

BIBLIOGRAPHY
LIBS for Bacterial/Biological Identification (updated November 2011)

Red means no chemometrics (none after 2007)

1. **Assion, A., M. Wollenhaupt, L. Haag, F. Mayorov, C. Sarpe-Tudoran, M. Winter, U. Kutschera, T. Baumert.** 2003. Femtosecond laser-induced breakdown spectrometry for Ca²⁺ analysis of samples with high spatial resolution. *Appl. Phys. B* **77**, 391-397. Universitat Kassel, Germany.
2. **Barnett, C., C. Bell, K. Vig, A.C. Akpovo, L. Johnson, S. Pillai, S. Singh.** 2011. Development of a LIBS assay for the detection of *Salmonella enterica* serovar Typhimurium from food. *Anal. Bioanal. Chem.* **400**, 3323–3330. Alabama State University.
3. **Baudelet, M., J. Yu, M. Bossu, J. Jovelet, J.-P. Wolf, T. Amodeo, E. Frejafon, P. Laloi.** 2006a. Discrimination of microbiological samples using femtosecond laser-induced breakdown spectroscopy. *Appl. Phys. Lett.* **89**, 163903 1-3. Universite Claude Bernard-Lyon, Cedex, France.
4. **Baudelet, M., L. Guyon, J. Yu, J.-P. Wolf, T. Amodeo, E. Frejafon, P. Laloi.** 2006b. Spectral signature of native CN bonds for bacterium detection and identification using femtosecond laser-induced breakdown spectroscopy. *Appl. Phys. Lett.* **88**, 06391 1-3. Universite Claude Bernard-Lyon, Cedex, France.
5. **Baudelet, M., L. Guyon, J. Yu, J.-P. Wolf, T. Amodeo, E. Frejafon, P. Laloi.** 2006c. Femtosecond time-resolved laser-induced breakdown spectroscopy for detection and identification of bacteria: A comparison to the nanosecond regime. *J. Appl. Phys.* **99**, 084701 1-9. Universite Claude Bernard-Lyon, Cedex, France.
6. **Baudelet M., M. Boueri, J. Yu, X. Mao, S. S. Mao, and R. Russo.** 2009. Laser ablation of organic materials for discrimination of bacteria in an inorganic background. *Proc. SPIE* 7214 72140J. Universite Claude Bernard-Lyon, Cedex, France.
7. **Beddows, D.C.S. and H.H. Telle.** 2005. Prospects of real-time single-particle biological aerosol analysis: A comparison between laser-induced breakdown spectroscopy and aerosol time-of-flight mass spectrometry. *Spectrochim. Acta B* **60**, 1040-1059. Univ. of Wales, Swansea.
8. **Bogue, R.W.** 2004. Boom time for LIBS technology. *Sensor Review* 24, 353-357.
9. **Boyain-Goitia, A.R., D.C.S. Beddows, B.C. Griffiths, H.H. Telle.** 2003. Single-pollen analysis by laser-induced breakdown spectroscopy and Raman spectroscopy. *Appl. Opt.* **42**, 6119-6132. Univ. of Wales, Swansea.
10. **DeLucia, Jr., F.C., A.C. Samuels, R.S. Harmon, R.A. Walter, K.L. McNesby, A. LaPointe, R.J. Winkel, Jr., A.W. Mizolek.** 2005. Laser-induced breakdown spectroscopy (LIBS): a promising versatile chemical sensor technology for hazardous material detection. *IEEE Sens. Jour.* **50**, 681-689. US Army Research Laboratory, Aberdeen Proving Ground, USARL.
11. **Diedrich, J., S.J. Rehse, S. Palchaudhuri.** 2007a. *Escherichia coli* identification and strain discrimination using nanosecond laser-induced breakdown spectroscopy. *Appl. Phys. Lett.* **90**, 163901 1-3. Wayne State University.
12. **Diedrich, J., S.J. Rehse, S. Palchaudhuri.** 2007b. Pathogenic *Escherichia coli* strain discrimination using laser-induced breakdown spectroscopy. *J. Appl. Phys.* **102**, 014702 1-8. Wayne State University.
13. **Dixon, P.B. and D.W. Hahn.** 2005. Feasibility of detection and identification of individual bioaerosols using laser-induced breakdown spectroscopy. *Anal. Chem.* **77**, 631-638. University of Florida.

14. **Gottfried, J.L.** 2011. Discrimination of biological and chemical threat simulants in residue mixtures on multiple substrates. *Ana. Bioanal. Chem.* **400**, 3289–3301. US Army Research Laboratory, Aberdeen Proving Ground, USARL.
15. **Gottfried, J.L., F.C. De Lucia Jr., C.A. Munson, A.W. Mizolek.** 2007. Double-pulse standoff laser-induced breakdown spectroscopy for versatile hazardous materials detection. *Spectrochim. Acta B* **62**, 1405–1411. US Army Research Laboratory, Aberdeen Proving Ground, USARL.
16. **Gottfried, J.L., F.C. De Lucia, C.A. Munson, A.W. Mizolek.** 2008. Standoff Detection of Chemical and Biological Threats Using Laser-Induced Breakdown Spectroscopy. *Appl. Spectrosc.* **62**, 353-363. US Army Research Laboratory, Aberdeen Proving Ground, USARL.
17. **Hybl, J.D., G.A. Lithgow, S.G. Buckley.** 2003. Laser-induced breakdown spectroscopy detection and classification of biological aerosols. *Appl. Spectr.* **57**, 1207-1215. MIT Lincoln Laboratory.
18. **Kim, T., Z.G. Specht, P.S. Vary, C.T. Lin.** 2004. Spectral fingerprints of bacterial strains by laser-induced breakdown spectroscopy. *J. Phys. Chem. B* **108**, 5477-5482. Northern Illinois University.
19. **Leone, N., G. D'Arthur, P. Adam, J. Amouroux.** 2004. Detection of bacterial deposits and bioaerosols by time-resolved laser-induced breakdown spectroscopy (TRELIBS). *High Technology Plasma Processes* **8**, 1-22. Universite p.et M. Curie Paris, France.
20. **Lewis, D.E., J. Martinez, C.A. Akpovo, L. Johnson, A. Chauhan, M.D. Edington.** 2011. Discrimination of bacteria from Jamaican bauxite soils using laser-induced breakdown spectroscopy. *Anal. Bioanal. Chem.* **401**, 2225–2236. Florida A&M University.
21. **Marcos-Martinez, D., J.A. Ayala, R.C. Izquierdo-Hornillos, F.J. Manuel de Villena, J.O. Caceres.** 2011. Identification and discrimination of bacterial strains by laser induced breakdown spectroscopy and neural networks. *Talanta* **84**, 730–737. Universidad Complutense, Madrid, Spain.
22. **Merdes, D.W., J.M. Suhan, J.M. Keay, D.M. Hadka, W.R. Bradley.** 2007. The investigation of laser-induced breakdown spectroscopy for detection of biological contaminants on surfaces. *Spectroscopy* **22**, 28-38. The Pennsylvania State University.
23. **Mohaidat, Q., S. Palchaudhuri, S.J. Rehse.** 2011. The effect of bacterial environmental and metabolic stresses on a LIBS-based identification of *Escherichia coli* and *Streptococcus viridans*. *Applied Spectroscopy* **65**, 386-392. University of Windsor.
24. **Morel, S., M. Leone, P. Adam, J. Amouroux.** 2003. Detection of bacteria by time-resolved laser-induced breakdown spectroscopy. *Appl. Opt.* **42**, 6184-6191. Direction Generale de l'Armement.
25. **Multari, R., D.A. Cremers, J.M. Dupre, J.E. Gustafson.** 2010. The use of laser-induced breakdown spectroscopy for distinguishing between bacterial pathogen species and strains. *Applied Spectroscopy* **64**, 750-759. Applied Research Associates, Inc.
26. **Munson, C.A., F.C. DeLucia, T. Piehler, K.L. McNesby, A.W. Mizolek.** 2005. Investigation of statistics strategies for improving the discriminating power of laser-induced breakdown spectroscopy for chemical and biological warfare agent simulants. *Spectrochim. Acta B* **60**, 1217-1224. US Army Research Laboratory, Aberdeen Proving Ground, USARL.
27. **Rehse, S.J., Q.I. Mohaidat, S. Palchaudhuri.** 2010. Towards the clinical application of laser-induced breakdown spectroscopy for rapid pathogen diagnosis: the effect of mixed cultures and sample dilution on bacterial identification. *Applied Optics* **49**, C27-C35. Wayne State University.
28. **Rehse, S.J., J. Diedrich, S. Palchaudhuri.** 2007. Identification and discrimination of *Pseudomonas aeruginosa* bacteria grown in blood and bile by laser-induced breakdown spectroscopy. *Spectrochim. Acta B* **62**, 1169-1176. Wayne State University.

29. **Rehse, S.J., N. Jeyasingham, J. Diedrich, S. Palchaudhuri.** 2009. A Membrane Basis for Bacterial Identification and Discrimination Using Laser-Induced Breakdown Spectroscopy. *J. Appl. Phys.* **105**, 102034. Wayne State University.
30. **Samuels A.C., F.C. DeLucia, Jr., K.L. McNesby, A.W. Mizolek.** 2003. Laser-induced breakdown spectroscopy of bacterial spores, molds, pollens, and protein: initial studies of discrimination potential. *Appl. Opt.* **42**, 6205-6209. US Army Research Laboratory, Aberdeen Proving Ground, USARL.
31. **Snyder, E.G., C.A. Munson, J.L. Gottfried, F.C. De Lucia, Jr., B. Gullett, A.W. Mizolek.** 2008. Laser-induced breakdown spectroscopy for the classification of unknown powders. *Applied Optics* **47**, G80-G87. U.S. EPA Office of Research and Development, National Homeland Security Research Center/US Army Research Laboratory, Aberdeen Proving Ground, USARL.
32. **Xu, H.L., G. Mejean, W. Liu, Y. Kamali, J.-F. Daigle, A. Azarm, P.T. Simard, P. Mathieu, G. Roy, J.-R. Simard, S.L. Chin.** 2007. Remote detection of similar biological materials using femtosecond filament-induced breakdown spectroscopy. *Appl. Phys. B* **87**, 151-156. Universite Laval, Quebec.

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