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1. EDUCATION

2007	Ph.D.*	Environmental Sciences	University of Lucknow, India
2001	PGDEPL	Environmental Protection Law	University of Lucknow, India
1999	M.Sc.	Environmental Sciences	University of Lucknow, India
1997	B.Sc.	Biology	Poorvanchal University, India

*Title of Thesis: Health effects of indoor and outdoor air pollution: mechanism of action and human biomonitoring studies.

2. PROFESSIONAL EXPERIENCE

2006- Present	Visiting Research Associate, Civil and Environmental Engineering Deptt, Michigan State University
2001- 2006	Research Fellow, Industrial Toxicology Research Centre, Lucknow, India
1999 (October – December)	M.Sc. Project dissertation
1998- 1999 (December-March)	M.Sc. Project dissertation

3. RESEARCH INTERESTS

- Biochemical and Genetic toxicology
- Molecular Epidemiology
- Nanomaterial Toxicology
- Currently working on:
 - Potential of Quantum dots as surrogate of microbial pathogens and genotoxicity of QDs and
 - Development of virulence factor biochip and its validation for microbial risk assessment in drinking water

4. PUBLICATIONS

4.1 Reviewed archival journal publications

1. Alok Dhawan, Neeraj Mathur and Prahlad K. Seth (2001) The effect of smoking and eating habits on DNA damage in Indian population as measured in the comet assay. *Mutation Research, Fundamental and Molecular Mechanisms of Mutagenesis* 474 (1-2) 121-128. **(Work from M.Sc. Dessertation)**
2. Mahima Bajpayee, Alok Dhawan, Devendra Parmar, **Alok Kumar Pandey**, Neeraj Mathur and Prahlad Kishore Seth (2002) Gender related differences in basal DNA damage in lymphocytes of healthy Indian population as revealed by the alkaline Comet assay. *Mutation Research, Genetic Toxicology and Environmental Mutagenesis*, 520 (1-2): 83-91.
3. **Alok K. Pandey**, Mahima Bajpayee, Devendra Parmar, Subodh K. Rastogi, Neeraj Mathur, Prahlad K. Seth and Alok Dhawan (2005) DNA damage in lymphocytes of rural Indian women exposed to biomass fuels as assessed by the comet assay. *Environmental and Molecular Mutagenesis* 45 (5) 435-441.
4. Mahima Bajpayee, **Alok Kumar Pandey**, Devendra Parmar, Neeraj Mathur, Prahlad K. Seth and Alok Dhawan (2005) Comet assay responses in human lymphocytes are not influenced by the menstrual cycle: a study in healthy Indian females. *Mutation Research, Genetic Toxicology and Environmental Mutagenesis* 565 (2): 163-172.
5. Mahima Bajpayee, **Alok K. Pandey**, Devendra Parmar and Alok Dhawan (2005). Current Status of Short Term Tests for Evaluation of Genotoxicity, Mutagenicity and Carcinogenicity of Environmental Chemicals and NCEs. *[REVIEW] Toxicology Mechanisms and Methods* 15: 1-26.
6. **Alok K. Pandey**, Mahima Bajpayee, Devendra Parmar, Subodh K. Rastogi, Neeraj Mathur, Prahlad K. Seth and Alok Dhawan (2006) DNA damage in lymphocytes of Indian rickshaw pullers as measured by the alkaline Comet assay. *Environmental and Molecular Mutagenesis* 47(1): 25-30.
7. Sushila Patel, Alok K. Pandey, Mahima Bajpayee, Devendra Parmar, and Alok Dhawan (2006) Cypermethrin induced DNA damage in organs and tissues of mouse: Evidence by Comet Assay. *Mutation Research* 607(2):176-83.
8. Mahima Bajpayee, **Alok Kumar Pandey**, Sabina Zaidi, Javed Musarrat, Devendra Parmar, Neeraj Mathur, Prahlad Kishore Seth, Alok Dhawan (2006) DNA damage and mutagenicity induced by endosulfan and its metabolites. *Environmental and Molecular Mutagenesis* 47(9):682-692.
9. Alok Dhawan, Julian S. Taurozzi, **Alok K. Pandey**, Wenqian Shan, Sarah M. Miller, Syed A. Hashsham, Volodymyr V. Tarabara (2006) Stable colloidal dispersions of C60 fullerenes in water: Evidence for genotoxicity. *Environmental Science and Technology* 40, 7394-7401
10. Adekunle A. Bakare, **Alok K. Pandey**, Mahima Bajpayee, Devyani Bhargav, D. Kar Chowdhuri, K. P. Singh, R. C. Murthy, Devendra Parmar and Alok Dhawan (2007) DNA damage induced in human peripheral blood lymphocytes by industrial solid waste and municipal sludge leachates. *Environmental and Molecular Mutagenesis* 48(1):30-37
11. Sushila Patel, Mahima Bajpayee, **Alok Kumar Pandey**, Devendra Parmar and Alok Dhawan (2007) In vitro induction of cytotoxicity and DNA strand breaks in CHO cells exposed to Cypermethrin, Pendimethalin and Dichlorvos. *Toxicology in vitro* 21(8):1409-18

In a 2006 review article, Peter Møller, has compiled reference values for DNA damage based on Comet assay in human population in 24 countries (Mutation Research Reviews 612:84-104, 2006). The Indian values are based on the data of our studies.

4.2 PATENT

Alok Dhawan, Mahima Bajpayee, **Alok K. Pandey**, Kailash C. Khulbe, Devendra Parmar and Prahlad K. Seth (2004).

A process for the manufacture of twin window slides having low fluorescence and a twin window slide made thereby useful for comet assay.

Patent Appl. No. 1870/DEL/2004.

4.3 Manuscript under revision/ communicated

1. **Alok K. Pandey**, Mahima Bajpayee, Devendra Parmar, Rakesh Kumar, Subodh K. Rastogi, Neeraj Mathur, Paul Thorning, Marcel de Matas, Qun Shao, Diana Anderson and Alok Dhawan (2007) Multipronged evaluation of genotoxicity in Indian petrol-pump workers. Environmental and Molecular Mutagenesis (Under revision)
2. A.A. Bakare, Sushila Patel, **Alok Kumar Pandey**, Mahima Bajpayee, Devendra Parmar and Alok Dhawan (2008) DNA damage and Oxidative Stress Induced in Organs and Tissues of Mouse by Municipal Sludge Leachates. Environmental and Molecular Mutagenesis (Communicated).

4.4 Manuscripts in preparation

1. **Alok K. Pandey**, Chuck Gerba, Joan B. Rose and Syed A. Hashsham, Potential of quantum dots as surrogate for pathogens and its genotoxicity.
For Applied and Environmental Microbiology
2. R.D. Stedtfeld, **A. K. Pandey**, T.M Stedtfeld, J.M. Tiedje and S.A. Hashsham, QPCR of multiple virulence, potential indicator, and antibiotic resistance genes for identifying human fecal contamination in environmental waters.
For Environmental Science and Technology.
3. Aparajita Das, **Alok K. Pandey**, Anita Mukherjee and Alok Dhawan
Garcinia indica extract induces *in vivo* DNA damage in mice.
For Phytotherapy Research
4. **Alok K. Pandey**, Mahima Bajpayee, S. P. Trivedi, Devendra Parmar, Neeraj Mathur and Alok Dhawan
Evidence for *in vitro* genotoxicity of benzene and its metabolites.
For Toxicological Sciences
5. **Alok K. Pandey**, Mahima Bajpayee, S. P. Trivedi, Devendra Parmar, Neeraj Mathur and Alok Dhawan, Investigating genotoxicity of benzene and its metabolites in mice: three end-point study.
For Mutation Research, Fundamental and Molecular Mechanisms of Mutagenesis
6. Mahima Bajpayee, **Alok K. Pandey**, Devendra Parmar and Alok Dhawan
Thiamine ameliorates lead induced genotoxicity in mice.
For Toxicology

4.5 Conference proceedings/abstracts

1. **Alok Kumar Pandey**, Alok Dhawan, Subodh K. Rastogi, Devendra Parmar, Mahima Bajpayee and Prahlad K. Seth. High incidence of DNA damage in rural women exposed to biomass fuels using alkaline comet assay. Symposium of Environmental Genomics and Health Sciences and XXVII Annual Conference of Environmental Mutagen Society of India, Lucknow, March 19-21, 2002.
2. Mahima Bajpayee, Alok Dhawan, Devendra Parmar, **Alok Kumar Pandey**, Neeraj Mathur and P. K. Seth. Gender related differences in basal level of DNA damage in lymphocytes of a healthy Indian population using the alkaline comet assay. Symposium of Environmental Genomics and Health Sciences and XXVII Annual Conference of Environmental Mutagen Society of India, Lucknow, March 19-21, 2002.
3. Alok Dhawan, Mahima Bajpayee, **Alok Kumar Pandey**, Devendra Parmar and P. K. Seth. Application of the comet assay in assessment of DNA damage in the Indian population. Symposium of Environmental Genomics and Health Sciences and XXVII Annual Conference of Environmental Mutagen Society of India, Lucknow, March 19-21, 2002.
4. Mahima Bajpayee, Alok Dhawan, Devendra Parmar, **Alok Kumar Pandey**, Neeraj Mathur and P. K. Seth. Assessment of DNA damage in the lymphocytes of a healthy Indian population using the Alkaline Comet assay. 25th Anniversary Conference of UK Environmental Mutagen Society, Plymouth, UK, June 30-July 3, 2002.
5. Mahima Bajpayee, **Alok Kumar Pandey**, Devendra Parmar, and Alok Dhawan. Various Short-term tests for the assessment of mutagenic and carcinogenic potential of the environmental chemicals. Proceedings at the Short Term Training workshop on Environmental Toxicology and Health Impact Assessment, New Delhi, September 23-27, 2002.
6. Alok Dhawan, Mahima Bajpayee, **Alok Kumar Pandey**, Devendra Parmar and P. K. Seth Assessment of genomic DNA damage in a healthy Indian population using the alkaline comet assay. National Scientific Conference (Hindi), CDRI, Lucknow, November 14-15, 2002
7. Alok Dhawan, Mahima Bajpayee, **Alok Kumar Pandey**, Devendra Parmar and Prahlad K.Seth, Assessment of genomic DNA damage in a healthy Indian population using the alkaline Comet assay. XXI Annual Conference of Society of Toxicology India, Kolkata, December 3-5, 2002
8. Alok Dhawan, Mahima Bajpayee, **Alok Kumar Pandey**, Devendra Parmar, Neeraj Mathur, S.K. Rastogi and P. K. Seth. Human biomonitoring studies in a healthy Indian population using the alkaline comet assay. Workshop on Comet assay: Applications in Toxicology and molecular epidemiology, Lucknow, February 7-11, 2003.
9. **Alok Kumar Pandey**, Alok Dhawan, Mahima Bajpayee, Devendra Parmar, Subodh K. Rastogi, Neeraj Mathur and Prahlad K. Seth. DNA damage in lymphocytes of a healthy Indian population engaged professionally in physical work as measured by the Alkaline Comet assay. Symposium on arsenic contamination in ground water and its health effects and XXVIII Annual Conference of Environmental Mutagen Society of India, IICB, Kolkata, March 14-16, 2003.
10. Mahima Bajpayee, Alok Dhawan, Devendra Parmar, **Alok Kumar Pandey**, Neeraj Mathur and Prahlad K. Seth. Assessment of genotoxicity of endosulfan, its isomers and metabolites in the CHO cell line using the alkaline Comet assay. Symposium on arsenic contamination in ground water and its health effects and XXVIII Annual

Conference of Environmental Mutagen Society of India, IICB, Kolkata, March 14-16, 2003.

11. **Alok Kumar Pandey**, Alok Dhawan, Mahima Bajpayee, Devendra Parmar and Prahlad K. Seth. *In vitro, ex vivo and in vivo* genotoxicity of hydroquinone. International symposium on Molecular Toxicology and Environmental Health, Lucknow, November 5- 8, 2003.
13. Mahima Bajpayee, Alok Dhawan, **Alok Kumar Pandey**, Devendra Parmar, Neeraj Mathur and Prahlad K. Seth, Estrogen levels do not affect the comet assay responses in human lymphocytes: a study in healthy Indian females. International symposium on Molecular Toxicology and Environmental Health, Lucknow, November 5- 8, 2003.
15. Alok Dhawan, Mahima Bajpayee, **Alok K. Pandey**, Sushila Patel, Subodh K. Rastogi, Neeraj Mathur, Poornima Vajpayee, Rishi Shanker, D. Kar Chowdhuri and Devendra Parmar, Comet Assay: A Rosetta Stone in Genetic Toxicology. INDO-UK Workshop on "Applications of Biomarker to Protect Human and Environmental Health" under INDIA-UK Science Network (DST-Royal Society), Varanasi, September 1-5, 2004.
16. Alok Dhawan, Mahima Bajpayee, **Alok Kumar Pandey**, Devendra Parmar, Neeraj Mathur, S.K. Rastogi and P. K. Seth, Monitoring human genotoxicity using comet assay. Workshop on Current Techniques in Genetic Toxicology, Lucknow, December 1-15, 2004.
17. Alok Dhawan, Sushila Patel, Mahima Bajpayee, **Alok Kumar Pandey**, Devendra Parmar and Prahlad K. Seth, Multiple organ genotoxicity in mouse: A Comet assay perspective. Workshop on Current Techniques in Genetic Toxicology, Lucknow, December 1-15, 2004.
18. Sushila Patel, Mahima Bajpayee, **Alok Kumar Pandey**, Devendra Parmar Prahlad K. Seth and Alok Dhawan, Evidence for cypermethrin induced DNA damage in multiple mouse organs. International Symposium on Diet in Causation & Prevention of Cancer and XXXth Annual Conference of Environmental Mutagen Society of India, Lucknow. March 17-19, 2005.
19. **Alok Kumar Pandey**, Mahima Bajpayee, Devendra Parmar and Alok Dhawan, DNA damage and micronucleus induction by benzene and its metabolites using Comet assay and flow cytometry. XXIX All India Cell Biology Conference & Symposium on Gene to Genome: Environment & Chemical Interaction", Lucknow, 18-20 January 2006.
20. Mahima Bajpayee, **Alok Kumar Pandey**, Devendra Parmar, Prahlad K Seth and Alok Dhawan, Thiamine ameliorates lead induced genotoxicity *in vivo*. XXIX All India Cell Biology Conference & Symposium on Gene to Genome: Environment & Chemical Interaction", Lucknow, 18-20 January 2006.
21. Adekunle A. Bakare, **Alok Kumar Pandey**, Mahima Bajpayee, D. Kar Chowdhuri and Alok Dhawan, Genotoxicity evaluation of industrial solid waste leachates in human peripheral blood lymphocytes using the comet assay. XXIX All India Cell Biology Conference & Symposium on Gene to Genome: Environment & Chemical Interaction", Lucknow, 18-20 January 2006.
22. **Alok Kumar Pandey**, Mahima Bajpayee, Devendra Parmar and Alok Dhawan, DNA damage and micronucleus induction by benzene and its metabolites in mice. (Oral presentation) XXXI Annual Conference of Environmental Mutagen Society of India (EMSI) & International Symposium on Environmental Mutagenesis and Public Health, Hyderabad, February 23-25, 2006.
23. Adekunle A. Bakare, **Alok Kumar Pandey**, Mahima Bajpayee, Devendra Parmar, D. Kar Chowdhuri and Alok Dhawan, DNA damage induced by industrial solid waste

and municipal sludge leachates in human peripheral blood lymphocytes. (Oral presentation). XXXI Annual Conference of Environmental Mutagen Society of India (EMSI) & International Symposium on Environmental Mutagenesis and Public Health, Hyderabad, February 23-25, 2006

25. Alok Dhawan, Mahima Bajpayee, **Alok Kumar Pandey**, Devendra Parmar, Neeraj Mathur, S.K. Rastogi and P. K. Seth, Monitoring Human Genotoxicity in Indian Population using Comet Assay. XXXI Annual Conference of Environmental Mutagen Society of India (EMSI) & International Symposium on Environmental Mutagenesis and Public Health, Hyderabad, February 23-25, 2006.
27. **Alok K. Pandey**, Amanda B. Herzog, Joan B. Rose and Syed A. Hashsham, Potential of quantum dots as surrogates for microbial pathogens and evaluation of their genotoxicity. 107th General Meeting of American Society for Microbiology, Toronto, Ontario, Canada, May 21-25, 2007.
28. Amanda B. Herzog, **Alok K. Pandey**, Tomoyuki Shibata, Joan B. Rose and Syed A. Hashsham, Implications of detection limit of various methods for *bacillus anthracis* in computing risk to human health. 107th General Meeting of American Society for Microbiology, Toronto, Ontario, Canada, May 21-25, 2007.
29. Tiffany M. Stedfield, Robert D. Stedfield, **Alok K. Pandey**, Samuel W. Baushke, Sarah M. Miller, B. Chai, J. R. Cole, James M. Tiedje, Joan B. Rose and Syed A. Hashsham, Use of multiple genetic markers as indicators for fecal contamination in environmental water sources. 107th General Meeting of American Society for Microbiology, Toronto, Ontario, Canada, May 21-25, 2007.

4.6 Published Protocols

1. Alok Dhawan, Mahima Bajpayee, **Alok Kumar Pandey** and Devendra Parmar, *In vitro Genotoxicity Assessment In CHO Cells Using Single Cell Gel Electrophoresis / Comet Assay*. Proceedings of Workshop on Comet assay Applications in Toxicology and molecular epidemiology, Industrial Toxicology Research Centre, Lucknow, February 7-11, 2003.
2. Alok Dhawan, Mahima Bajpayee, **Alok Kumar Pandey**, Sushila Patel and Devendra Parmar. *The Single Cell Gel Electrophoresis / Comet Assay for Rapid Genotoxicity Assessment In Human Lymphocytes*. INDO-UK Workshop on "Applications of Biomarker to Protect Human and Environmental Health" under INDIA-UK Science Network (DST-Royal Society), Varanasi, India from September 1-5, 2004.
3. Alok Dhawan, Mahima Bajpayee, **Alok Kumar Pandey** and Devendra Parmar. *Micro comet assay using CHO cell line*. Proceedings of Workshop on Current Techniques in Genetic Toxicology, held at Industrial Toxicology Research Centre, Lucknow, from December 1-15, 2004.
4. Alok Dhawan, Mahima Bajpayee, **Alok Kumar Pandey**, Sushila Patel and Devendra Parmar. *Preparation of single cells from various organs (liver, spleen, brain, bone marrow, kidney) of mice for Comet assay*. Proceedings of Workshop on Current Techniques in Genetic Toxicology, held at Industrial Toxicology Research Centre, Lucknow, from December 1-15, 2004.
5. Alok Dhawan, Mahima Bajpayee, **Alok Kumar Pandey**, Sushila Patel and Devendra Parmar, *Flow micronucleus assay*. Proceedings of Workshop on Current Techniques in Genetic Toxicology, held at Industrial Toxicology Research Centre, Lucknow, from December 1-15, 2004.
6. **Alok Kumar Pandey** and Syed A Hashsham. Standard operating procedure for the evaluation of genotoxicity of quantum dots in human lymphocytes using single cell gel electrophoresis / comet assay P1Q3.SOPv1) March, 2007. Department of

5. TECHNIQUES KNOWN

- Cell culture – primary cells and cell lines
- Cell imaging and image analysis
- Flowcytometry – cell cycle, apoptosis, micronucleus
- DNA gel electrophoresis
- Chromosomal aberration assay - *in vitro*, *in vivo*
- Micronucleus assay - *in vitro*, *in vivo*
- Fluorescent *in situ* hybridization (FISH)
- Single cell gel electrophoresis (Comet Assay) – for DNA damage *in vitro*, *in vivo*, human biomonitoring.
- PCR and other molecular biology techniques
- Microarray

6. WEBSITE DEVELOPED

Provided intellectual input in the development of a website on comet assay www.comet.itrcindia.org (now www.cometassayindia.org). This website is the most comprehensive resource on this technique.

7. WORKSHOPS ORGANISED

- Associate Faculty, Workshop on Current Techniques in Genetic Toxicology, held at Industrial Toxicology Research Centre, Lucknow from December 1-15, 2004.
- Associate Faculty, Workshop on Comet Assay: Application in Toxicology and Molecular Epidemiology, held at Industrial Toxicology Research Centre, Lucknow from February 7-11, 2003.
- Arranged hands-on training program on alkaline comet assay during the “Indo-German Workshop on Prediction and Prevention of Impact of Chemicals on Environment and Human Health” held at Industrial Toxicology Research Centre, Lucknow from November 5-7, 2001.
- Imparted training in Comet assay and handling of cell culture, to trainees from BITS Pilani and other Universities and research institutes.

8. SEMINARS DELIVERED

- Micronucleus Assay in Genetic Toxicology
- Flow cytometry and its applications

9. INVITED LECTURES

Comet assay
Workshop on ‘In Silico Drug Designing’, The Bioinformatica Solutions, Lucknow, March 8-10, 2006.

10. MEMBERSHIPS OF SCIENTIFIC SOCIETIES

- Life member-Environmental Mutagen Society of India
- Life member- Indian Nanoscience Society
- Member- Indian Science Congress
- Member- Indian Society of Cell Biology (2006)
- Member- American Society for Microbiology

11. TRAINING/ WORKSHOPS

1. Indo-US Workshop on Advanced Flow Cytometry, Department of Biotechnology, Punjab University, Chandigarh, from 18th-22nd February 2002.
2. Short-Term Training Workshop on Environmental Toxicology and Health Impact Assessment, New Delhi, September 23-27, 2002.
3. "Workshop on EBV transformation of Human B-lymphocytes", Centre for Human Genetics, Bangalore, from 18th -20th December 2003.
4. Workshop on "Flow Cytometry: Applications in Drug Development", Central Drug Research Institute, Lucknow, from 8th - 10th January 2004.
5. "Training Workshop on Scientific Communication", Industrial Toxicology Research Centre, Lucknow, from 24th -25th July 2004.
6. Training Workshop on "Research Methodology & Statistical Methods in Biomedical Research", Industrial Toxicology Research Centre, Lucknow, from 26th -28th July 2004.
7. INDO-UK Workshop on "*Applications of Biomarker to Protect Human and Environmental Health*" under INDIA-UK Science Network (DST-Royal Society), Banaras Hindu University, Varanasi, India from September 1-5, 2004.
8. Workshop on Genomics:databases and Web Technologies", Biotech Park, Lucknow, from May 18-20 2006.