novel multiferroic microcantilevers", K. Prahsanthi, T. Thundat and V.R. Palkar, *IEEE Proc.* 6014157 (2011).
4. "Trace explosive detection by micro differential thermal analysis", J. Olsen, L. Senesac, T. Thundat and A. Boisen, *IEEE MEMS*, 984-987 (2011).
5. "Standoff chemical imaging using IR spectroscopy", M. Morales-Rodriguez, L.R. Senesac, T. Thundat, M.K. Rafailov and P.G. Datskos, *Proc. SPIE* 80312 (2011).
6. "Differential thermal analysis microsystem for explosive detection", J. Olsen, A. Grave, L. Senesac, T. Thundat and A. Boisen, *Proc. SPIE* 80312 (2011).
7. "X-sense – a miniaturized multi-sensor platform for explosive detection", M.S. Schmidt, N. Kostesha, F. Bosco, J.K. Olsen, C Johnsen, K.A. Nielsen, J.O. Jeppesen, T.S. Alstrom, J. Larsen and T. Thundat, *Proc. SPIE* 8031, 803123 (2011).
8. "Xsense: using nanotechnology to combine detection methods for high sensitivity handheld explosive detectors", M. Schmidt, N. Kostesha, F. Bosco, J. Olsen, C Johnsen, K. Nielsen, J. Jeppesen, T. Alstrom, J. Larnse, M. Jakobsen, T. Thundat and A. Boisen, *Proc. SPIE* 7664, 76641H (2010).
9. "Micro-calorimetric sensor for trace explosive particle detection", J.K. Olsen, A. Greve, N. Privorotskaya, L. Senesac, T. Thundat, W.P. King and A. Boisen, *Proc. SPIE* 7679, 767929 (2010).
10. "Microfluidic device for studying tumor cell extravasation in cancer metastasis", B.E. Reese, S. Zheng, B. Evans, R.H. Datar, T. Thundat and H. Lin, *BSEC Proceedings, Tennessee* (2010).

11. "Nonlinear interaction force analysis of microcantilevers utilized in atomic force microscopy", S. Eslami, N. Jalili, A. Passian, L. Tetard and T. Thundat, ASME Proceedings, Part A, 781-788 (2010).
12. "Room-temperature nanocatalytic reaction modeling and its applications in direct energy conversion", Z. Hu, C-X. Lin, M. Sekachev, T.G. Thundat and C. Narula, ECS Trans 16(26), 61 (2009).
13. "Nonlinear interaction force analysis of microcantilevers utilized in atomic force microscopy", S. Eslami, N. Jalili, A. Passian, L. Tetard and T. Thundat, ASME Conf. Proc., 781 (2009).
14. "Photothermal spectroscopy using microfabricated cantilever sensors", T.G. Thundat, L.R. Senesac, C. Van Neste, A. Krause and E. Finot, ECS Trans. 16(11), 137, Hawaii (2008).
15. "Evaluation of chemical reaction kinetics using a thermally active piezoresistive microcantilever array", A. Choudhury, R. Vujanic, P.J. Hesketh, T. Thundat and Z. Hu, Proc. IEEE Conf. (MEMS), 228-231, Arizona (2008).
16. "Receptor-free nanomechanical sensors", L.R. Senesac, D. Yi and T. Thundat, Proc. SPIE 6463, 646302 (2007).
17. "Design and testing of single and double sided cantilevers for chemical sensing", A. Choudhury, P.J. Hesketh, R. Vujanic, T.G. Thundat and Z. Hu, Proc. IEEE Sensors, 1432 – 1435 (2007).
18. "Microcantilever biosensors", R. Datar, A. Passian, R. Desikan and T. Thundat, Proc. IEEE Sensors, 5 (2007).
19. "Electrochemical cantilever sensors and scanning probe microscopy", T. Thundat and G.M. Brown, Proc. IEEE Sensors, 707 (2007).
20. "Low-noise chemical detection with a piezoresistive microcantilever array", P.J. Hesketh, A. Choudhury, Z. Hu, T. Thundat and S.R. Newcomb, ECS Trans 3(1), 473, Mexico (2006).
21. "Molecular recognition of chem/biowarfare agents using micromechanical sensors", H.-F. Ji, X. Yan, Y. Lu, H. Du and T. Thundat, Proc. SPIE 6223, 622307 (2006).
22. "Nanoscale energy conversion by using nano-catalytic particles", Z. Hu and T. Thundat, ASME Conf. Proc. 2006, 545 (2006).
23. "Thermal characterization and temperature control of piezoresistive microcantilevers", A. Choudhury, P.J. Hesketh, Z. Hu and T.G. Thundat, Proc. IEEE Sensors, 1223-1226 (2006).
24. "Environmental sensing using microcantilever sensors", T. Thundat, H.F. Ji, and G.M. Brown, Subsurface Contamination Remediation, ACS Symposium Series, #904, Eds. E. Berkey and T. Zachry, pp 284-305 (2005).
25. "Nanomechanical sensor array for detection of biomolecular bindings: toward a label-free clinical assay for serum tumor markers", M. Yue, J.C. Stachowiak, H. Lin, K. Castelino, R. Datar, K. Hansen, T. Thundat, A. Chakraborty, R.J. Cote and A. Majumdar, ASME Con. Proc. 2004, 27 (2004).
26. "Aptazyme-coated microcantilevers for the detection of lead ions", K.M. Hansen, K.A. Stevenson and T. Thundat, ECS Proc., (8), 256-259 (2004).
27. "Nanomechanical sensor array for detection of biomolecular bindings – towards a label-free clinical assay for serum tumor markers", M. Yue, H. Lin, R. Datar, T. Thundat, R.J. Cote, J.C. Stachowiak, K. Castelino, K. Hansen, A. Chakraborty and A. Majumdar, Proceedings of the 3rd ASME Integrated Nanosystems Conference, 27-28 (2004).
28. "Piezoresistive cantilever array for chemical and biological detection", T. Thundat, L.A. Pinnaduwege, S. Jeon and K.M. Hansen, ECS Proceedings (9), 237-243 (2004).
29. "Detection of copper with potentiostatically controlled microcantilever sensors", G.M. Brown, F. Tian, J. Pei, D.L. Hedden and T. Thundat, ECS Proceedings (8), 244-251 (2004).
30. "Novel glucose biosensor based on the microcantilever", J. Pei, F. Tian and T. Thundat, MRS Symposium Proceedings, 776, 243-247 (2003).

31. "Stability Of thiolated DNA on gold-coated microcantilevers," K.A. Stevenson, A. Mehta, K.M. Hansen, T.G. Thundat, in Proceedings on MEMS-V, Symposium of the ECS Spring Meeting, Pennsylvania, (2002).
32. "A self-locking technique with fast response and high sensitivity for micro-cantilever based sensing of analytes", A. Mehta, G. Muralidharan, A. Passian, S. Cherian T.L. Ferrell and T. Thundat, Mat. Res. Soc. Symp. Proc. Vol. 723, O6.7.1-O6.7.6 (2002).
33. "Chemical sensing with resistive microcantilevers", G. Muralidharan, A. Wig, L.A. Pinnaduwege, D.L. Hedden, P.G. Datskos, T. Thundat and R.T. Lareau, MRS Symposium Proceedings, 723, 173-178 (2002).
34. "Site specific attachment of gold nanoparticles on DNA templates", K.A. Stevenson, G. Muralidharan, J.C. Wells, J. Barhen, and T. Thundat, Mat. Res. Symp. Vol. 635 (2001).
35. "Probing single ion luminescence in rare-earth doped nanocrystals", M.D. Barnes, A. Mehta, T. Thundat and R. Bhargava, AIP Conf. Proc., 584, 182 (2001).
36. "Highly Selective Microcantilever Sensor For Cs ion Detection", T. Thundat, E. Finot, H.F. Ji, R. Dabestani, P.F. Britt, P.V. Bonnesen, G.M. Brown, and R.J. Warmack, Chemical Sensors IV, ECS Proceedings 99-23, (M. Butler, N. Yamazoe, P. Vanysek, and M. Aizawa, eds.), 314-319, Arizona (2000).
37. "Nanomechanical Detection of Molecular Interactions" K.M. Hansen, H.F. Ji, G. Wu, R. Datar, R. Cote, A. Majumdar, and T. Thundat, Chemical Sensors, ECS Proceedings, Vol. 2000-19 200-205, Arizona (2000).
38. "Metal Coated Microcantilever Hydrogen and Mercury Sensors", Z. Hu, T. Thundat, and R.J. Warmack, Chemical Sensors IV, ECS Proceedings 99-23, (M. Butler, N. Yamazoe, P. Vanysek, and M. Aizawa, eds.), 347-354, Arizona (2000).
39. "Amorphous Diamond Films Synthesized by Pulsed Laser Ablation: Influence of Carbon Ion Kinetic Energy and Laser Wavelength," D.H. Lowndes, V.I. Merkulov, A.A. Puretzky, D.B. Geohegan, G.E. Jellison, Jr., C.M. Rouleau, and T. Thundat, p. 325 *in* Advances in Laser Ablation of Materials (R.K. Singh, D.B. Chrisey, D.H. Lowndes, J. Narayan, E. Fogarassy, and T. Kawai, eds.), Material Research Society (MRS), Pennsylvania (1998).
40. "MEMS sensors and wireless telemetry for distributed systems", C.L. Britton Jr., R.J. Warmack, S.F. Smith, P.I. Oden, G.M. Brown, W.L. Bryan, L.G. Clonts, M.G. Duncan, M.S. Emery, M.N. Ericson, Z. Hu, R.L. Jones, M.R. Moore, J.A. Moore, J.M. Rochelle, T.D. Threatt, T.G. Thundat, G.W. Turner and A.L. Wintenberg, Proc. SPIE, 3328, 112-123 (1998).
41. "*In-Situ* measurements of islanding and strain relaxation of Ge/Si(111)", P.W. Deelman, L.J. Schowalter, and T. Thundat, Mat. Res. Soc. Symp. Proc. 441 (1997).
42. "Ferromagnetic nanocomposite films from thermally labile nitride precursors", L. Maya, M. Paranthaman, J.R. Thompson, T. Thundat and R.J. Stevenson, MRS Symposium Proceedings, 457, 213-218 (1997).
43. "Effect of strain relaxation mechanisms on the electrical properties of epitaxial CaF₂/Si(111) heterostructures", L.J. Schowalter, B.M. Kim, T.G. Thundat, C.A. Ventrice Jr. and V.P. LaBella, MRS Symposium Proceedings, 466, 21-26 (1997).
44. "Infrared imaging using microcantilevers", P.I. Oden, P.G. Datskos, T. Thundat, E.A. Wachter, and R.J. Warmack, Micro-electromechanical systems (MEMS) ASME, 67 (1996).
45. "Temperature-dependent strain relaxation and islanding of Ge/Si(111)", P.W. Deelman, L.J. Schowalter, and T. Thundat MRS Symp. Proc. 399 (1996).
46. "Defects and their origin in thin films of (001) alkaline earth oxides", F.J. Walker, R.A. McKee, S.J. Pennycook and T.G. Thundat, MRS Symp. Proc., 401, 13-20 (1996).
47. "Gold nanocomposites prepared by reactive sputtering", L. Maya, M. Paranthaman, T. Thundat, W.R. Allen, A.L. Glover and J.C. Mabon, MRS Symp. Proc., 405, 529-534 (1996).

48. "Self-limiting growth kinetics of 3D coherent islands", K.M. Chen, D.E. Jesson, S.J. Pennycook, T. Thundat and R.J. Warmack, MRS Symp. Proc., 399, 271-281 (1996).
49. "Optical and infrared detection using microcantilevers", P.I. Oden, E.A. Wachter, P.G. Datskos, T.G. Thundat and R.J. Warmack, Proc. SPIE, 2744, 345-354 (1996).
50. "Temperature-dependent strain relaxation and islanding of Ge/Si(111)", P.W. Deelman, L.J. Schowalter and T. Thundat, MRS Symposium Proceedings, 417, 227-232 (1996).
51. "Piezoresistive microcantilever optimization for uncooled infrared detection technology", S. Rajic, B.M. Evans, P.G. Datskos, P.I. Oden, T. Thundat, and C.M. Egert, SPIE, 2817, 179 (1996).
52. "Ge Nanocrystals Grown On Si(111) By Molecular Beam Epitaxy With and Without CaF₂ Buffer Layers", P.W. Deelman, T. Thundat, and L.J. Schowalter, Mat. Res. Soc. Symp. Proc. 358 (1995).
53. "Triangular step instability and 2D/3D transition during the growth of strained Ge films on Si(100), K.M. Chen, D.E. Hesson, S.J. Pennycook, M. Mostoller, T. Kaplan, T. Thundat and R.J. Warmack, MRS Symposium Proceedings, 379, 33-38 (1995).
54. "Morphology and microstructure of (111) crystalline CeO₂ films grown on amorphous SiO₂ substrates by pulsed-laser ablation", S. Zhu, D.H. Lowndes, J.D. Budai, T. Thundat, D.P. Norton and R.J. Warmack, MRS Symposium Proceedings, 354, 603-608 (1995).
55. "Mapping site-specific endonuclease binding to DNA by direct imaging with atomic force microscopy (AFM)", D.P. Allison, T.G. Thundat, P. Modrich, R.J. Isfort, M.J. Doktycz, P.S. Kerper and R.J. Warmack, Proc. SPIE, 2386, 24 (1995)
56. "Initiation and evolution of epitaxial growth of GaAs on CaF₂/Si(111) substrates", W. Li, T. Anan, T. Thundat and L.J. Schowalter, MRS Symposium Proceedings, 317, 59-64 (1994).
57. "Scanning Tunneling Microscopic Imaging of Electrostatically Immobilized Nucleic Acids. The Influence of Self-Assembled Monolayered Structure on the Binding of Plasmid DNA to Gold Surfaces," L.A. Bottomley, J.A. Jones, Y. Ding, D.P. Allison, T. Thundat, and R.J. Warmack, Proc. SPIE 1891, 48-55 (1993).
58. "Estimation of Surface Diffusion Length from AFM Images of Faceted GaAs Homoepitaxial Films", K. Yang, L.J. Schowalter, and T.G. Thundat, Mat. Res. Soc. Symp. Proc. Vol. 280, 143-46 (1993).

Book Chapters (partial list):

1. S. Kim, K. Kihm, and T. Thundat, "Microcantilever chemical and biological sensors", in *Encyclopedia of Nanotechnology*, edited by B. Bhushan, Springer (2012).
2. L. Norman, G. Thakur and T. Thundat, "Microcantilevers Sensors: Electrochemical Aspects and Biomedical Applications", in *Modern Aspects of Electrochemistry: Biomedical Applications Vol. 55*", edited by S. S. Djokic, Springer (2012).
3. T. Thundat, C.W. Van Neste, L.R. Senesac and A.R. Krause, "Photothermal Sensing of Chemical Vapors Using Microcantilevers" in *Nanotechnology for Electronics, Photonics, and Renewable Energy*, pp 183-192. Edited by A. Korkin, P.S. Krstić and J.C. Wells, Springer (2010).
4. R. Datar, T.L. Ferrell, and T. Thundat, "Microcantilever Biomedical Sensors" in *Nanomedicine: Design of Particles, Sensors, Motors, Implants, Robots, & Devices*, pp313-323. Edited by Mark J. Schultz, Vesselin N. Shanov, and Yeo Heung Yun, Artec House (2009).
5. Z. Hu, D. Zhou, R. Greenberg and T. Thundat, "Electrochemical characterization of implantable high aspect ratio nanoparticle platinum electrodes for neural stimulations" in *Artificial Sight: Basic research, biomedical engineering, and clinical advances*, pp243-254. Edited by Mark S. Humayun, James D. Weiland, G. Chader and Elias Greenbaum, Springer (2008).
6. L. Senesac and T. Thundat, "Explosive detection using microcantilever sensors", in *Counterterrorist Detection Techniques of Explosives*", J. Yinon, ed., Elsevier (2007).

7. Z. Hu, D.M. Zhou, R. Greenberg, and T. Thundat, "Electrochemical characterization of implantable high aspect ratio nanoparticle platinum electrodes", *Artificial Sight*, edited by M.S. Humayun, J.D. Weiland, G. Chader, E. Greenbaum, Springer (2007).
8. T. Thundat, "Explosive vapor detection using microcantilevers" *Trace Chemical Sensing of Explosives*, R.L. Woodfin, ed., Wiley-Interscience (2007).
9. A. Passian, A. L. Lereu, R. H. Farahi, T. L. Ferrell, and T. Thundat, "Thermoplasmonics in thin solid films", in *Trends in Thin Solid Films Research*, NOVA, ISBN 1-60021-455-X (2007).
10. T. Thundat, L. Pinnaduwege, and R. Lareau, "Explosive Vapor detection using Micromechanical sensors", in *Electronic Noses & Sensors for the detection of Explosives*, pp 249-266, J.W. Gardner and J. Yinon (eds.), Kluwer Academic Publishers (2004).
11. T. Thundat and A. Majumdar, "Microcantilevers for physical, chemical, biological sensing", *Sensors and Sensing in biology and engineering*, Barth, Humphry, Secomb (eds.) pp 338-355 SpringWein NewYork (2003).
12. T. Thundat, P.I. Oden, and R.J. Warmack, "Physical, Chemical, and Biological Detection Using microcantilevers", *Molecular Nanotechnology*, IBC Publications, Ed. Shelly Minton (1997).
13. T. Thundat, P.I. Oden, and R.J. Warmack, "Chemical, Physical, and Biological detection using microcantilevers", *Microstructures and microfabricated systems III*, P.J. Hesketh, G. Barna, and H.G. Hughes, Editors pp. 179-187, *Electrochemical Society Vol. 97-5* (1997).
14. T.L. Ferrell, D.P. Allison, T. Thundat, and R.J. Warmack, "Scanning Tunneling Microscopy in Sequencing of DNA", *Molecular Biology and Biotechnology: A Comprehensive Desk Reference*, R. A. Meyers, ed., VCH Publishers, Inc., New York, p. 851-53 (1995).
15. D.P. Allison, T. Thundat, and R.J. Warmack, "Scanning Probe Microscopy in Genomic Research", *Book Chapter: Automated Technologies for Genome Characterization*, John Wiley & Sons, Inc. (1995).
16. S.M. Lindsay, T. Thundat, and L.A. Nagahara, "Imaging biopolymers under water by STM", in *Biological and Artificial Intelligence Systems*, pp 124-142 (Eds. E. Clementi and S. Chin) ESCOM, Leiden (1988).

Professional Societies - Conference Organizer (Last 10 years):

- Co-Organizer, MRS Fall Symposium, Boston (2015)
- Co-Organizer MRS Fall Symposium, Boston (2014)
- Co-Organizer, SPIE Defense and Security Conference, Baltimore (2013)
- Co-Organizer, MRS Spring Meeting, San Francisco, (2012)
- Co-Organizer, SPIE Defense and Security Conference, Baltimore (2012)
- Co-Organizer, Sixth International Nanomechanics Workshop, Bombay, India (2012)
- Co-Organizer, ECS Meeting Symposium, Montreal, Canada, (2011).
- Co-Organizer, MRS Fall Meeting Symposium, Boston, MA, (2010)
- Co-Organizer, APS March meeting, Division of Biological Physics Symposium, Portland, OR, (2010).
- Co-Organizer, Fifth International Nanomechanics Workshop, Banff, Canada, (2010).
- Track Organizer, ASME NEMBIB 2009, Huston, TX, (2010).
- Organizer, Fifth International Conference on Nanomechanical Cantilever Sensors, Jeju Island, S. Korea, (2009).

- Co-Organizer, ECS Meeting, San Francisco, CA, (2009).
- Co-Organizer, ICMEMS – IIT Madras, India, (2009).
- Co-Organizer, MRS Fall Conference, Symposium on Biomedical Nanotechnology, Boston, MA, (2008).
- Co-Organizer, Fourth International Conference on Nanomechanics, Max Plank Institute, Mainz, Germany, (2008)
- Co-Organizer, Third ASME Nanomechanics Workshop, Denmark, (2006).
- Co-Organizer, MRS Symposium on Nanosensors, Boston, MA, (2006).
- Co-Organizer, Second ASME Nanomechanics Workshop, Knoxville, TN, (2005).
- Organizer and symposium chair, Nanomechanical Sensor Symposium, APS Meeting, Los Angeles, CA, (2005).
- Co-Organizer, Microcantilever Sensor Symposium, ECS Fall Meeting, Los Angeles, CA, (2005).

Invited Talks:

(Plenary, and Keynote, and Invited Seminars that I have personally given) (2017 -2000):

1. “Photothermal chemical selectivity”, MRS Fall Meeting, Boston (Dec. 2016)
2. “Tesla’s Dream: Single Wire Electricity Transmission”, Yamagata University, Japan (Nov. 2016).
3. “Chemical Selectivity” Keynote talk, ECS Prime, Honolulu, Hawaii (Oct. 2016)
4. “Strides towards chemical selectivity”, International Workshop on Nanomechanics, Delft, The Netherlands, June 2016.
5. “Wire-free electricity transmission”, Delft University, 2016
6. “Tesla’s Dream Revisited”, Center for Nanophase Material Science, ORNL (2016)
7. “Chemical selectivity in MEMS sensors”, Cochin Nano, India (2016)
8. “Defect Engineering” Technical University Denmark, Copenhagen (2016)
9. “Story of a Cantilever: Nanomechanics at Interfaces” Distinguished Speaker Series, York University, Toronto (2015)
10. “Nanowire Calorimetry for Chemical sensing”, International Conference on MicroNanotechnology, Shanghai, China (2015)
11. “MEMS and NEMS for Molecular Recognition”, International Workshop on Nanotechnology, Kookmin University, Seoul (2015)
12. “Nanomechanical Systems: From Molecular Recognition to Energy Conversion” Plenary Talk, International Conference on Nanotechnology, Calgary (2015)
13. “Colloids in Confined Spaces”, Key Note address, International Conference on Colloids and Interfaces, Mainz, Germany (2015).
14. “Photothermal and photoacoustic spectroscopy” Invited talk, International Conference on Optical Properties of Materials, Montenegro, (2015).
15. “Mechanical Photothermal Spectroscopy”, University of Central Florida, Nanoscience Center, Jan. 2015.
16. “Chemical sensing through Calorimetry”, Texas Tech. University, Department of Chemical Engineering, June 2015.
17. “Nanomechanical Sensors” Invited talk, Biotronics 2014 international conference, Seoul, Korea, Sept. 2014.

18. "Nanoburning of Methanol", Plenary Talk, International Conference on Nanoenergy Conference, Beijing, Dc. 2014.
19. "Single wire electricity transmission", Shanghai Jiatong University, Department of Micro Nano Electronics, Shanghai (Dec. 2014).
20. "Sustained Electrical Power from Catalytic Burning of Methanol", Shanghai University, Department of Physics (Dec. 2014).
21. "Reviving Tesla for an array of possibilities", Leadership Lecture Series IIT Madras, May 2014
22. "Single wire power transmission", IEEE Seminar, IIT Bombay, May 2014
23. "Calorimetric Cantilever Sensors", Physics Department, IIT Madras, May 2014
24. "Nanomechanical sensors for biomedical applications", Amrita Institute, Center for Nanoscience, Cochin, May 2014
25. "Photothermal Nanomechanical Spectroscopy", NMC 2014 Madrid May 2014.
26. "Nanothermal Sensors", Center for Nanoscience, IISc Bangalore, December 2013.
27. "Thermomechanical Sensors", International Conference of Solid State Physics, New Delhi, December 2013
28. "Tip-induced nanolithography", SPIE Conference, Baltimore, April 2013.
29. "Standoff and point sensing sensing using MEMS", Keynote talk, International Conference on Emerging Electronics, IIT Bombay, December 2012.
30. "Micromechanical Sensors", Invited Tutorial, International Conference on Emerging Electronics, IIT Bombay, December, 2012.
31. "Subs-surface imaging in scanning probe microscopy", Cochin University, India, Dec. 2012
32. "Photothermal Spectroscopy and Microscopy", MRS Fall Meeting, Boston, 2012
33. Nanosensors, Public Lecture, University of Alberta, Oct., 2012
34. "Controlling fluid flow at microscale: Applications in sensing and biofilms", Plenary Talk ASME conference, San Juan, Puerto Rico, July 2012.
35. "Micro and Nanomechanics and Molecular detection", IIT Bombay Invited Tutorial, International Nanomechanics Workshop, Bombay, India, June 2012.
36. "Photothermal Spectroscopy", International Scanning Probe Microscopy Conference, Toronto, June 2012
37. "Micromechanical Sensing", Physics Department Colloquium, University of Alberta, Jan. 2012
38. "Cantilever Sensors", Technical University Denmark, Christmas Symposium 2011.
39. "Photothermal Cantilever Deflection Spectroscopy", Cochin University, India 2011
40. "Optically Directed Transport and Detection of Biomolecules", City College Dublin, Ireland (2011)
41. "Frizzy Hair, Nanomechanics, and Oil Sands, Tech Fest, IIT Bombay, 2011
42. "Molecular Recognition in Cantilevers" POSTECH, S. Korea, 2011
43. "Nanomechanical Sensors" National Academies Panel on Chemical and Biological Sensors, Washington, DC, (2010).
44. "Standoff Detection of Explosives", ACS Pacific Rim Conference, Hawaii, 2010
45. "Cantilever sensors" Keynote Address, ICONSAT, Indian Institute of Technology (IIT), Bombay, India, (2010).
46. "Molecular Speciation" IIT, Department of Physics Colloquium, Madras, India, (2010).

47. "Scanning probe microscopy and sub-surface imaging" Institute of Mathematical Sciences, Madras, India, (2010).
48. "Standoff and point detection", IIT, Department of Electrical Engineering, Madras, India (2010).
49. "Nanomechanical Systems", Columbia University, Dept. of Mechanical Engineering, NYC, (2009).
50. "MEMS and Molecular Recognition", Stevens Institute of Technology, Nanotechnology Institute, NJ, (2009).
51. "Cantilever-Based Biosensors", University of Miami, FL, (2009).
52. "Microcantilever Sensors", NEMS Workshop, California Institute of Technology, Pasadena, CA, (2009).
53. "Thermomechanical Systems", Plenary Talk, NanoGiga Conference, McMaster University, Hamilton, ON, (2009).
54. "Nanomechanical Sensing: Challenges and Opportunities", National Nanotechnology Initiative, Washington, D.C., (2009).
55. "MEMS and NEMS" Electrical Engineering Department, Pennsylvania State University, (2009).
56. "Chemical sensing using cantilever sensors" Chemistry Department, Drexel University, Philadelphia, PA, (2009).
57. "Nanomechanical Sensing", Mechanical Engineering Department, Vanderbilt University, Nashville, TN, (2009).
58. "Strategies for Molecular Recognition in MEMS", Keynote Address, ICMEMS, IIT Madras, Chennai, India, (2009).
59. "Molecular Recognition in MEMS Sensors", IIT Bombay, India, (2009).
60. "Nanoengineering Applications", Rajagiri School of Engineering, Cochin, India, (2009).
61. "Nanotechnology for Biomass Conversion", Botany Department, St. Theresa's College, Cochin, India, (2009).
62. Molecular Recognition in MEMS, University of Arkansas, Fayetteville, AR, (2008).
63. Nanomechanical Sensing", Mechanical Engineering Dept., Virginia Tech, Blacksburg, VA, (2008).
64. "Receptor-free biosensing", APS March Meeting, New Orleans, LA, (2008).
65. "Detection of IEDs", IED Detection Conference, Washington, D.C., (2008).
66. "Microcantilever Sensors", State University of New York Albany, NY, (2008)
67. "Integrated Nanomechanical Sensors", General Electric Company, Schenectady, NY
68. "Receptor-free mechanical sensing", Institute of Electrical and Electronics Engineers (IEEE) Sensor Conference, Atlanta, GA, (2007).
69. MEMS Sensors, Chemical Engineering Dept., Vanderbilt University, Nashville, TN (2007).
70. Chemical and biological sensing using cantilevers, Photonic West, San Jose, CA, (2007).
71. "Chemical and Biological Detection Using Cantilever Sensors", Pittcon Meeting, Chicago, IL, (2007).
72. Receptor-free sensing, SPIE Conference, Orlando, FL, (2007).
73. Receptor-free detection of chemicals, International Conference on Cantilever Sensors, Montreal, Canada, (2007).
74. Explosive Detection using Cantilever Sensors, US Army, ARDEC, Detroit, MI, (2006).
75. Microcantilever sensors, Material Research Society Conference Tutorial, Boston, MA, (2006).

76. Nanomechanical sensors, MRS Conference, Boston, MA, (2006).
77. Molecular recognition in MEMS sensors, Technical University, Denmark, (2006).
78. Cantilever Sensors, Max Plank Institute, Mainz, Germany, (2006).
79. Photothermal Spectroscopy, University of Burgundy, France, (2006).
80. Nanomechanical Sensors, International conference on scanning probe microscopy, Montpellier, France, (2006).
81. Selective and sensitive detection of analytes using MEMS, CEA, France (2006).
82. Cantilever Arrays, International Conference on Nanomechanics, Denmark, (2006).
83. Mechanical Sensors, Texas Tech University, Lubbock, TX, (2006).
84. Microcantilever Sensor Arrays, Sandia National Laboratory, Albuquerque, NM, (2006).
85. Explosive vapor sensing, DHS-DOE Workshop on Explosives, Albuquerque, NM, (2006).
86. MEMS Environmental Sensors, Workshop On Nanotechnology for EPA Applications, Raleigh-Durham, NC, (2006).
87. "Explosive vapor detection using cantilever sensors", American Chemical Society Meeting, Washington, D.C., (2005).
88. "Nanomechanical Sensor Arrays for Multiplexed detection of Chemicals", Weissberger/Williams Lecture, Eastman Kodak Company, Rochester, NY, (2005).
89. "Nanomechanical Sensors", National Academies (USA) Japan-US Workshop on sensors, Tsukuba, Japan, (2005).
90. "Cantilever Sensor Arrays for chemical sensing", Academia Sinica, Taiwan, (2005).
91. "Microcantilever Biosensors", Institute of Physics, Academia Sinica, Taiwan, (2005).
92. "Molecular recognition using MEMS arrays", ITRI, Taiwan, (2005).
93. "Nanobiology and Nanomechanics", Molecular Biology Department, University of Tennessee, Knoxville, TN, (2004).
94. "Nanomechanics", IIT, Madras, India, (2004).
95. "MEMS sensors", American Physical Society, March Meeting, Montreal, Canada, (2004).
96. "Molecular recognition using nanomechanics", ASME Workshop on Nanotechnology, Reno, NV, (2004)
97. "MEMS-based explosive detectors", ATF-DHS Workshop, Scottsdale, AZ, (2004).
98. "Microcantilevers and molecular recognition", MRS Spring Meeting, San Francisco, CA (2004).
99. "Frictional effects in MEMS", DOE Workshop on Friction, Oak Ridge National Laboratory, TN, (2004).
100. "Cantilevered MEMS sensors", Council for the Advancement of Science Writing (CASW) New Horizons in Science Briefing, Knoxville, TN, (2003).
101. "Explosive vapor detection using nanomechanics", NATO Advanced Studies Workshop, England, (2003).
102. "Micromechanical detection of chemical and biological warfare agents", Biodefense Conference, Washington, D.C., (2003).
103. "Cantilever array sensors", Protiveris Inc., Bethesda, MD, (2003).
104. "Molecular recognition using mechanical sensors", Rutgers University, NJ, (2003).
105. "Micromechanical sensors", Auburn University, Auburn, AB, (2003).

106. "Physical, chemical, and biological detection using cantilevers", Pittcon Meeting, Orlando, FL (2003).
107. "Environmental sensing using mechanical sensors", American Chemical Society, New Orleans, LA, (2003).
108. "MEMS and NEMS Sensors", Northwestern University, Evanston, IL, (2003)
109. "Detection of Terrorist weapons using microcantilever sensors", Lawrence Livermore National Laboratory, Livermore, CA, (2002).
110. "Mechanical Sensing", State University of New York Albany, NY, (2002).
111. "Microcantilever gas sensors", DARPA Workshop on Microsensors, Monterey, CA, (2002).
112. "Micromechanical Sensors", Nanotechnology Conference, Georgia Institute of Technology, Atlanta, GA, (2002).
113. "Micromechanical Sensors", Electrical Engineering Dept., Arizona State University, Tempe, AZ, (2002).
114. "MEMS and NEMS", Oak Ridge National Laboratory M&C Seminar, (2002).
115. "Environmental Sensing using Microcantilevers", Pittcon Meeting, New Orleans, LA, (2002).
116. "Nanofriction at electrified interfaces", ACS National Meeting, Orlando, FL, (2002).
117. "Microcantilever Biosensors," Materials Research Society Spring Meeting, San Francisco, CA, (2002).
118. "Terrorist Weapon Detection using microcantilevers", Scanning Microscopy Conference, Las Vegas, NV, (2002).
119. "Detection of terrorist threat using micromechanical sensors", AVS Topical Conference, Monterey CA, (2002).
120. MEMS and NEMS - Bridge to the Nanoworld, Mechanical Engineering Department, University of Tennessee, Knoxville, TN, (2002).
121. "Fundamental mechanisms in cantilever sensors", International Conference on Scanning Probe Microscopy, Tokyo, Japan, (2001).
122. "Microcantilever sensors", Scanning Microscopy conference, NY City, NY, (2001).
123. "Microcantilever Sensors", IIT Madras, Department of physics, Madras India, January 2001.
124. "Micromechanical Sensors", Department of Materials Science and Engineering, Ohio State University, Columbus, OH, (2001).
125. "Microcantilever chemical sensors", American Chemical Society, Ohio Valley Chapter, Columbus, OH (2000).
126. "Micromechanical sensors for biological applications", Monsanto Chemical Company, Saint Louis, MO, (2000).
127. "Micromechanical sensors", Department of Materials Science and Engineering, Ohio State University, Columbus, OH (2000).