

**Publications of the Hawaii Institute of Geophysics and Planetology  
University of Hawaii  
2000**

1. **Amelung, F.**, C. Oppenheimer, P. Segall, and H. Zebker, 2000, Ground deformation near Gada 'Ale Volcano, Afar, observed by radar interferometry, *Geophys. Res. Lett.*, 27, 19, 3093-3096.
2. **Amelung, F.**, S. Jonsson, P. Segall, and H. Zebker, 2000, Widespread uplift and trapdoor faulting on Galapagos volcanoes observed with radar interferometry, *Nature*, 407, 99-996.
3. **Benedix, T.J. McCoy, K. Keil and S.G. Love**: A petrologic study of the IAB iron meteorites: Constraints on the formation of the IAB-winonaite parent body. *Meteorit. Planet. Sci.* 35, 1127-1142, 2000.
4. Bock, Y., et al. [**M. Bevis**], 2000, Instantaneous resolution of crustal motion at medium distances using the Global Positioning System, *J. Geophys. Res.*, 105, 28, 223-28, 253.
5. **Brooks, B. A.**, E. Sandvol, and A. Ross, 2000, Fold style inversion: Placing probabilistic constraints on the predicted shaped of blind thrust faults, *J. Geophys. Res.*, 105, B6, 13,281.
6. **Browning, L.**, H. Y. McSween Jr., and M. E. Zolensky, 2000, On the origin of rim textures surrounding anhydrous silicate grains in CM carbonaceous chondrites, *Meteorit. Planet. Sci.*, 35, 1015-1023.
7. Campbell A. J., Humayun M., **Meibom A., Krot A. N. and Keil K.** (2000) Origin of metal grains in the QUE94411 chondrite. *Geochim. Cosmochim. Acta* **65**, 163-180.
8. Choi B.-G., **Krot A. N.**, and Wasson J. T. (2000) Oxygen-isotopes in magnetite and fayalite in CV chondrites Kaba and Mokoia. *Meteorit. Planet. Sci.* **35**, 1239-1249.
9. Dail, H. J., M. A. Merrifield, and **M. Bevis**, 2000, Steep beach morphology changes due to energetic wave forcing, *Mar. Geol.*, 162, 443-458.
10. Elphic, R. C., D. J. Lawrence, W. C. Feldman, B. L. Barraclough, S. Maurice, A. B. Binder and **P. G. Lucey**, 2000, Lunar rare earth element distribution and ramifications for FeO and TiO<sub>2</sub>: Lunar prospector neutron spectrometer observations, *J. Geophys. Res.*, 105, E8, 20,333 - 20,345.
11. **Fagan, T. G., E. R. D. Scott, K. Keil, T. F. Cooney, and S. K. Sharma**, 2000, Formation of feldspathic and metallic melts by shock in enstatite chondrite Reckling Peak 80259, *Meteorit. Planet. Sci.*, 35, 319-330.
12. **Fagan, T. J., A. N. Krot, and K. Keil**, 2000, Calcium-aluminum-rich inclusions in enstatite chondrites (I): Mineralogy and textures, *Meteorit. Planet. Sci.*, 35, 771-781.
13. **Fanale, F. P.**, et al. [J. C. Granahan, **T. B. McCord**, and the Galileo NIMS and SSI instrument teams], 2000, Tyre and Pwyll: Galileo orbital remote sensing of mineralogy versus morphology at two selected sites on Europa, *J. Geophys. Res.-Planet.*, 105, E9, 22, 647-22, 655.
14. **Felton, E. A.**, K. A. W. Crook, and **B. H. Keating**, 2000, The Hulopoe gravel, Lanai, Hawaii: New sedimentological data and their bearing on the "giant wave"

- (mega-tsunami) emplacement hypothesis, *Pure Appl. Geophys.*, 157, 1257-1284.
15. Feng, M., et al. [R. Lukas, **P. Hacker**], 2000, Upper-ocean heat and salt balances in the western equatorial Pacific in response to the Intraseasonal Oscillation during TOGA COARE. *J. Climate*, 13, 2409-2427.
  16. Floss, C., et al. [**A. Yamaguchi**, and **K. Keil**], 2000, Trace element constraints on the origin of highly metamorphosed Antarctic eucrites, *Antarctic Meteorite Res.*, 13, 222-237.
  17. **Flynn, L.P., Harris, A.J.L.**, Rothery, D.A. and Oppenheimer, C., 2000, Landsat and hyperspectral analyses of active lava flows, *Remote Sensing Volcanism, Remote Sensing of Active Volcanism*, AGU Geophysical Monograph Series 116, Mouginiis-Mark, P., Fink, J., Crisp J., (eds), 161-177.
  18. **Foster, J., M. Bevis**, T. Schroeder, M. Merrifield, S. Businger, S. Dorn, S. Marcus, J. Dickey, and Y. Bar-Sever, 2000, El Niño, water vapor and the Global Positioning System, *Geophys. Res. Lett.*, 27, 2697-2700.
  19. **Fryer, P.**, D. Fornari, and M. Perfit, 1999-2000, Future research directions in deep submergence science, *Mar. Technol. Soc. J.*, 33, 4, 74-49.
  20. **Fryer, P.**, J. P. Lockwood, N. Becker, and S. Phipps, 2000, Significance of serpentine and blueschist mud volcanism in convergent margin settings, in Dilek, Y., E. M. Moores, D. Elthon, and A. Nichols (eds.), *Ophiolites and Oceanic Crust: New Insights from Field Studies and Ocean Drilling Program*, Geol. Soc. Amer., Special Publication, 349, 35-51.
  21. Furuta, H., S. Endo, **L. C. Ming**, and M. Kobayashi, 2000, Pressure-induced structural transitions of PbZrO: High-pressure micro Raman spectroscopy, in Manghnani, M. H., W. J. Nellis, and M. F. Nicol (eds.), *Sci. Tech. High Pressure in Proceedings of AIRAPT-17*, 558-561.
  22. Gaddis, L. R., **B. R. Hawke**, M. S. Robinson, and C. Coombs, 2000, Compositional analyses of small lunar pyroclastic deposits using Clementine multispectral data, *J. Geophys. Res.-Planet.*, 105, E2, 4245-4262.
  23. **Garcés, M. A.**, 2000, Theory of acoustic propagation in a multi-phase stratified liquid flowing within
  24. **Garcés, M. A.**, R. A. Hansen, S. R. McNutt, and J. Eichelberger, 2000, Application of wave-theoretical seismoacoustic models to the interpretation of explosion and eruption tremor signals radiated by Pavlof Volcano, Alaska, *J. Geophys. Res.*, 105, 3039-3058.
  25. **Gauldie, R. W.**, et al. [J. B. Jones], 2000, Stocks, or geographically separated populations of the New Zealand orange roughy, *Hoplostethus Atlanticus*, in relation to parasite infestation growth rate and otolith shape, *B. Mar. Sci.*, 67, 3, 949-972.
  26. **Gauldie, R. W.**, et al. [M. D. Cremer], 2000, Confirmation of <sup>222</sup>Rn loss from otoliths or orange roughy, *Hoplostethus atlanticus*, *Fisheries Sci.*, 66, 5, 989-991.
  27. Giguere, T. A., et al. [G. J. Taylor, B. R. Hawke, and P. G. Lucey], 2000, The titanium contents of lunar mare basalts, *Meteorit. Planet. Sci.*, 35, 193-200.
  28. Greeley, R., et al. [**P. J. Mouginiis-Mark**], 2000, Volcanism on the red planet: Mars, in Zimbelman, J. R., and K. Gregg (eds.), *Environmental Effects on Volcanic Eruptions: From Deep Oceans to Deep Space*, Academic/Plenum Publishers, 75-112.

29. **Harris, A. J. L.**, and A. J. H. Maciejewski, 2000, Thermal surveys of the Vulcano Fossa fumarole field 1994-1999: Evidence for fumarole migration and sealing, *J. Volcanol. Geoth. Res.*, 102, 119-147.
30. **Harris, A. J. L.**, et al. [L. P. Flynn], 2000, Upper-ocean heat and salt and Krafla and their implications for eruptive mechanism, *J. Climate*, (in press).
31. **Harris, A. J. L.**, **S. B. Sherman**, and **R. Wright**, 2000, Discovery of self-combusting volcanic sulfur flows, *Geology*, 28, 5, 415-418.
32. **Harris, A.**, et al. [L. Flynn, E. Pilger, C. Okubo, P. J. Mougini-Mark, H. Garbeil, and R. Wright], 2000, Real-time monitoring of volcanic hot spots with satellites, *Am. Geophys. Un. Monogr.*, 116, 139-159.
33. **Harris, A.J.L.**, **Flynn, L.P.**, Dean, K., Pilger, E., Wooster, M., Okubo, C., **Mougini-Mark, P.**, **Garbeil, H.**, De la Cruz Reyna, S., Thornber, C., Rothery, D. and **Wright, R.**, 2000, Real-time Monitoring of Volcanic Hot Spots with Satellites, *Remote Sensing of Active Volcanism*, AGU Geophysical Monograph Series 116, Mougini-Mark, P., Fink, J., Crisp J., (eds), 139-159.
34. **Harris, A.J.L.**, Murray, J.B., Aries, S.E., Davies, M.A., **Flynn, L.P.**, Wooster, M.J., **Wright, R.** and Rothery, D.A., 2000, Effusion rate trends at Etna and Krafla and their implications for eruptive mechanisms, *J. Volcanol. Geotherm. Res.*, 102(3-4), 237-269.
35. **Harris, A.J.L.**, **Sherman, S.B.** and **Wright, R.**, 2000, Discovery of self-combusting sulfur flows, *Geology*, 28(5), 415-418.
36. **Herrero-Bervera, E.**, J. M. Vinuela, and J. P. Valet, 2000, Paleomagnetic study of the ages of lavas on the island of Lanai, Hawaii, *J. Volcanol. Geoth. Res.*, (in press).
37. **Hibbitts, C. A.**, **T. B. McCord**, and **G. B. Hansen**, 2000, The distribution of CO and SO on the surface of Callisto, *J. Geophys. Res.-Planet.*, 105, E9, 22, 541-22, 557.
38. Ishii, T., Hiroshi SATO, Satoru HARAGUCHI, **Patricia FRYER**, Kantaro FUJIOKA and Sherman BLOOMER, 2000, Petrological Characteristics of Peridotites from Serpentinite Seamounts in the Izu-Ogasawara-Mariana Forearc, *Journal of Geography*, Vol. 109 No. 4, 517-530.
39. Jolliff B. L., Gaddis, L. R., Ryder, G., Neal, C. R., Shearer, C. K., Elphic, R. C., Johnson, J. R., Keller, L. P., Korotev, R. L., Lawrence, D. J., **Lucey, P. G.**, Papike, J. J., Pieters, C. M., Spudis, P. D., Taylor, L. A., New views of the Moon: Improved understanding through data integration, *Eos Trans. AGU*, v81, No. 31, 349,354-355, 2000.
40. **Keating, B. H.**, and B. McGuire, 2000, Island edifice failures and associated tsunami hazards, *Pure Appl. Geophys.*, Special issue: Landslides and tsunamis, 157, 899-955.
41. **Keating, B. H.**, C. E. Helsley, and I. Karogodina, 2000, Sonar studies of submarine mass wasting and volcanic structure of Savaii, Samoa, *Pure Appl. Geophys.*, Special issue: Landslides and tsunamis, 157, 1285-1313.
42. **Keil, K.**, 2000, Thermal alteration of asteroids: Evidence from meteorites, *Planet. Space Sci.*, 48, 887-903.
43. Kobayashi, Y., S. Endo, T. Ashida, K. Deguchi, **L. C. Ming**, T. Kikegawa, and G. Zou, 2000, X-ray diffraction and dielectric constant measurements of KNbO

- under high pressure, in Manghnani, M. H., W. J. Nellis, and M. F. Nicol (eds.), *Sci. Tech. High Pressure, Proceedings of AIRAPT-17*, 840-843.
44. Kobayashi, Y., S. Endo, T. Ashida, K. Deguchi, **L.C. Ming**, T. Kikegawa, High pressure phase above 40 GPa in ferroelectric KNbO<sub>3</sub> under high pressure, *Phys. Rev. B.*, **61(9)**, 5819-5822, 2000.
  45. Kobayashi, Y., S. Endo, T. Ashida, **L. C. Ming**, and T. Kikegawa, 2000, High-pressure phase above 40 GPa in ferroelectric KNbO<sub>3</sub>, *Phys. Rev. B*, Condensed Matter and Material Physics 3<sup>rd</sup> series, 61, 9, 5819-5822.
  46. Komatsu M., **Krot A. N.**, Petaev M. I., Ulyanov A. A., **Keil K.** and Miyamoto M. (2000) Mineralogy and petrography of amoeboid olivine aggregates from the reduced CV3 chondrites Efremovka, Leoville and Vigarano: Products of nebular condensation and accretion. *Meteorit. Planet. Sci.* **36**, 629-643.
  47. **Krot A. N.**, Brearley A. J., Petaev M. I., Kallemeyn G. W., Sears D. W. G., Benoit P. H., Hutcheon I. D., Zolensky M. E., and **Keil K.** (2000) Evidence for *in situ* growth of fayalite and hedenbergite in MacAlpine Hills 88107, ungrouped carbonaceous chondrite related to CM-CO clan. *Meteorit. Planet. Sci.* **35**, 1365-1387.
  48. **Krot A. N.**, Fegley B., Palme H., and Lodders K. (2000) Meteoritical and astrophysical constraints on the oxidation state of the solar nebula. In *Protostars and Planets IV*, eds. Boss A., Manning V., and Russell S., Arizona Press, 1019-1055.
  49. **Krot A. N.**, **Meibom A.**, and **Keil K.** (2000) A clast of Bali-like oxidized CV3 material in the reduced CV3 chondrite breccia Vigarano. *Meteorit. Planet. Sci.* **35**, 817-827.
  50. **Krot A. N.**, **Meibom A.**, Petaev M. I., **Keil K.**, Zolensky M. E., Saito A., Mukai M., and Ohsumi K. (2000) Ferrous silicate spherules with euhedral Fe,Ni-metal grains from CH carbonaceous chondrites: Evidence for supercooling and condensation under oxidizing conditions. *Meteorit. Planet. Sci.* **35**, 1249-1259.
  51. Krot, A. N., A. Meibom, and K. Keil, 2000, A clast of Bali-like oxidized CV material in the reduced CV chondrite breccia Vigarano, *Meteorit. Planet. Sci.*, **35**, 817-825.
  52. **Krot, A. N.**, B. F. Fegley, Jr., H. Palme, and K. Lodders, 2000, Meteoritical and astrophysical constraints on the oxidation state of the solar nebula, *Protostars and Planets*, IV, 1019-1054.
  53. **Krot, A. N.**, et al., 2000, Oxygen isotopes in magnetic and fayalite in CV chondrites Kaba and Mokoï, *Meteorit. Planet. Sci.*, (in press).
  54. **Krot, A. N.**, M. I. Petaev, A. Meibom, and K. Keil, 2000, In situ growth of Ca-rich rims around Allende dark inclusions, *Geochem. Int.*, **38**, S351-S368.
  55. Kurras, G., et al. [**M. H. Edwards**], 2000, Volcanic morphology of the East Pacific Rise crest 9°49'-52' N: Implications for volcanic emplacement processes at fast-spreading mid-ocean ridges, *Mar. Geophys. Res.*, **21**, 23-41.
  56. Li, F. Y., S. S. Fu, R. J. Wang and **M. H. Manghnani**, "Elastic properties of float glass and SiO<sub>2</sub>+TiO<sub>2</sub> glass under high pressure", *Acta Physica Sinica* **49(11)** 2129-2132 (2000).
  57. **Lucey Paul G.**, Observations of the moon using the Air Force Maui Space Surveillance Complex, Proc. SPIE Vol. 4091, p. 216-224, Imaging Technology

- and Telescopes, James W. Bilbro; James B. Breckinridge; Richard A. Carreras; Stanley R. Czyzak; Mark J. Eckart; Robert D. Fiete; Paul S. Idell; Eds. , 2000.
58. **Lucey Paul G.; Williams, Tim J.; Winter, Michael E.**; Winter, Edwin M.; Two years of operations of AHI: an LWIR hyperspectral imager, *Proc. SPIE Vol. 4030*, p. 31-40, *Infrared Imaging Systems: Design, Analysis, Modeling, and Testing XI*, Gerald C. Holst; Ed., 2000.
  59. **Lucey, P. G.**, D. T. Blewett, and Jolliff, 2000, Lunar iron and titanium abundance algorithms based on final processing of Clementine ultraviolet-visible images, *J. Geophys. Res.-Planet.*, 105, E8, 20,297-20,305.
  60. **Lucey, P. G.**, D. T. Blewett, **G. J. Taylor**, and **B. R. Hawke**, 2000, Imaging of lunar surface maturity, *J. Geophys. Res.-Planet.*, 105, E8, 20, 377-20, 386.
  61. **Lucey, P.G.**, Potential for prebiotic chemistry at the poles of the Moon, *Proc. SPIE Vol. 4137*, p. 84-88, *Instruments, Methods, and Missions for Astrobiology III*; Richard B. Hoover; Ed., 2000.
  62. **Manghnani, M. H.**, Y. Wang, F. Li, **P. Zinin**, and W. Rafaniello, 2000, Elastic and vibrational properties of B4C to 21 GPa, in Manghnani, M. H., W. Nellis, and M. F. Nicol (eds.), *AIRAPT-17, Proc. Int. Conf. High Pressure Science and Technology*, Universities Press, India, 945-950.
  63. **Martinez, F., P. Fryer, and N. Becker**, 2000, Geophysical characteristics of the southern Mariana Trough, *J. Geophys. Res.-Sol. Ea.*, 105, B7, 16,591-16,607.
  64. Maurice S., Feldman, W. C., Lawrence, D. J., Elphic, R. C., Gasnault, O., d'Uston, C., Genetay, I., **Lucey, P. G.**, High-energy neutrons from the Moon, *J. Geophys. Res.*, 105, E8, 20,365-20,376, 2000.
  65. Mazzuca, L., S. Atkinson, **B. H. Keating**, and E. Nitta, 2000, Cetacean mass strandings in the Hawaiian Archipelago, *Aquatic Mammals*, 25, 2, 105-114.
  66. **McCord, T. B.**, et al. [**G. B. Hansen**], 2000, Thermal and radiation stability of the hydrated salt minerals epsomite mirabilite and natron under Europa environmental conditions, *J. Geophys. Res.*, (in press).
  67. McSween, H. Y., Jr., and **K. Keil**, 2000, Mixing relationships in the Martian regolith and the composition of globally homogeneous dust, *Geochim. Cosmochim. Acta*, 64, 2155-2166.
  68. Meibom A., Desch S. J., **Krot A. N.**, Cuzzi J. N., Petaev M. I., Wilson L., and **Keil K.** (2000) Large scale thermal events in the solar nebula: Evidence from FeNi metal grains in primitive meteorites. **Science** **288**, 839-841.
  69. **Ming, L. C.**, Y. H. Kim, J. Chen, M. Vaughan, S. K. Sharma, and A. Jayaraman, 2000, An in situ X-ray diffraction study of CuGeO under high pressure and high temperature in a DIA-6 apparatus using synchrotron radiation, in Manghnani, M. H., W. J. Nellis, and M. F. Nicol (eds.), *Sci. Tech. High Pressure in Proceedings of AIRAPT-17*, 535-538.
  70. **Mouginis-Mark, P.J.** and **N. Domergue-Schmidt**. Acquisition of satellite data for volcano studies. AGU Monograph #116 “*Remote Sensing of Active Volcanoes*”, eds. P.J. Mouginis-Mark, J.A. Crisp and J. Fink, pp. 9 – 24, 2000.
  71. **Mouginis-Mark, P.J.**, H. Snell and R. Ellisor. GOES satellite and field observations of the 1998 eruption of Volcan Cerro Azul, Galapagos Islands. *Bull. Volcanol.* 62: 188 – 198, 2000.
  72. **Mouginis-Mark, PJ**, Crisp JA, and Fink J. Introduction. In: “Remote Sensing of

- Active Volcanoes”, AGU Monograph #116, eds. P.J. Mouginis-Mark, J.A. Crisp and J. Fink, pp. 1 – 7, 2000.
73. Naka, J., et al. [M. Garcia, **E. Herrero-Bervera**, K. Johnson, A. Malahoff, G. McMurtry, B. Midson, J. Morgan, and J. Smith], 2000, Tectono-magmatic processes investigated at deep-water flanks of Hawaiian volcanoes, *Eos, Trans. Am. Geophys. Un.*, 81, 20, 221, 226-227.
  74. Owen, S., P. Segall, M. Lisowski, A. Miklius, M. Murray, **M. Bevis**, and **J. Foster**, 2000, January 30, 1997 eruptive event on Kilauea Volcano, Hawaii, as monitored by continuous GPS, *Geophys. Res. Lett.*, 27, 2757-2760.
  75. Pardee, D. R., **R. N. Hey**, and **F. Martinez**, 2000, Cross-sectional areas of mid-ocean ridge axes bounding the Easter and Juan Fernandez microplates, *Mar. Geophys. Res.*, 20, 517-531.
  76. **Porter, J. N.**, **B. Lienert**, and **S. K. Sharma**, 2000, Using horizontal and slant lidar measurements to obtain calibrated aerosol scattering coefficients from a coastal lidar in Hawaii, *J. Atmos. Ocean. Tech.*, 17, 1445-1453.
  77. Prasad, M., **M. H. Manghnani**, Y. C. Wang, **P. Zinin**, and R. A. Livingston, 2000, Acoustic microscopy of Portland cement mortar aggregate/paste interfaces, *J. Mater. Sci.*, 35, 14, 3607-3613.
  78. Rowland, S. K., and **H. Garbeil**, 2000, Slopes of oceanic basalt volcanoes, *Geophys. Monogr.*, 116, 223-247.
  79. Rushmer, T., W. G. Manarik, and **G. J. Taylor**, 2000, Physical processes of core formation., in Richter, K., and R. Canup (eds.), *Origin of the Earth and Moon*, (R. Canup and K. Richter, eds.) Univ. of Arizona Press, Tuscon, 227-243.
  80. **Sharma, S. K.**, et al. [**B. R. Lienert**], 2000, Scanning lidar measurements of amrine aerosol fields at a coastal site in Hawaii, in *Conf. Proc. Photo Optical Instrumentation Engineers*, (in press).
  81. Shieh, S. R., H.-K. Mao, R. J. Hemley, and **L. C. Ming**, 2000, In-situ X-ray diffraction studies of dense hydrous magnesium silicates at mantle conditions, *Earth Planet. Sc. Lett.*, 177, 69-80.
  82. Soloviev, A., R. Lukas, and **P. Hacker**, 2000, Horizontal structure of the upper ocean velocity and density fields in the western equatorial Pacific warm pool, *J. Phys. Oceanogr.*, 30, 416-432.
  83. Spencer, K. J., D. Shafer, **R. W. Gauldie**, and E. H. DeCarlo, 2000, Stable lead isotope ratios from distinct anthropogenic sources in fish otoliths: A potential nursery ground stock marker, *Comp. Biochem. Phys. A*, 127, 273-284.
  84. Valet, J.-P., and **E. Herrero-Bervera**, 2000, Paleointensity experiments using alternating field demagnetization, *Earth Planet. Sc. Lett.*, 177, 43-58.
  85. Veverka, J., et al. [**P. Lucey**], 2000, NEAR at Eros: Imaging and spectral results, *Science* 289, 2088-2097.
  86. Wessel, P., and **L. W. Kroenke**, 2000, Ontong java plateau and late neogene changes in Pacific plate motion, *J. Geophys. Res.-Oceans*, 105, 28, 255-28, 277.
  87. Williams, C. V., **K. Keil**, and **G. J. Taylor**, 2000, Breccia within breccia in the Cangas de Onis regolith breccia: Implications for the history of the H Chondrite parent body regolith, *Chem. Erde-Geochem*, 60, 269-277.
  88. Williams, C. V., **K. Keil**, **G. J. Taylor**, and **E. R. D. Scott**, 2000, Cooling rates of equilibrated clasts in ordinary chondrite regolith breccias: Implications for parent

- body histories, *Chem. Erde-Geochem.*, 59, 287-305.
89. Zhang, X., et al. [**M. H. Manghnani**, and **P. Zinin**], 2000, Characterization of hard materials and thin films by surface Brillouin scattering, in Manghnani, M. H., W. Nellis, and M. F. Nicol (eds.), *AIRAPT-17, Proc. Int. Conf. on High Pressure Science and Technology*, Universities Press, India, 941-944.
  90. Zhang, X., **M. H. Manghnani** and A. G. Every, Evidence for a shear horizontal resonance in supported thin films. *Physical Review B* **62**(4) R2271-R2274 (2000).
  91. **Zinin, P. V.**, 2000, Quantitative acoustic microscopy of solids, in Levy, M., H. Bass, R. Stern, and V. Keppens (eds.), *Handbook of elastic properties of solids, liquids, and gases. Vol. I: Dynamical Methods for Measuring the Elastic Properties of Solids*, Academic Press, New York, 187-226.
  92. **Zinin, P., M. H. Manghnani**, Y. C. Wang, and R. A. Livingston, 2000, Detection of cracks in concrete composites using acoustic microscopy, *NDT&E Int.*, 33, 5, 283-287.