

**DIAGNOSTIC INSTRUMENTATION AND ANALYSIS LABORATORY  
COLLEGE OF ENGINEERING - MISSISSIPPI STATE UNIVERSITY**

**FY 2003 - 2004 ANNUAL REPORT TO THE VICE PRESIDENT FOR RESEARCH**

**Brief Description and Purpose**

The Diagnostic Instrumentation and Analysis Laboratory (DIAL) continues its 28-year tradition of excellence in diagnostic and engineering research at Mississippi State University (MSU). Prior to 1993, the majority of its funding was from the Office of Technology Development within the Office of Environmental Management of the U.S. Department of Energy (DOE). Since then, a vigorous diversification program has been established with sponsors from other branches of government including the Department of Defense (DOD), NASA, DOE-Fossil Energy, and EPA, along with specific industrial partners and consortia.

DIAL is an interdisciplinary research department in the College of Engineering employing more than 65 professional and support personnel. A number of the professionals hold joint appointments in academic departments in the College of Engineering and the College of Arts & Sciences. DIAL has the distinction of being the longest continuously funded research program in the College of Engineering with funding in excess of \$92 million dollars since 1976. DIAL is among the leaders at MSU in the development of intellectual property with more than 25 patents and licenses applied for by the staff to date. Since 1976, DIAL has supported more than 400 students who were seeking masters and doctoral degrees.

The DIAL facility is a 58,000-square-foot, state-of-the-art building located on eight acres in the Mississippi Research and Technology Park. The facility consists of 41 faculty and administrative offices, two classrooms, a 100-seat auditorium, a machine shop, a high-bay test area, 16 research laboratories, and numerous graduate student offices. Funding for this facility was provided through a grant from the Department of Energy and with matching funds from the State of Mississippi.

**Mission**

The mission of the Diagnostic Instrumentation and Analysis Laboratory is to provide solutions for process characterization, monitoring, control and optimization problems. DIAL is expanding its efforts in diagnostics, computer modeling and simulation, engineering system evaluation, outreach, and economic development to benefit government agencies and the environmental, heating, chemical, and petroleum industries. This transfer of technology broadens the base of sponsor investment in research and development.

**Research Program**

The research program at DIAL includes the development and application of advanced diagnostic systems, analytical model development and validation, test facilities process development, and on-site field measurements and analysis. Current focus areas include studies on remediation of the legacy wastes remaining following the Cold War, the evaluation and assessment of alternative energy sources and processes, and the development and application of modern, non-intrusive diagnostic instruments for monitoring and controlling engineering systems.

**Personnel**

Post Doctorates - 1  
Doctorates - 2  
Masters - 8  
Undergraduates - 3  
Visiting Research Scientists/Associates - 2  
Research Professionals - 24  
Administrative/Technical Support Staff - 11

**Scientists**

Rangaswani Arunkumar  
John Etheridge  
Adriana Giordana, PhD

Ping-Rey Jang  
 Jeff Lindner, PhD  
 John C. Luthe, PhD  
 Thomas L. Meaker, PhD  
 Olin Perry Norton, PhD  
 M. J. Plodinec, PhD  
 W. G. Ramsey, PhD  
 Jagdish P. Singh, PhD  
 Laura T. Smith, PhD  
 Yi Su, PhD  
 Shiquan Tao, PhD  
 Charles Waggoner, PhD  
 Chuji Wang, PhD  
 Fang-Yu Yueh

#### Scientists Joint with Another Department

Mark Bricka, PhD, Chemical Engineering  
 David L. Monts, PhD, Physics  
 Rebecca Toghiani, PhD, Chemical Engineering

<b>Proposals Submitted</b>			
PIs	TITLE	FUNDING SOURCE	AMOUNT
Norton	Modeling to support real-time shipboard fire and smoke spread prediction	Geo-Centers	53,963
Plodinec	Louis Berger Project No. GG458	Louis Berger Group Clean Technology Initiative	10,248
Singh Burgess Yueh A. Kumar	Fiber optic in vivo imaging probe for cancer diagnosis	National Cancer Institute National Institutes of Health	354,050
Wang	Peroxy CRDS	National Science Foundation State University of New York	159,288
Etheridge	Production of commercial chemical from waste biomass – phase two	US DOE MS Ethanol	549,999
Ramsey	Thermal acoustic barriers for AAV	Miltec Corp.	24,999
Plodinec	Cooperative agreement: characterization and cleanup of the defense nuclear legacy	US DOE	30,000,000
Yi Su Monts Jang	A portable real-time LWIR spectral imaging system (IDD-1094-JEP856-DIAL/MSU-11)	US Dept. of Homeland Security	243,605
Singh Yueh Khijwania	Real-time non-intrusive detection of liquid nitrogen in liquid oxygen at high pressure and high flow	MS Ethanol	59,999
Singh Yueh	On-line sampling and analysis of high pressure, high flow liquid oxygen-nitrogen mixture	MS Ethanol	60,000
Singh Yueh	Non-intrusive, real-time, on-line temperature sensors for cryogenic fluid at high pressure, high flow	MS Ethanol	23,173
Wang	Fiber ringdown pressure sensors	NASA HG	58,001
Singh Burgess Austin Khijwania	Fiber optic bio-sensor for detecting dental bacteria	NIH	389,911
Yi Su	A portable real-time LWIR spectral imaging system	US Dept. of Homeland	300,105

<b>Proposals Submitted</b>			
PIs	TITLE	FUNDING SOURCE	AMOUNT
Monts Jang	(IDD-1094-JEP856-DIAL/MSU-11)	Security	
Monts Arnoldus Waggoner Letfullin	Experimental demonstration of a photon-branched chain reaction	NSF	1,696,751
Tao	Micro optical fiber sensor array for monitoring chemical warfare agents and industrial toxic chemicals	US Dept. of Homeland Security	391,489
Wang	Smart sensors for CWAs and TICs detection using in chemically functionalized material assisted spectral method	US Dept. of Homeland Security	453,604
Giordana Horstemeyer Bumgardner Yu Ramsey Novotny Brandenburg Koshka	International materials institute for technology and education advancement	NSF	4,969,746
Norton	Ballistic modeling service for automotive applications	NineSigma, Inc.	
Ramsey Steele Ingram	On-line oxidation of volatile compounds generated by sawmill wood kilns	US DOE	244,266
Han	Development of cost effective adsorbent clays for treating wastewater from concentrated animal feeding operations in Mississippi	US EPA	80,000
Smith	Spectra study – service agreement	Future Labs, Inc.	203
Kauffman	Fiberglass development study – service agreement	Gonterman and Associates	35,671
Arunkumar Pearson	Adaptation of xpak oil/brine separator to improve efficiency of recovery of heavy oils	Nu-Corp International Technologies	470,920
Tao Fanguy Giordana	Optical fiber chemical sensor with sol-gel derived refractive material as transducer for high temperature gas sensing in clean coal technology	US DOE	353,770
Norton Giordana	Enhancement of structural foam materials by incorporation of gasifier slag	US DOE	125,000
Giordana Norton	Shear stress resistant foam glass material for building insulation	US DOE	479,100
Plodinec	Evaluation of innovative processes and products	T. Boyd Kellum	7,500
Yueh Singh Khijwania Willard	Integrated laser-induced fluorescence and diffuse reflectance imaging system for cancer diagnosis and staging	MSU/Life Science and Biotechnology Institute	113,515
Yueh Singh	Cancer diagnosis and staging using laser induced breakdown spectroscopy	MSU/Life Science and Biotechnology Institute	113,515
Yueh Singh Khijwania Ryan	Cancer diagnosis and staging by LIF, Raman, DR and EEMs integrated optical fiber probe	MSU/Life Science and Biotechnology Institute	113,515
Singh Yueh	Laser microplasma spectroscopy for characterization of nano-scale materials	CAEC LLC DOD/STTR US Army	49,951
Yueh Singh Khijwania	Optical device for breath biomarkers of oxidative stress status (OSS)	Nishaan Technologies, Inc.	38,000
Yueh	Nano material based chemical warfare agents	CAEC LLC DOD/STTR	45,000

<b>Proposals Submitted</b>			
PIs	TITLE	FUNDING SOURCE	AMOUNT
Singh Khijwania	(CWA) preconcentrator/sampler for spectral sensing	US Army	
Plodinec	Hanford waste treatment and immobilization plant baseline review	US Army Corp of Engineers	17,300
Singh Yueh	Spectroscopic characterization of the gas phase chemistry and role of inert gas with hydrogen atom in low temperature diamond chemical vapor	Jackson State University NSF	442,759

<b>03-04 New Awards</b>				
PIs	TITLE	FUNDING SOURCE	TYPE \$	TOTAL AMOUNT
Cook	Development of a computer simulator that couples the glass with the fuel combustion	US DOE/Argonne National Lab	Federal	10,000
Plodinec	DIAL/DOE support grant	US DOE	Federal	500,000
Wang	Ultra-sensitive elemental and isotope measurements with compact plasma source cavity ring-down spectroscopy	US DOE/Los Alamos National Lab	Federal	225,000
Plodinec	To train interns from the former soviet union under the special American business internship training program	US Dept. of Commerce	Federal	(16,688)
Plodinec	Feasibility study of alternative energy development on tribal lands	MS Band of Choctaw Indians		
Pearson	Oil/water separator	Nu-Corp International Technologies		
Jang Monts	Furnace fireball location system	TVA	Federal	9,906 3,000
Miller	Hollow deck	MN Dept. of Transportation	State	5,000
Tao	Active-core optical fiber ammonia sensor	ADA Technologies	Private	20,000
Plodinec	Louis Berger project GG458	Louis Berger Group, Inc.	Private	10,249
Etheridge	MS ethanol project: gasification effort	MS Ethanol		900,000 689,750 (139,750)
Plodinec	Southeastern regional carbon sequestration partnership	Southern States Energy Board		28,224 (5,645) 142,386
Singh Yueh Khijwania	Real-time non-intrusive detection of liquid nitrogen in liquid oxygen at high pressure and high flow	MS Ethanol		54,556
Smith	Spectra study – service agreement	Future Labs, LLC	Private	203
Plodinec	Hanford waste treatment and immobilization plant baseline review	Project Time and Cost		17,300
Wang	Peroxy CRDS	National Science Foundation/State University of New York		101,054
Plodinec	Cooperative agreement: characterization and cleanup of the defense nuclear legacy	US DOE	Federal	4,970,000
Yi Su Monts Jang	Long wavelength infrared spectral imaging system (TSWG Task # 1767B)	US Dept. of Homeland Security	Federal	539,855

## PUBLICATIONS

### BOOKS

A.K. Rai, S.N. Thakur and J.P. Singh. 2004. Photoacoustic in agriculture and plant science. In *Analytical Instrument Handbook*, Jack Cazes, ed. Marcel Dekker, Inc.

J.P. Singh, et al. 2004. Environmental contamination and military applications of LIBS. In *Laser-induced Breakdown Spectroscopy (LIBS): Fundamentals and Applications*. A. Miziolek, V. Palleschi and I. Schechter, eds. Cambridge University Press.

### PUBLICATIONS – REFEREED

A. Giordana, W.G. Ramsey, T.F. Meaker, B. Kauffman, M. McCarthy, K. Guilbeau, J.D. Smith, F.S. Miller, T. Sanders E.W. Bohannan, J. Powell, M.Reich, J. Jordan, L. Ventre, R.E. Barletta, A.A. Ramsey, G. Maise, B. Manowitz, M. Steinberg and F. Salzano. 2004. Thermal processing optimization for simulated Hanford waste glass (AZ 101). *Ceramic Transactions* 55:351.

F.X. Han, Y. Su, D.L. Monts, M.J.Plodinec, A. Banin, G.E. Triplett. August 2003. Assessment of global industrial-age anthropogenic arsenic contamination. *Naturwissenschaften* 90:9:395-401.

F.X. Han, B.B. Maruthi Sridhar, D.L. Monts and Y. Su. 2004. Phytoavailability and toxicity of trivalent and hexavalent chromium to *brassica juncea l*. *New Phytologist* 162:489-499.

S.K. Khijwania, R. Jindal and J.P. Singh. 2003. An evanescent wave optical fiber relative humidity sensor. *Asian Journal of Physics* 10:1-5.

Akshaya Kumar, Fang Yu Yueh, Tracy Miller and Jagdish P. Singh. October 2003. Detection of trace elements in liquid using Meinhard nublizer by laser-induced breakdown spectroscopy. *Applied Optics* 42:6040-6046.

Akshaya Kumar, Fang Yu Yueh and Jagdish P. Singh. October 2003. Study of double pulse laser induced breakdown spectroscopy using different thickness jets. *Applied Optics* 42:6047-6051.

A.K. Rai, K.R. Reddy and J.P. Singh. 2003. Study of nutritional deficiency in cotton plants with photoacoustic spectroscopy. *Instrumentation Science and Technology* 31:231-247.

A.K. Rai and J.P. Singh. 2003. Perspective of photoacoustic spectroscopy in disease diagnosis of plants: a review. *Instrumentation Science and Technology* 31:323-342.

V.N. Rai, J.P. Singh, C.B. Winstead, F.Y. Yueh and R.L. Cook. November 2003. Laser-induced breakdown and emission spectroscopy of hydrocarbon fueled flame and rocket engine simulator plume. *AIAA Journal* 41:9:2192-2199.

V.N. Rai, J.P. Singh, F.Y. Yueh and R.L. Cook. 2003. Study of laser produced plasma expanding across an external magnetic field. *Laser and Particle Beam* 21:65-71.

V.N. Rai, H. Zhang, F.Y. Yueh, J.P. Singh and A. Kumar. June 2003. Effect of steady magnetic field on laser-induced breakdown. *Applied Optics* 42:3662-3669.

C. Wang, S.P. Koirala, S.T. Scherrer, Y. Duan and C.B. Winstead. May 2004. Diode laser microway induced plasma cavity ringdown spectrometer: performance and perspective. *Review of Scientific Instruments* 75:5:1305.

C. Wang and S.T. Scherrer. 2004. Fiber ringdown pressure sensors. *Optics Letters* 29:4:352.

C. Wang, F.J. Mazzotti, S.P. Koirala, G.P. Miller and C.B. Winstead. June 2004. Measurements of OH radical in an atmospheric inductively coupled plasma by cavity ringdown spectroscopy. *Applied Spectroscopy* 58:6:741-744.

C. Wang, S.T. Scherrer and D. Hossaind. July 2004. Measurements of cavity ringdown spectroscopy of acetone in the UV and near-IR spectral regions: potential for development of breath analyzer. *Applied Spectroscopy* 58:7:784-791.

C. Wang, F.J. Mazzotti, G.P. Miller and C.B. Winstead. XX 2003. Isotopic measurements of uranium using inductively coupled plasma cavity ringdown spectroscopy. *Applied Spectroscopy* 57:9:1167-1172.

## PRESENTATIONS

R. Arunkumar, J.A. Etheridge, J.C. Luthe, B.A. Nagel, O.P. Norton, M.S. Parsons, D.M. Rogers, K.U. Hogancamp and C.A. Waggoner. February 2004. Evaluation of mass emission rates down stream of HEPA filters as a function of source terms and selected failure modes. Waste Management '04 Conference, Tuscon, AZ.

R. Arunkumar, J.A. Etheridge, J.C. Luthe, B.A. Nagel, O.P. Norton, M.S. Parsons, D.M. Rogers, K.U. Hogancamp and C.A. Waggoner. February 2004. A comparison of methods for measuring and monitoring particulate matter downstream of HEPA filters. Waste Management '04 Conference, Tuscon, AZ.

R. Arunkumar, J.A. Etheridge, K.U. Hogancamp, J.C. Luthe, B.A. Nagel, O.P. Norton, M.S. Parsons, D.M. Rogers and C.A. Waggoner. February 2004. An evaluation of EPA reference method 5i accuracy. Waste Management '04 Conference, Tuscon, AZ.

R. Arunkumar, J.A. Etheridge, K.U. Hogancamp, J.C. Luthe, B.A. Nagel, O.P. Norton, M.S. Parsons, D.M. Rogers and C.A. Waggoner. May 2004. Measurement uncertainty analysis of EPA referency methods 5 and 5i. IT3 '04 Conference, Phoenix, AZ.

R. Arunkumar, J.A. Etheridge, J.C. Luthe, B.A. Nagel, O.P. Norton, M.S. Parsons, D.M. Rogers, K.Umfress and C.A. Waggoner. May 2004. Evaluation of emissions from HEPA filters as a function of challenge conditions. IT3 '04 Conference, Phoenix, AZ.

R. Arunkumar, J.A. Etheridge, K.U. Hogancamp, J.C. Luthe, B.A. Nagel, O.P. Norton, M.S. Parsons, D.M. Rogers and C.A. Waggoner. March 2004. Application of standard measurement uncertainty models to EPA reference method 5i. Stationary Source Sampling and Analysis for Air Pollutants XXVIII, Kiawah Island, SC.

M. Shelly John and J.P. Singh. October 2003. Self-calibrated fiber optic transfection probe for NO<sub>2</sub> detection. SPIE Photonics East, Industrial and Highway Sensors Technology, Rhode Island.

S.K. Khijwania, K.L. Srinivasan and J.P. Singh. October 2003. Raman sensor to monitor the nitrate and nitrite in the nuclear waste tanks. SPIE Photonics East, Chemical and Biological Standoff Detection, Rhode Island.

S.K. Khijwania, K.L. Srinivasan and J.P. Singh. October 2003. A novel optical fiber relative humidity sensor with optimized performance characteristics. SPIE Photonics East, Industrial and Highway Sensors Technology, Rhode Island.

S. P. Koirala, S.T. Scherrer, C. Wang, Y. Duan and C.B. Winstead. October 2003. Elemental and isotopic measures using plasma diode laser ringdown spectroscopy. FACSS Conference, Ft. Lauderdale, FL.

J.S. Lindner, Y. Zhong, R.K. Toghiani and L.T. Smith. October 2003. Thermodynamic modeling of the Hanford 242-A evaporator. 13<sup>th</sup> Symposium on Separation Science Technology for Energy Applications, Gatlinburg, TN.

J.S. Lindner, L.T. Smith, A. Antonyraj, and R.K. Toghiani. July 2003. Thermodynamic simulations in support of Savannah River Site Tank 41H retrieval and processing. Salt Processing POW, Savannah River Site.

M.J. Plodinec, P.R. Jang, Z. Long, D.L. Monts, W.P. Okhuysen, T. Philip, and Y. Su. September 2003. Application of optical and imaging techniques to inspection of off-line Joule-heated melter at the West Valley demonstration project. Ninth International Conference on Environmental Remediation and Radioactive Waste Management. Examination Schools, Oxford, England.

L.T. Smith, A. Antonyraj, T. Durve, R.K. Toghiani and J.S. Lindner. October 2003. Experimental and modeling studies on the SRS low Curie salt process. 13<sup>th</sup> Symposium on Separation Science Technology for Energy Applications, Gatlinburg, TN.

C. Wang, C.B. Winstead, Y. Duan, S.T. Scherrer, S.P. Koirala, P.R. Jang, G.P. Miller and F.J. Mazzotti. April 2004. Plasma cavity ringdown spectrometer for elemental and isotopic measurements: past, present and future. ACS Conference, Anaheim, CA.

C. Wang, S.T. Scherrer, P.R. Jang and D.L. Monts. October 2003. Development of sensitive and inexpensive sensors using fiber loop ringdown spectroscopy. FACSS Conference, Ft. Lauderdale, FL.

C. Wang, D. Hossain and S.T. Scherrer. October 2003. Development of breath analyzer for diabetes diagnosis using cavity ringdown spectroscopy. FACSS Conference, Ft. Lauderdale, FL.

C. Wang, S.P. Koirala, S.T. Scherrer. March 2004. Instrument development using plasma-cavity ringdown spectroscopy with compact plasma source and a diode laser. Pittcon 2004, Chicago, IL.

## REPORTS

R.D. Hunt, J.S. Lindner, A.J. Mattus, J.C. Schryver, C.F. Weber. July 2003. Waste preparation and transport chemistry: results of the FY 2002 studies. ORNL/TM-2002/300.  
<http://lib1.isd.ornl.gov:8182/TSEARCH/BASIS/tidd/fqma/tpsext/SF>

S. Khijwania, F.Y. Yueh and J.P. Singh. September 2003. Concentration ratio measurement of N<sub>2</sub> and O<sub>2</sub> in a liquid oxygen feed line. Final report to NASA/SSC. Contract No. NAS13-98033. Mississippi State University, Diagnostic Instrumentation and Analysis Laboratory.

J.S. Lindner, L.T. Smith, A. Antonyraj and R.K. Toghiani. Thermodynamic simulations in support of Savannah River Site Tank 41H retrieval and processing. DIAL 40395-Letter Report. Diagnostic Instrumentation and Analysis Laboratory, Mississippi State University.

J.S. Lindner and R.K. Toghiani. Thermodynamic modeling of the 2000-01 242-A evaporator campaign. DIAL 40395-Letter Report. Diagnostic Instrumentation and Analysis Laboratory, Mississippi State University.

J.S. Lindner, Y. Zhong and R.K. Toghiani. Dissolution and evaporative processing of salt cake waste from Hanford Tank 241-S-112. DIAL 40395-Letter Report. Diagnostic Instrumentation and Analysis Laboratory, Mississippi State University.

M.J. Plodinec and DIAL Research Professionals. July 2003. Instrumentation development, measurement and performance evaluation of environmental technologies. DIAL 40395-20. Quarterly Technical Progress Report for the period April - June 2003. Diagnostic Instrumentation and Analysis Laboratory, Mississippi State University.

M.J. Plodinec and DIAL Research Professionals. October 2003. Instrumentation development, measurement and performance evaluation of environmental technologies. DIAL 40395-21. Quarterly Technical Progress Report for the period July - September 2003. Diagnostic Instrumentation and Analysis Laboratory, Mississippi State University.

M. J. Plodinec and DIAL Research Professionals. January 2004. DIAL 54600-01. Quarterly Technical Progress Report for the period October – December 2003. Diagnostic Instrumentation and Analysis Laboratory, Mississippi State University.

M. J. Plodinec and DIAL Research Professionals. April 2004. DIAL 54600-02. Quarterly Technical Progress Report for the period January – March 2004. Diagnostic Instrumentation and Analysis Laboratory, Mississippi State University.

## PATENTS & DISCLOSURES

F.X. Han, Y. Su and D.L. Monts. 2004. Engineered nanophase materials for the removal of inorganic contaminants from water. U.S. provisional patent application. MSU Disclosure No. 03-0616-53, Docket No. 2343-184-27 PROV.

A. Kumar, F.Y. Yueh and J.P. Singh. 2003. Laser-induced breakdown spectroscopy: application to life sciences. MSU Disclosure No. 03-0414-50.

M. Shelly John and J.P. Singh. 2003. Fiber optics sensor for NO<sub>2</sub> detection. MSU Disclosure No. 03-0331-48.

M. Shelly John, S. Khijwania and J.P. Singh. 2003. A fiber optics glucose sensor. MSU Disclosure No. 03-0425-51.

C. Wang. 2003. Novel fiber ringdown pressure sensors. MSU Disclosure No. 03-0905-61.

C. Wang, C.B. Winstead and Yixiang Duan. 2003. Method and apparatus for elemental and isotope measurements and diagnostics – microwave induced plasma cavity ring-down spectroscopy. U.S. Patent (pending) No. 10/367,806.

### **THESES & DISSERTATIONS**

Tushar Subhash Durve. August 2003. A physico-chemical characterization of salt cake dissolution and study of sodium phosphate dodehydrate plug remediation. Masters Thesis. Department of Chemical Engineering, College of Engineering, Mississippi State University.

Parikshit Gaikward. August 2003. Chemically deposited optical fiber humidity sensor. Masters Thesis. Department of Electrical and Computer Engineering, College of Engineering, Mississippi State University.

Prasanthi Inakollu. August 2003. A study of the effectiveness of neural networks for elemental concentration from LIBS spectra. Masters Thesis. Department of Electrical and Computer Engineering, College of Engineering, Mississippi State University.

Sudip Prasad Koirala. December 2003. Plasma cavity ringdown spectroscopy – a powerful technique for elemental measurements and plasma diagnostics. Masters Thesis. Department of Physics and Astronomy, College of Arts and Sciences, Mississippi State University.

Dinesh Kumar Selvaraj. August 2003. Solubility Studies on the Na-F-PO<sub>4</sub> system in sodium nitrate and in sodium hydroxide solutions. Masters Thesis. Department of Chemical Engineering, College of Engineering, Mississippi State University.

Kirthi L. Sreenivasan. August 2003. Fiber optic moisture sensor detection system. Masters Thesis. Department of Computer Science and Engineering, College of Engineering, Mississippi State University.

Yun Sun. August 2003. Image analysis based soil texture classification. Masters Thesis. Department of Computer Science and Engineering, College of Engineering, Mississippi State University.

### **AWARDS & RECOGNITION**

Dr. Feng Xiang Han was appointed to the Editorial Board of the refereed scientific journal, *Water, Air, and Soil Pollution*, published by Kluwer Academic Publishers, The Netherlands.