



CURRICULUM VITAE

Prof. (Ms.) KAVITA SHAH

**Professor of Environmental Sciences,
Department of Environment and
Sustainable Development (IESD)
Banaras Hindu University
&
Coordinator
Mahamana Malviya Research Centre for Ganga,
River Development and Water Resource Management
Banaras Hindu University**

POSITIONS HELD

**Director
Institute of Environment and
Sustainable Development (IESD)
Banaras Hindu University**

**Dean
Faculty of Environment and Sustainable Development
Banaras Hindu University**

**Head
Department of Environment and Sustainable Development
Banaras Hindu University**

**Coordinator
M.Sc. (Tech) Environmental Science and Technology
Banaras Hindu University**

**Coordinator
M.Sc. Bioinformatics, MMV
Banaras Hindu University**

MAILING ADDRESS

**Institute of Environment and Sustainable Development (IESD), Banaras Hindu University
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CURRICULUM-VITAE OF DR. KAVITA SHAH

PRESENT POSITION :

Professor of Environmental Sciences,
Department of Environment and
Sustainable Development (IESD)
Banaras Hindu University
&
Coordinator
Mahamana Malviya Research Centre for Ganga,
River Development and Water Resource Management
Banaras Hindu University

ADMINISTRATIVE/ACADEMIC POSITIONS HELD:

26.02.2016	Director
to	Institute of Environment and Sustainable Development
29.11.2018	Department of Environment and Sustainable Development Banaras Hindu University
14.08.2014	Former Dean
to	Faculty of Environment and Sustainable Development
13.08.2017	Banaras Hindu University
14.08.2014	Former Head
to	Department of Environment and Sustainable Development
13.08.2017	Banaras Hindu University
25.07.2012	Former Course Coordinator
to	Institute of Environment and Sustainable Development
24.07.2015	M.Sc. (Tech) Environmental Science and Technology Banaras Hindu University
2010	Former Coordinator
to	M.Sc. Bioinformatics, MMV
2011	Banaras Hindu University

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DATE OF BIRTH : 06 November 1968

EDUCATION :

Ph.D. (Biochemistry)	Banaras Hindu University	1995	Excellent Reports
B.Ed. (Science)	Banaras Hindu University	1992	I st Division with 1 st Rank
M.Sc. (Biochemistry)	Banaras Hindu University	1991	I st Division with 2 nd Rank
B.Sc. (Chemistry Hons.)	Banaras Hindu University	1989	I st Division with Distinction
Intermediate	Central Board of Secondary Education	1986	I st Division with Distinction
High School	Central Board of Secondary Education	1984	I st Division with Distinction

Additional Qualifications:

- Qualified **Graduate Aptitude Test in Engineering (GATE-93)** for Life Sciences in 1993 with a percentile score of 88.4.
- Qualified **TOEIC-98-99** (Test of English for International Communication) with a score of 900/1000 and a percentile of 98.0.

EMPLOYMENT:

Professor	Dept. of Environment and Sustainable Development Institute of Environment and Sustainable Development Banaras Hindu University	30.10.2013 to till date
Associate Professor	Environmental Science Dept. of Environment and Sustainable Development Institute of Environment and Sustainable Development Banaras Hindu University	30.10. 2010 to 30.10. 2013
Reader	Biochemistry, Dept. of Zoology, MMV, Banaras Hindu University	30.10.2007 to 30.10.2010
Lecturer	Biochemistry, Dept. of Zoology, MMV, Banaras Hindu University	21.11.2005 to 30.10.2007
Lecturer	Dept. of Biochemistry, School of Life Sciences North Eastern Hill University, Shillong	18.05.2003 to 21.11.2005
Pool Officer	Dept. of Biochemistry Faculty of Science Banaras Hindu University	30.10.2000 to 18.05.2003

POST -DOCTORAL STUDIES:

- National Institute of Health Sciences, Tokyo, Japan
- University of Geneva, Switzerland
- Banaras Hindu University, India

TEACHING EXPERIENCE: Postgraduate 22 years, Undergraduate 05 years

FIELD OF SPECIALIZATION:

Environmental Biochemistry, Environmental Biochemistry, Plant Science, Bioinformatics and Water and Health Management

PUBLISHED BOOKS:

- 2009** Molecular and Physiological Aspects of Toxicology, Ed. Kavita Shah, Pgs1-101, Rainbow Printers and Publishers, Varanasi, India **ISBN 81-85403-09-2**
- 2016** Green Campus, A report on environmental components at Banaras Hindu University, Ed. Kavita Shah, Pgs 1-101, **Banaras Hindu University ISBN 978-81-85305-71-4**

RESEARCH AND REVIEW PAPERS:	Total 88, International 61, National 27.
PH. D. THESIS GUIDED:	07
PH.D. PRESENTLY UNDER GUIDANCE:	07
M.SC. DISSERTATIONS SUPERVISED:	33
RESEARCH PROJECTS SUPERVISED:	09

CONFERENCES/SEMINARS/WORKSHOPS/REFRESHER COURSES ORGANISED:

07

RECOGNITION AND REPRESENTATION IN VARIOUS NATIONAL AND INTERNATIONAL BODIES

- Steering Committee member Inter Governmental Network on Science Advice, Asia Chapter.
- Empanelled for evaluation of DPRs for National Namami Gange Programme
- Expert Member District Ganga Samiti, Chandauli
- Expert Member for Ministry of Agriculture for appointments
- Member Canadian Society of Plant Physiologists, Canada
- Expert Member for NASI workshops for Women Scientists and Scientific Writing
- Visiting Professor - University of Southern California, USA
- University of Geneva, Switzerland

REPRESENTATION IN SOCIETY

- Member of Social Organization committed to upliftment of India the Bharat Vikas Parishad
- Member of Rotary International for benefit of mankind
- Member of Beti Bachao Beti Padhao Mission of Government
- Member of Swachha Bharat Mission of Government

AWARDS/FELLOWSHIPS:

- 2017** **The Royal Society Award** -2017 as Mentor for Common wealth Science Conference 2017, Singapore organized by the Royal Society and the National Research Foundation Singapore.

- 2016** **J C Bose Gold Medal Award** of the Indian Society of Plant Physiologists, India in the field of biotechnology and biochemistry on 09 December 2016.
- 2012** **“Women Scientist Award-2011”** of The Biotech Research Society, India in recognition of pioneering work in the field of Enzyme Technology and Biosensors on 21st November, 2012.
- 2009** **Outstanding Teacher Award** by the Rotary Club of Varanasi Greater on 05th September 2009
- 2003** **“Medhavi Chattra Puraskar”** by the Directorate of Higher Education, Allahabad
- 2002** **Swiss Government Fellowship** and worked with **Prof. Claude Penel** at the University of Geneva, Switzerland.
- 2000** **Senior Research Associateship** (Scientist's Pool), Council of Scientific and Industrial Research, New Delhi
- 2000** **Young Scientist Travel Fellowship Award** of International Union of Biochemistry and Molecular Biology
- 1999** **Research Associateship** of Council of Scientific and Industrial Research, New Delhi
- 1998** **STA FELLOWSHIP** of Japan Science and Technology, Ministry of Health Sciences, Tokyo, **JAPAN**
- 1996** **YOUNG SCIENTIST MERIT AWARD** of Indian Science Congress
- 1995** **Best Paper Presentation Award** at IVthConvention of Agricultural Biochemists and Symposium on Recent Developments in Biochemistry
- 1995** **UGC-GATE Senior Research Fellowship**
- 1993** **UGC-GATE Junior Research Fellowship**
- 1992** **BHU GOLD MEDAL** and cash prize

VISION AND IDEOLOGY:

I am true to my work and responsibilities vested with me. A firm believer of self-help is the best help I am inspired by the thought-process and societal upliftment carried by my fore- fathers Bharat Ratna Dr. BhagwanDasji of Sah family of Varanasi.

CONTRIBUTIONS TO INSTITUTION BUILDING:

- Established the Central Instrumentation Laboratory Facility at MahilaMahavidyalaya, BHU which is functional and that led to initiation of research activities therein for the first time.
- Worked at the Institute of Environment and Sustainable Development since its inception in 2011.
- Instrumental in designing and framing the course curricula for the Integrated M. Phil- Ph. D. program of IESD initiated in 2012-13.
- Contributed as Member of the building committee of the Institute and was instrumental in finalizing the blue-print of the First Green building of Banaras Hindu University.
- In the capacity of the Director, I was able to make the faculty appointments of the two Associate Professors at IESD.
- Vested with the responsibilities of the Director I was able to get the first energy efficient Green Building of Banaras Hindu University inaugurated by the Hon'ble Minister for Human Resource Development Sh. Prakash Javadekar on 06th October 2016.
- The shifting, housing of faculty, equipment and running of courses at the new Green building of IESD was successfully carried out under my guidance in July 2017.
- As Dean we as IESD proposed three new Departments that were visualized and presented in consultation with the faculty members in the Academic Council. This was taken positively by the house and sent for recommendations of the Standing Committee which was positive. The report is now submitted for Academic Council approval.
- As Head three new M. Sc. Courses were also proposed alongwith the three Departments which have now started at the new IESD premises.
- As Course-Coordinator of the M.Sc. (Tech) course I was able to hold the Board of Studies and revise the course-curriculum, procure new instruments for lab-work and motivate the teachers and students for good work.
- During my deanship each year one student of IESD has been representing India as ambassador under Youth Exchange Program.
- Established MoU with University of Nebraska in Lincoln, USA and IESD, BHU and with University of Kyoto & BHU for student exchange.

PATENTS/ PROCESSES/ PRODUCTS/ TECHNOLOGIES:

Concepts/Processes/Patents

- One **patent** in the name of Dr. Kavita Shah, Priyanka Singh and Banaras Hindu University, Ind. Pat. Appln. No. 478/DEL/2013 of 19.02.2013 in the name of BANARAS HINDU UNIVERSITY for development of enzyme-based dopamine biosensor.
- **Process** of purification of pectin-binding cationic peroxidases from rice have been standardized and reported for the first time. (Nahakpam, S., Rai, A., Singh, I., **ShahK.** 2011. Calcium-pectate binding peroxidase from rice roots: Purification, stability and kinetics for analytical applications. *Proceedings of National Academy of Sciences*

(India), 81, B, Part IV, pp381-388).

- **Developed a low cost bioreactor prototype for the removal of dyes and phenols from dyeing industries at Varanasi.** (under patent application)
- **Developed molecular imprint based diagnostic kit for detection of brain fever in infants** (under patent application)

Products and Technologies

- **Application of low doses of Tricyclazole for control of spot-blotch disease in barley.** (Ref: Shah K, Kumar M, Chand R, 2015. Effect of Tricyclazole on morphology, virulence and enzymatic alterations in pathogenic fungi *Bipolaris oryzae* for management of spot blotch disease in barley. *World Journal of Microbiology and Biotechnology*, 31 :23-35.
- Kumar, M., Chand, R. and Shah, K., 2016. Evidences for growth-promoting and fungicidal effects of low doses of Tricyclazole in barley. *Plant Physiology and Biochemistry*.doi: 10.1016/j.plaphy.2016.03.002)
- **Enzyme based biosensor for dopamine estimation.** Technology transfer under process. (Ref: Singh, P., Prakash, R. and **Shah, K**, 2012. Effect of organic solvents on peroxidases from rice and horseradish: prospects for enzyme based applications, *Talanta*. 97:204- 210.)
- **Nine Gene sequences deposited in GenBank (NCBI) Accession nos.**KF358695.2, KF358696.2, KF358697.1, KF358698.1, KF358699.1, KF358700.1, KF358701.1, KF358702.1, KF358703.2, For melanin biosynthesis genes in *Bipolaris oryzae* isolates (Ref. NCBI online).
- **3-D protein models developed and deposited in Protein Model Database (PMDb)** for enzyme proteins from rice with **PMDb IDs:** PM0078437,mPM0078438,PM0078894,PM0078819,PM0078897,PM0078821,PM0078820,PM0078818(Ref. Singh I. and **Shah K**. 2014. Evidences for structural basis of altered ascorbate peroxidase activity in cadmium stressed rice plants exposed to *jasmonate*.*Biomaterials*27:247-263.)
- **Development of multi-stress resistant tomato variety** is a novel product reported for the first time in literature (Refs. Shah K., Singh M., Rai AC. 2013. Effect of heat-shock induced oxidative stress is suppressed in BcZAT12 expressing drought tolerant tomato. *Phytochemistry* (U.K.) 95:109-117.
- Rai A.C., Singh M., **Shah K**. 2013. Engineering ZAT 12 gene encoding C2H2 like zinc finger transcription factor enhances heat and drought stress tolerance in *Solanum lycopersicon*(tomato) plants. *Phytochemistry* (U.K.) 85:44-50
- **Shah K**, Singh M, Rai AC. 2015. Bioactive compounds of tomato fruits from transgenic plants tolerant to drought. *LWT-Food Science and Technology*, 61(2):609-614).

CONSULTANCY:

- **Study on Impact of primary and secondary pollutants on crops around NTPC Dadri for a period of two years 2016-2018 for Rs 35 lakhs.**
- **Free consultancy for Rain Water harvesting and its implementation in**

buildings under construction or already constructed in and around Varanasi for past five years.

CITATIONS: As per Scopus-

	All	Since 2014
Citations	1953	1038
h-index	18	16
i10 index	32	24

One of the papers *Plant Sci. (U.K.). 161, 1135-1144, 2001* has been cited more than 700 times.

RESEARCH PROJECTS COMPLETED:

- 2013-2016** Joint-PI for CSIR funded project entitled, "Design, synthesis, characterization, optimization and evaluation of water compatible molecularly imprinted polymeric (MIP) sensors for selective protein capture by epitope imprinting" 3 yrs Rs 21.00 lakhs
- 2013-2016** PI for UGC -funded project entitled "Influence of nitric oxide and salicylic acid signaling on cadmium -stress-induced oxidative burst and protein profile in rice." 3 yrs Rs.6.38 lakhs
- 2013-2015** PI for DST funded project entitled "Immobilized rice-peroxidase biosensor for dopamine determination based on functionalized conducting polymers." 2 yrs, Rs.18 lakhs.
- 2009-2012** DST funded project for 3 yrs entitled "Effect of nitric oxide, salicylic acid and jasmonic acid on alleviation of metal induced oxidative burst in rice" awarded to Ms. Indra Singh under Women Scientist Scheme -A(WOS-A) for Rs.11.00 lakhs under guidance of Dr. Kavita Shah.
- 2010-2013** Joint-PI for Department of Biotechnology, Govt. of India, New Delhi funded project entitled, "Identification of and characterization of novel genetic and molecular mechanisms behind arsenic tolerance using *Brassica juncea* as model system"-3 yrs, Rs. 11.71 Lakhs.
- 2003-2007** Principal Investigator for Department of Science and Technology, Govt. of India, New Delhi funded project under Fast Track Proposal for Young Scientists. Entitled, "Purification, characterization and possible functions of isoperoxidases in cell wall of rice seedlings growing under heat injury and heavy metal stress. Rs 4.18 lakhs.

RESEARCH PROJECTS ONGOING:

- 2019-2020** Principal Investigator for PMMMNTT Project Entitled "To Experiment the Applicability of Innovative Student Centered Citizen Science (ScCs)

Approach In Secondary School Curriculum For Environmental Education" For 4.15 Lakhs

- 2018-2019** Joint-Principal Investigator for Design and Innovation Hub, Varanasi IIT - project, funded project entitled "Development of Ganga Gallery at BHU" (2018-19) for 8.40 lakhs.
- 2017-2018** Principal Investigator for DIC BHU, funded project entitled "Reactor Prototype for dye removal by using Magnetic nano-photocatalyst for small dyeing houses" (2017-2018) for 3 lakhs.
- 2016-2019** Principal Investigator for MoEF&CC funded project entitled, "To investigate the toxicology and biomagnification of nanoAg and nZVI present in consumer products and released after use in the Environment" 3 yrs from June 2016 onwards. Rs 32.0 lakhs.

RESEARCH PAPERS/BOOK CHAPTERS PUBLISHED:

International- 62 National- 27

- 2020** Gautam, A., Kumar, N., Dubey, A.K., Ranjan, R., Sahu, N., Behera, S.K., Shah, K., Tripathi, R.D. and Mallick, S. (2020). Sucrose plays key role in amelioration of arsenic induced phytotoxicity through modulating phosphate and silicon transporters, physiological and biochemical responses in C3 (*Oryza sativa* L.) and C4 (*Zea mays* L.). *Environmental and Experimental Botany*, Vol 171, p.103930. 10.1016/j.envexpbot.2019.103930. **IF: 3.712**
- 2019** Pathak, L. and Shah, K. (2019). Energy credit cards and incentives for energy growth in India. *Current Science*, 117(9), 1441. Doi:10.18520/cs/v117/i9/1441-1448. **IF: 0.756**
- 2019** Jayaswal, A., Mishra, H., Mishra, A. and Shah, K., 2019. Examining pharmacodynamic and pharmacokinetic properties of eleven analogues of saquinavir for HIV protease inhibition. *Archives of virology*, 164(4), pp.949-960. Doi : 10.1007/s00705-019-04153-9. **IF: 2.160**
- 2019** Singh P, Singh I and Shah K. 2019. Reduced activity of Nitrate reductase under heavy metal Cadmium stress rice: An in silico answer. *Front. Plant Sci.*, 9, 1948. Doi: 10.3389/fpls.2018.01948. **IF: 4.106**
- 2019** Pathak, L., Shah, K. 2019. Renewable energy resources, policies and gaps in BRICS countries and the global impact. *Frontiers in Energy.*, 13(3), pp. 506–521. Doi: 10.1007/s11708-018-0601-z. **IF: 1.701**
- 2018** Singh, M., Gupta, N., Singh, R., Shah, K. and Prasad, R. 2018. Epitope imprinting of iron binding protein of *Neisseria meningitidis* bacteria through multiple monomer imprinting approach. *Journal of Molecular Recognition* 31(7). Doi: 10.1002/jmr.2709. **IF: 1.919**
- 2018** Sharma, PK., Shah, K. 2018. Application of magnetic-nano photocatalyst for removal of Xenobiotic compounds. *International Journal of Environmental and Ecological Engineering*, 5(5).

- 2017** Pathak, L., and Shah K. 2017. Employing Microbes and Enzymes for Lignocellulosic Biomass Conversion to Energy. *Advances in Biotechnology & Microbiology*, 4(5). 555648. ISSN: 2474-7637. Doi: 10.19080/ AIBM.2017.04.555648. **IF: 0.734**
- 2017** Kumar, M., Dubey, RS, Singh PK, Mishra M & Shah, K. 2017. Alterations in barley proteome upon fungal infection and tricyclazole treatment. *Journal of Proteins and Proteomics*, 8 (1), 35-48. ISSN: 0975-8151. **IF: 1.0**
- 2017** Nandi, I., Srivastava, P.K. and Shah, K. 2017. Floodplain Mapping through Support Vector Machine and optical/Infrared Images from Lansat 8 OLI/TIRS sensors: Case study from Varanasi. *Water Resource Management* 31, 1157–1171. doi: 10.1007/s11269-017-1568-y. **IF: 2.987**
- 2016** Gupta, N., Shah, K., Singh, M. 2016. An epitope-imprinted piezoelectric diagnostic tool for *Neisseria meningitides* detection. *Journal of Molecular Recognition*. 29(12). 572–579. Doi: 10.1002/jmr.2557. **IF: 1.919**
- 2016** Nandi I, Tewari A, Shah K 2016. Evolving human dimensions and the need for continuous health assessment of Indian rivers. *Current Science*. 111 :263-271. doi:10.18520/cs/vl11li2/263-271 **IF: 0.756**
- 2016** Kumar, M., Chand, R., & Shah, K. 2016. Evidences for growth-promoting and fungicidal effects of low doses of tricyclazole in barley. *Plant Physiology and Biochemistry*, 103, 176-182. Doi.org/10.1016/j.plaphy.2016.03.002 **IF: 3.404**
- 2016** Shah, K. 2016. Environmental Biotechnology: Emergence and Acceptance for Sustainable Development. Research and Reviews: Journal of Botanical Sciences. RRJBS/ Plant Biotechnology and its applications-S3, 2016. (e-ISSN:2320-0189, p-ISSN: 2347-2308) **IF: 0.33**
- 2016** Arora N, Shah K, Pandey-Rai S 2016. Inhibition of imiquimod-induced psoriasis-like dermatitis in mice by herbal extracts from some Indian medicinal plants. *Protoplasma*, 253:1-13. **IF: 2.633**
- 2015** Singh I. and Shah K. 2015. Evidences for suppression of cadmium induced oxidative stress in presence of sulphosalicylic acid in rice seedlings. *Plant Growth Regulation*, 76, 99–110. <https://doi.org/10.1007/s10725-015-0023-4>. **IF: 2.473**
- 2015** Shah K, Singh M, Rai AC. 2015. Bioactive compounds of tomato fruits from transgenic plants tolerant to drought. *LWT-Food Science and Technology*, 61(2):609-614. Doi: 10.1016/j.lwt.2014.12.057. **IF: 3.714**
- 2015** Kumar M, Chand R, Dubey R S, Shah K . 2015. Effect of Tricyclazole on morphology, virulence and enzymatic alterations in pathogenic fungi *Bipolaris sorokiniana* for management of spot blotch disease in barley. *World Journal of Microbiology and Biotechnology*, 31 :23-35. <https://doi.org/10.1007/s11274-014-1756-3>. **IF: 2.652**
- 2014** Singh I. and Shah K. 2014. Exogenous application of methyl jasmonate lowers the effect of cadmium-induced oxidative injury in rice seedlings. *Phytochemistry* 108: 57-66. Doi: 10.1016/j.phytochem.2014.09.007. **IF: 2.905**

- 2014** Singh I. and Shah K. 2014. Evidences for structural basis of altered ascorbate peroxidase activity in cadmium stressed rice plants exposed to jasmonate. *Biometals*, 27: 247- 263. doi.org/10.1007/s10534-014-9705-z .**IF: 2.455**
- 2014** Chand R, Kumar M, Kushwaha C., Shah K, Joshi AK 2014. Role of Melanin in Release of Extracellular Enzymes and Selection of Aggressive Isolates of *Bipolaris sorokiniana* in Barley. *Current Microbiology* 69: 202-211. doi.org/10.1007/s00284-014-0559-y . **IF: 1.595**
- 2014** Shah K., Nandi I, Singh N., 2014. Towards water security through sustainable management of water resources. *Current Science*, 106, No.6, 25 March 2014. **IF: 0.0756**
- 2014** Shah K., Sharma PK, Nandi I, Singh N. 2014. Water sustainability: reforming water management in new global era of climate change. *Environmental Science and Pollution Research*, 21, 11603–11604. Doi 10.1007/s11356-014-2812-0. **IF: 2.914**
- 2014** Jayaswal A., Mishra A., Mishra H., Shah K 2014. Evaluation of novel Saquinavir analogs for resistance mutation compatibility and potential as an HIV-Protease inhibitor drug. *Bioinformation* 10(4): 227 -232. doi: 10.6026/97320630010227 IF: **0.62**
- 2014** Shah K, Gupta S, Mishra H, Sharma PK, Jayaswal A. 2014. Examining structural analogs of elvitegravir as potential inhibitors of HIV -1 integrase. *Archives of Virology*, 159:2069-2080. Doi 10.1007/s00705-014-2038-y. **IF: 2.261**
- 2014** Singh P and Shah K. 2014. Evidences for reduced metal-uptake and membrane injury upon application of nitric oxide donor in cadmium stressed rice seedlings. *Plant Physiology and Biochemistry*, 83: 180-184. **IF: 3.404**
- 2014** Rai, A.C., Singh, 1., Singh, M. and Shah, K. 2014. Expression of ZAT12 transcripts in transgenic tomato under various abiotic stresses and modeling of ZAT12 protein in silico. *Biometals*, Volume 27, Issue 6 (2014), Page 1231-1247. **IF: 2.455**
- 2013** Rai A.C., Singh M., Shah K. 2013. Engineering drought tolerant tomato plants over expressing Bc-ZAT12 gene encoding a C2H2 zinc finger transcription factor. *Phytochemistry* (U.K.) 85:44-50. Doi: 10.1016/j.phytochem.2012.09.007. **IF: 2.905**
- 2013** Shah K., Singh M., Rai A.C. 2013. Effect of heat-shock induced oxidative stress is suppressed in BcZAT12 expressing drought tolerant tomato. *Phytochemistry* (U.K.) 95:109-117. **IF: 2.905**
- 2013** Shah, K., Singh, P. and Nahakpam S. 2013. Effect of Cadmium uptake and heat stress on root ultra structure, membrane damage and antioxidative response in rice seedlings. *Journal of Plant Biochemistry and Biotechnology*. 22, 103–112 DOI 10.1007/s13562-012-0116-3. **IF:1.038**
- 2012** Rai, S.K., Arora, N., Pandey, N., Meena, R.P., Shah K., Rai, S.P. 2012. Nutraceutical

enriched vegetables: Molecular approaches for crop improvement. *International Journal of Pharma and Bio Sciences* 3(2):363-379. **IF: 7.446**

- 2012** Singh, I., Agrawal, P. and Shah, K. 2012. In search of function of hypothetical proteins encoded by genes of SA-JA pathways in *Oryza sativa* by *in silico* comparison and structural modeling. *Bioinformation* 8(1):001-005. **IF: 0.62**
- 2012** Singh, P., Prakash, R. and Shah, K, 2012. Effect of organic solvents on peroxidases from rice and horseradish: prospects for enzyme based applications, *Talanta*. 97:204- 210. **IF: 4.916**
- 2012** Shah, K. and Nahakpam S. 2012. Heat exposure alters the expression of SOD, POD, APX and CAT isozymes and mitigates low cadmium toxicity in seedlings of sensitive and tolerant rice cultivars. *Plant Physiology and Biochemistry* 57: 106-113. **IF: 3.404**
- 2012** Singh, I. and Shah, K. 2012. *In silico* study of interactions between rice proteins Enhanced disease susceptibility 1 and Phytoalexin deficient 4, a regulator of salicylic acid signaling pathway. *J. Biosciences* 37(3):563-571. **IF: 1.419**
- 2012** Arora N, Singh VK, Shah K, Rai S-P 2012. Qualitative and Quantitative analysis of 3D predicted arachidonate 15-lipoxygenase-B (15-LOX-2) from *Homo sapiens*. *Bioinformation*. 8(12): 555-561. **IF:0.62**
- 2012** Rai A.C., Singh M., Shah K. 2012. Effect of water withdrawal on ROS formation, proline accumulation and activities of SOD, CAT, APX, GR and POD enzymes in *ZAT12* transformed transgenic tomato plants. *Plant Physiology and Biochemistry* (Paris) 61: 108-114. doi: 10.1016/j.plaphy.2012.09.01 **IF: 3.404**
- 2011** Shah, K., Rai, A.C. and Singh,V. 2011. Phylogenetic relationships in ZnT superfamily of Zinc ion Transporters *in silico*. *Journal of Proteins and Proteomics* 2(2), July- December 2011, pp. 99-113. ISSN: 0975-8151. **IF 1.0**
- 2011** Nahakpam, S., Rai, A., Singh, Shah K. 2011. Calcium-pectate binding peroxidase from rice roots: Purification, stability and kinetics for analytical applications.' *Proceedings of National Academy of Sciences* (India), NASI, Allahabad. Vol. 81, B, Part IV, pp. 381-388. ISSN: 0369-8211. **IF: 0.396**
- 2011** Misra, N., Panda, P.K., Shah, K., Sukla, L.B. and Chaubey, P. 2011. Population coverage analysis of T-Cell epitopes of *Neisseria meningitidis* group B from Iron acquisition proteins for vaccine design. *Bioinformation* 6(7):255-261. **IF: 0.62**
- 2010** Nahakpam, S. and Shah, K. 2010. Expression of key antioxidant enzymes under combined effect of heat and cadmium toxicity in growing rice seedlings. *Plant Growth and Regulation* 63:23-35. DOI: 10.1007/s10725-010-9508-3 **IF: 2.473**
- 2010** Shah, K., Chaubey, P. and Mishra, N. 2010. Bioinformatics approach to the screening and modeling of putative T cell epitopes from Por B protein of *N meningitidis* as vaccine constructs. *Indian Journal of Biotechnology* 9:351-359. ISSN: 0972-5849.**IF: 0.510**
- 2010** Mishra, N., Chaubey, P., Mishra, A. and Shah, K. 2010. Structural Simulation ofMHC- peptide Interactions using T-cell epitopes in Iron-Acquisition Protein of *N*

meningitidis for Vaccine Design. *Journal of Proteins and Proteomics* 1 :53-63. ISSN: 0975-8151. **IF 1.0**

- 2008** Sudha, J. and Shah, K. 2008. Comparative studies on inhibitors of HIV protease-a target for drug design. *In Silico Biology* 8:427-447. www.bioinfo.de.isb/2008/08/0033/main.html **IF: 1.20**
- 2008** Nahakpam, S., Singh, P. and Shah, K. 2008. Effect of Calcium on Immobilization of Rice (*Oryza sativa* L.) Peroxidase for Bioassays in Sodium Alginate and Agarose Gel. *Biotechnology and Bioprocess Engineering* 13:632-638. **IF: 1.438**
- 2007** Shah, K. and Nongkynrih, J. 2007. Metal Hyperaccumulators and Bioremediation. *Biologia Plantarum*. 51(4):618-634. (Review) **IF: 1.384**
- 2004** Shah, K., Penel, C., Gagnon, X. and Dunand, C. 2004. Purification and identification of a Ca²⁺-pectate peroxidase from *Arabidopsis* leaves. *Phytochemistry* 65:307-312. **IF: 2.905**
- 2001** Shah, K, Kumar, R.G., Verma, S. and Dubey, R.S. 2001. Effect of cadmium on lipid peroxidation, superoxide anion and activities of antioxidant enzymes in growing rice seedlings. *Plant Science* 161:1135-1144. **IF: 3.785**
- 2001** K Shah, RS Dubey 2001. Cadmium induced suppression in the activities of key metabolic enzymes and synthesis of stress specific proteins in growing rice (*Oryza sativa* L.) seedlings. *Biochemical Society Transactions* 28 (5), A468-A468 **IF: 4.291**
- 2000** Kumar, R.G., Shah, K. and Dubey, R.S. 2000. Salinity induced behavioural changes in malate dehydrogenase and glutamate dehydrogenase activities in rice seedlings of differing salt tolerance. *Plant Science* 156:23-34. **IF: 3.362**
- 1999** Shah, K., Sato, K., Kubota, H., Tatsumi, K. and Maitani, T. 1999. Heavy metal caused changes in pigment levels and synthesis of phytochelatin analogs in *Rubiatintorum* root cultures. In: *Proceedings of 6th Annual Meeting of Society of Food Chemistry*, Nagoya, Japan. pp. 26
- 1998** Shah, K. and Dubey, R.S. 1998. A 18kDa cadmium inducible protein complex : its isolation and characterization from rice (*Oryza sativa* L.) seedlings. *Journal of Plant Physiology* 152:448-454. **IF: 2.825**
- 1998** Shah, K. and Dubey, R.S. 1998. Cadmium elevates the protein level and alters the activity of proteolytic enzymes in germinating rice seeds. *Acta Physiologiae Plantarum* 20:189-196. **IF: 1.608**
- 1998** Shah, K. and Dubey, R.S. 1998. Cadmium suppresses the phosphate level and inhibits the activity of phosphorolytic enzymes in growing rice seedlings. *Journal of Agronomy and Crop Science* 180:223-231. **IF: 2.96**
- 1998** Shah, K. 1998. Polyacrylamide gel electrophoresis a tool for metal stress induced enzymatic changes in rice (*Oryza sativa* L.). In: *Proceedings of the 18th Symposium on Capillary Electrophoresis*, Fukuoka, Japan. 73-74
- 1997** Shah, K. and Dubey, R.S. 1997. Effect of cadmium on proteins, amino acids and protease, aminopeptidase and carboxypeptidase in rice seedlings. *Plant*

Physiology and Biochemistry-New Delhi (India), 24 (2) ,89-95. 24 (2):89-95. ISSN: 0019-5502. **IF: 2.928**

- 1997** Richharia, A., Shah, K. and Dubey, R.S. 1997. NR purification from rice seeds, its characterisation and the effects of *in situ* and *in vitro* NaCl salinity. *Journal of Plant Physiology* 151:316-322. **IF: 2.825**
- 1997** Shah, K. and Dubey, R.S. 1997. Cadmium alters phosphate level and suppresses activity of phosphorolytic enzymes in germinating rice seeds. *Journal of Agronomy and Crop Science* 179:35-45. **IF: 2.96**
- 1997** Shah, K. and Dubey, R.S. 1997. Effect of cadmium on proline accumulation and RNase activity in rice seedlings: Role of proline as a possible enzyme protectant. *Biologia Plantarum* 40: 121-130. Doi:10.1023/A:1000956803911 **IF: 1.665**
- 1997** Shah, K. 1997. Cadmium suppresses proteolytic activity and elevates protein level in rice (*Oryza sativa* L.) plants. In *FASEB JOURNAL*, vol. 11, no. 9, pp. A1220-AI220. 9650, USA: FEDERATION AMER SOC EXP BIOL. **IF 5.391**
- 1997** Shah, K. 1997. Radioisotopes gaining ground in research and industry. *The Botanica* (India),47:96-98.
- 1996** Shah, K. and Dubey, R.S. 1996. Influence of cadmium on proteolytic, nucleolytic and phosphorolytic events in growing rice plants. *Journal of Scientific Research*. 46: 197- 198. **IF: 0.351**
- 1995** Shah, K. and Dubey, R.S. 1995. Cadmium induced changes on germination, RNA level and ribonuclease activity in rice seeds. *Plant Physiology and Biochemistry* (India). 22:101-107. ISSN: 0019-5502.**IF: 2.756**
- 1995** Shah, K. and Dubey, R.S. 1995. Phytochelatin. *The Botanica* (India). 45:26-27.
- 1995** Shah, K. and Dubey, R.S. 1995. Effect of cadmium on RNA level as well as activity and molecular forms of ribonuclease in growing rice seedlings. *Plant Physiology and Biochemistry* 33:577-584. **IF: 3.404**

BOOK CHAPTERS:

- 2020** Shah, K., Nandi, I., and Gupta, S. 2020. Exploring Rivers, Water Pollution, Socio-economic connect and Governance in developing countries. In: Kate Svyatets and Monalisa Chatterjee (eds), In *Environment Issues and Policy: Exploring Past, Present and Future Socioecological Relations*. pp 75-98, Cognella Academic Publishing, USA.
- 2019** Pathak, L., Shah, K. 2019. Potential biomass for energy generation and future prospects in India. *Advances in Plant Physiology*. Ed. Hemantranjan, A. Scientific Publishers (India) Jodhpur, Volume. 18, June 2019, pp 337-354.
- 2018** Shah, K., Chaturvedi, V., and Gupta S. 2018. Climate change and abiotic stress induced oxidative burst in rice. In: Mirza Hasanuzzaman, MNV Prasad, Masayuki Fujita (eds) *Cadmium toxicity and tolerance in plants from physiology to remediation*, pp 505-535, Woodhead Publishing Elsevier UK.
- 2018** Shah, K., Nahakpam, S., Chaturvedi, V., and Singh, P. 2018. Cadmium induced

anatomical abnormalities in plants. In: Mirza Hasanuzzaman, Masayuki Fujita, Jiban Krishna Biswas and Kamrun Nahar (eds) *Advances in Rice Research for Abiotic Stress Tolerance*, pp 111-139, Academic Press, London, UK.

- 2018** Shah, K., Pathak, L. 2018. Transgenic Energy Plants for Phytoremediation of Toxic Metals and Metalloids. In: MNV Prasad (ed) *Transgenic. plant technology for remediation of toxic meals and metalloids*, pp 319-340, 2018, Academic Press, London, UK.
- 2018** Kumar M, Chand R., Shah, K. Mycotoxins and pesticides: toxicity and applications in food and feed. Eds. J. K. Patra et al., *Microbial Biotechnology Volume 2*, 2018 pp 207-252, Springer Nature, Singapore.
- 2017** Shah, K. 2017. Metal accumulators and Bioremediation. Vol. 13, No.4, *Plants and pollution*, ENVIS -NBRI Newsletter.
- 2016** Nandi, I., Shah, K. and Srivastava, P.K. Floodplain Mapping using support Vector Machine and Optical/Near Infrared Satellite Images. 2016. In: Ajai Singh et al (eds) *Water and Sustainable Development*, first edition, 2016, New Delhi Publishers, New Delhi, pp 367-373.
- 2016** Agrawal S, Kumar M, Singh P, Shah K, 2016. Drought, Agricultural Practices and Private Sector Lending for Sustainability in India Vol.17. *Advances In Plant Physiology*. Ed. Hemantranjan, A. Scientific Publishers (India) Jodhpur ISSN: 0972-9917; ISBN:978-81-7233., pp 46-70.
- 2016** Shah K, 2016. Preparedness, Making Disasters Relevant: Voices and experiences from Varanasi, Seeds Asia, Japan
- 2015** Kumar M., Shah K.,Chand R. 2015. Special supplement 3- Role of Melanin in the Biology of spot blotch pathogen of Barley and its management. In: Hemantranjan, A. (ed) *Physiological Efficiency For Crop Improvement*, Vol. 15, Scientific Publishers (India), Jodhpur, pp 49-76. ISBN 978-81-7233-937-1
- 2015** Shah K and Singh I. 2015. Unravelling *in silico* the structure and function of hypothetical proteins from rice involved in signaling cross talk between salicylate and jasmonate pathways. In:*Biotechnological Applications for Environmental Protection* Eds. Abhilash P. C. and Singh H. B. Springer-Verlag Berlin Heidelberg. In Press.
- 2015** Singh P and Shah K 2015. An update on effects of nitric oxide under abiotic stresses in higher plants. Vol. 15, *Advances In Plant Physiology*. Ed. Hemantranjan, A. Scientific Publishers (India) Jodhpur, ISSN: 0972-9917; ISBN:978-81-7233.Pgs 283-306.
- 2015** Shah K, Kumar M, Chand R, 2015. Role of Melanin in the Biology of Spot Blotch Pathogen of Barley and its Management. Vol. 15, *Advances In Plant Physiology*. Ed. Hemantranjan, A. Scientific Publishers (India) Jodhpur ISSN: 0972-9917; ISBN:978- 81-7233. pp 49-76
- 2014** Kumar M., Shah K., Chand R. 2014. Special supplement 3- Role of Melanin in the Biology of spot blotch pathogen of Barley and its management. In: Hemantranjan, A. (ed) *Advances in Plant Physiology*, Vol. 15, Scientific Publishers (India), Jodhpur, pp 49-76. ISBN 978-81-7233-936-4

- 2012** Rai, A.C., Singh, M. and Shah, K. 2012. Environmental Stresses and Transgenics: Role of ZFP (ZAT) Gene in Multiple Stress Tolerance in Plants. In: *Advances in Plant Physiology. (Vol XIII)* Ed. Hemantranjan, A. Scientific Publishers (India) Jodhpur, pp. 197-232. ISBN: 978-81-7233-798-8
- 2012** Singh, I. and Shah, K. 2012. Crosstalk between genes in salicylic acid and jasmonic acid mediated signaling in plants exposed to environmental stresses. In :*Advances in Plant Physiology. (Vol XIII)* Ed. Hemantranjan, A. Scientific Publishers (India) Jodhpur, pp. 250-278. ISBN: 978-81-7233-798-8.
- 2011** Shah, K., Raghuvanshi, R. and Singh, I. 2011. Phosphate transporters in Symbiotic ArbuscularEndomycorrhizal Association-A Bioinformatics Approach. In : *Advances in Life Sciences* Ed. Sinha, R.P., Sharma, N.K. and Rai, A.K. IK Publishers, New Delhi, India, pp. 93-115. ISBN: 93-81141-04-5.
- 2011** Shah, K. 2011. Cadmium Metal Detoxification and Hyperaccumulators.- In : Sherameti, I. and Varma, A. (eds.) *Detoxification of Heavy Metals, Soil Biology* 30, Springer- Verlag Berlin Heidelberg, pp. 181-230
- 2010** Shah, K. and Nahakpam, S. 2010. Heat stress and cadmium toxicity in higher plants- an overview. In:*Advances in Plant Physiology. (Vol XII)* Ed. Hemantranjan, A; Scientific Publishers (India) Jodhpur, pp. 243-280
- 2009** Nahakpam, S. and Shah, K. 2009. Peroxidase obtained from rice seedlings growing under Cd stress exhibit high affinity for calcium ions. In: *Molecular and Physiological Aspects of Toxicology* Ed. Shah, K. Rainbow Publishers, India, Varanasi, pp. 82-87. ISBN 81-85403-09-2.
- 2008** Raghuvanshi, R. and Shah, K. 2008. Mycorrhizal Technology in Sustainable Development of Stressed Ecosystems. In: *Advances in Plant Physiology (Vol. 10)* Ed. Hemantranjan, A., Scientific Publishers (India) Jodhpur, pp. 441-453. ISSN: 0972-9917
- 2007** Shah, K. and Appenroth, KJ. 2007. Heavy Metal Stress and Activation of MAP Kinases in rice. In: *Applications of Biotechnology*, Eds. Tripathi, B.N., Shekhawat, G.S., Sharma, V. AavishkarPublisers, Distributors, Jaipur 302 003 (Raj.) India, pp. 149-166. ISBN: 978-81-7910-215-2.
- 2006** Appenroth, KJ. and Shah, K. 2006. Plants for heavy metal toxicity assessment I. Duckweeds (*Lemnaceae*). In: *Advances in Plant Physiology (Vol. 9)* Ed. Hemantranjan, A., Scientific Publishers (India) Jodhpur, pp. 193-204.
- 2005** Shah, K. and Dubey, R.S. 2005. Plant Metabolism under Temperature Stress.In: *Physiology of Abiotic Stress in Plants*. Eds. Dwivedi, P. and Dwivedi, R.S. Agrobios (India) Publishers, Jodhpur, pp 243-274. ISBN: 81-7754-247-8.
- 2005** Shah, K. 2005. Plant peroxidases -a brief note on response to metal pollutants. In: *Advances in Plant Physiology (Molecular Plant Physiology and Biology, Vol. 8)* Ed. Hemantranjan, A., Scientific Publishers (India) Jodhpur, pp. 113-122
- 2003** Shah, K. and Dubey, R.S. 2003. Environmental stresses and their impact on nitrogen assimilation in higher plants. In: *Advances in Plant Physiology (Vol. 5)*

Ed. Hemantranjan, A., Scientific Publishers (India) Jodhpur, pp. 397-431.

- 2002** Shah K., Dunand, C., von Tobel, L. and Penel, C. 2002. Purification and characterization of a pectin binding cationic peroxidase from *Arabidopsis* leaves. In: Plant Peroxidases: Biochemistry and Physiology, Eds. Acosta, M., Rodriguez-Lopez, J.N. and Pedreno, M.A. University of Murcia and University of Coruna, Spain, pp. 200- 203

EDITORIALS:

Reviewer and Editor or Associate Editor of several International journals including Plant Science, Plant Physiology and Biochemistry, Talanta, Journal of Protein and Proteomics, Austin journal of Biotechnology, etc.

INVITED LECTURES/ PRESIDENTIAL ADDRESS/KEYNOTE/ VALEDICTORY/SESSION CHAIR:

- 2019** Keynote Lecture, “Personalized Nutrition: Role of media and Science Advice” INGSA ASIA Grassroots Science Advice workshop on Nutrition and Health, Department of Biotechnology, MNNIT, Allahabad, Dec. 17th -18th, 2019
- 2019** Session chair, INGSA ASIA Grassroots Science Advice workshop on Nutrition and Health, Department of Biotechnology, MNNIT, Allahabad, Dec. 17th -18th, 2019.
- 2019** Guest Speaker, “Afforestation and Rejuvenation of Natural springs” seminar during Destination North east-2019. Organized by North Eastern Council. Ministry of DoNER, Govt. of India and Indian Chamber of Commerce, Nov. 24-25, 2019.
- 2019** Keynote lecture “Women in Environment”, 17th Refresher course on Women and Gender Sensitization Studies, UGC-Human Resource Development Center, BHU, Varanasi, Sept. 23- Oct. 05, 2019.
- 2019** Session chair, INGSA ASIA Capacity Building Workshop on Science Advice in Biodiversity and it’s Research Management, Jakarta, Indonesia, hosted by the International Network for Government Science Advice (INGSA)Asia, Indonesian Young Academy of Sciences (ALMI), Indonesian Society of Microbial Ecology(InSME) and International University Liaison Indonesia (IULI), Sept. 23rd – 24th, 2019
- 2019** Keynote Lecture “Environment and Sustainable Development in Higher Education”. Faculty Induction Program, Faculty of Education, Sept. 2, 2019- Oct 01, 2019.
- 2019** Keynote Lecture, “Heavy metal Contamination in the environment: Issues, Challenges and Remedy”, National conference on pollution control and sustainable environment, Amity University, Lucknow, Sept. 3-4, 2019.
- 2019** Keynote Lecture “Effect of polluted Panchtatva on Health”. National Seminar on Environment and Health, Department of Environment Sciences, CCS University, Meerut, April 8, 2019.
- 2019** Keynote address in National Conference on emerging trends inEnvironment

Law and Policy in India.Organised by Faculty of Law, BHU, Varanasi, 30 March, 2019

- 2017** Inaugural address. Mid-term Seminar and workshop of participatory community- based disaster-risk reduction approaches in Varanasi, Seeds Asia, MOF A, Govt. of Japan, IESD, BHU, Varanasi, 24 January 2017.
- 2017** Inaugural address. Stress tolerance in plants: challenges in selection of appropriate research methodologies. Self-financed short-term course on research methodologies, data analysis and stress tolerance in plants, Department of Biotechnology, Motilal Nehru National Institute of Technology, Allahabad, UP, 21 January 2017.
- 2016** Climate resilient agriculture and plant adaptation to stresses. National conference on Strategies in Plant Physiological Research for Meeting Challenges in Agriculture33Department of Plant Physiology, Institute of Agricultural Sciences, BHU, Varanasi, 3-5 March 2016.
- 2016** Agricultural biotechnology: An addressal to abiotic stresses, climate change and plant adaptability for food security, International conference on Translational Biotechnology "Biosangam 2016" Motilal Nehru National Institute of Technology, Allahabad, INDIA, February 4-6,2016.
- 2016** Fitting Nature's Original to Intended Purposes for a Sustainable Environment. International conference on Translational Biotechnology "Biosangam 2016"Motilal Nehru National Institute of Technology, Allahabad INDIA, February 4-6,2016.
- 2015** Threats to Dolphin. Gangetic Dolphin Conservation Education Programme Refresher cum Orientation Meet Centre for Environment Education, VESS India and IESD, BHU, 16 December 2015.
- 2015** Water and Sustainability. Summer school cum workshop on Water and Wastewater Treatment, Malviya Centre for Innovation Incubation and Entrepreneurship (MCIIE), IIT, BHU, 22 May-05 June 2015.
- 2015** Need for a shift in the development process for sustainable management of riverine ecosystem of river Ganga at Varanasi. National seminar on Technologies and Management of Smart cities: Issues, Challenges and opportunities School of Management studies, Uttar Pradesh Rajarshi Tandon Open University, Allahabad 3 May 2015.
- 2015** Is Ganga really polluted: Myth and Facts? seminar on Impact ofIndustrial effluent on the self purification capacity of River Ganga Department of Chemistry, Harishchandra P.G. College, Varanasi, U.P., 29-30 March 2015.
- 2015** Understanding enigmas in adaptation biology using bioinformatics tools. National conference on Biotechnology and Human welfare: New vistas, Department of Biotechnology, VBS, Purvanchal University, Jaunpur, U.P. 21-22 March 2015.
- 2012** Scope of Bioinformatics and its applications. Workshop on Applications of Biotechnology and Related Tools, Department of Biotechnology, Agrasen P. G. College, Varanasi, 07 April 2012.

- 2012** Scope and Applications of Bioinformatics. Training and Refresher Course, Indian Institute of Vegetable Research, Varanasi, March 06, 2012.
- 2012** Salicylic acid signaling in plants under stress: environmental issue for sustainable crop management. 99th Indian Science Congress, KIIT University, Bhubaneswar, January 3-7, 2012
- 2011** Bioinformatics for Entrepreneurs. Technology Incubation Cell, IT, BHU, Institute of Technology, BHU, October 13, 2011.
- 2011** Application of Biotechnology tools for testing seed quality and GM crops. National Training on Seed Testing National Seed Research and Training Centre, Ministry of Agriculture, Govt. of India, Varanasi, September 26-30, 2011.
- 2011** Understanding Biochemical and Molecular Biology Techniques in Seed Science. National Training on Seed Testing, National Seed Research and Training Centre, Ministry of Agriculture, Govt. of India, Varanasi, September 26-30, 2011.
- 2010** GM Seeds from India: Laboratory techniques to assess transgenes in seeds. National Training on Seed Quality Regulation and Seed Testing, National Seed Research and Training Centre, Ministry of Agriculture, Govt. of India, Varanasi, July 26-30, 2010.
- 2010** HIV Protease Inhibitor as Target for Drug Design, BIT'S Inaugurate Symposium on Enzymes and Biocatalysis (SEB 2010), Shanghai, CHINA, April 22-24, 2010.
- 2010** Plant bioinformatics and study of seeds. National Training on Integrated Seed Improvement National Seed Research and Training Centre, Ministry of Agriculture, Govt. of India, Varanasi, February 01-10, 2010.
- 2009** Plant bioinformatics: a cross-talk between wet-lab and computational tools. Winter school, Indian Institute of Vegetable Research, Varanasi, December 01-17, 2009.
- 2008** Metabolomics: From Biochemistry to System Biology. National Seminar and Workshop on Metabolic Networks and Drug Designing, Mahila Mahavidyalaya, Banaras Hindu University, Varanasi, November 28-30, 2008.
- 2008** Evaluation of Seed Quality: Biochemical and Biotechnological Techniques. National Training on Seed Quality Regulation and Seed Health Testing and Varietal Identification through in vitro techniques, National Seed Research and Training Centre, Ministry of Agriculture, Govt. of India, Varanasi, February 18-22, 2008
- 2007** Tools and Biotechnological Approaches on Seed Quality Evaluation. National Training on Seed Quality Control and Seed Testing National Seed Research and Training Centre, Ministry of Agriculture, Govt. of India, Varanasi March 19-23, 2007.

RESEARCH PAPERS PRESENTED (ABROAD & WITHIN INDIA):

International:

- 2017** The Royal Society Award (Travel grant), Shah K. The Common Wealth Science Conference 2017, Organized by the Royal Society in partnership with the National Research Foundation Singapore (NRF) Singapore 2017, June 13-16,2017
- 2017** INGSA and Royal Society Joint Science Advisory Workshop, Shah K.South East Asia Government Science Advice Workshop Organized in partnership with the Office of the Science Advisor to the Prime Minister of Malaysia, the Royal Society of London and the International Network for Government Science Advice (INGSA), Johor, Malaysia, June 11- 12,2017
- 2016** Putting plant residue in use for dopamine estimation in human biofluids: a Green technology, Shah K. 3rd International Conference on Past and Present Research Systems of Green Chemistry Las Vegas, USA, September 19-21, 2016
- 2016** Integrating exogenous application of sodium nitro-prusside for cadmium toxicity mitigation and sustainable agriculture in rice (Best oral presentation). Singh P, Shah K.International conference on Translational Biotechnology "Biosangam 2016" Motilal Nehru National Institute of Technology, Allahabad, INDIA, February 4-6, 2016
- 2016** Agricultural biotechnology: An addressal to abiotic stresses, climate change and plant adaptability for food security, Shah K. International conference on Translational Biotechnology "Biosangam 2016" Motilal Nehru National Institute of Technology, Allahabad INDIA, February 4-6, 2016
- 2016** Fitting Nature's Original to Intended Purposes for a Sustainable Environment, Shah K. International conference on Translational Biotechnology "Biosangam 2016"Motilal Nehru National Institute of Technology, Allahabad, INDIA, February 4-6,2016
- 2010** HIV Protease Inhibitor as Target for Drug Design, Shah K. BIT'S Inaugrate Symposium on Enzymes and Biocatalysis (SEB 2010)Shanghai,CHINA, April22-24,2010
- 2010** Changing patterns of enzyme ascorbate peroxidase and glutathione reductase isoforms under combined effect of cadmium and heat stress, Nahakpam S. and Shah K. International Conference on Role of Biomolecules in Food Security and Health Improvement and XI Silver Jubilee Convention of Indian Society of Agricultural Biochemists Department of Biochemistry, Faculty of Science, Banaras Hindu University, Varanasi, INDIA, February17-20, 2010
- 2005** Histochemical localization of guaiacol peroxidase and cadmium in roots of susceptible and tolerant rice cultivars from North-East India, Nahakpam S and Shah K. VII International Peroxidase SymposiumFukuoka,JAPAN, September 11-15, 2005
- 2002** Purification and characterization of a pectin binding cationic peroxidase from Arabidopsis leaves.Shah K., Dunand C., von Tobel L. and Penel C.VI International Plant Peroxidase Symposium Murcia, SPAIN, July 3-7, 2002
- 2000** Cadmium induced suppression in the activities of key metabolic enzymes and induction of stress-specific proteins in growing rice (*Oryza sativa* L.) plants."Young Scientist Award Forum", Shah, K.andDubey R.S.18th International

Union of Biochemistry and Molecular Biology Congress Birmingham, UNITED KINGDOM, July 13-20, 2000

- 1999** Heavy metal caused changes in pigment levels and synthesis of phytochelatin analogs in *Rubiatinctorum* root cultures, Shah K., Sato K, Kubota H., Tatsumi K. and Maitani T. 6th Annual Meeting of Society of Food Chemistry Nagoya, JAPAN, March 3-4, 1999
- 1999** Induction of iso-PC(Gln) catalyzed by a unique gamma-glutamyl transpeptidase and its utilization for PC synthesis in cadmium treated root cultures of *Armoracia rusticana*. Shah, K. Kubota, H., Yamada, T. and Maitani, T. Plant Biology Canada'99 Saskatoon, CANADA, January 19-23, 1999
- 1998** Polyacrylamide gel electrophoresis a tool for metal stress induced enzymatic changes in rice (*Oryza sativa L.*), Shah, K. 18th Symposium on Capillary Electrophoresis Fukuoka, JAPAN, December 18-21, 1998
- 1996** Uptake and distribution of cadmium in growing rice plants and isolation of a 18kDa cadmium inducible protein complex. Shah, K and Dubey, R.S. 2nd International Crop Science Congress New Delhi, INDIA, November 18-21, 1996

National:

- 2019** Gupta, S. and Shah, K. (2019) "Understanding the impact of pollutants from a coal fired thermal power plant on the ground water resources and rice crops in the Village nearby". National conference on pollution control and sustainable environment, Amity University, Lucknow, Sept. 3-4, 2019.- Received best paper award.
- 2019** Pathak, L. and Shah, K. (2019) "Restoration of Urban wastelands through Energy crops plantation and bioenergy generation in India". National workshop on Bioelectrochemical Technologies for Waste to Energy Conversion and resource recovery (BETWEC-2019), Pondicherry University, Puducherry, July 22-24, 2019.
- 2019** Pokharia, C. and Shah, K. (2019). and Shah, K. (2019) "Development of Phage based Biosensor for Detection of Bacterial Pathogens in Water". National workshop on Bioelectrochemical Technologies for Waste to Energy Conversion and resource recovery (BETWEC-2019), Pondicherry University, Puducherry, July 22-24, 2019.
- 2019** Chaturvedi V. and Shah K. (2019) "Development of Microbial Fuel Cell based biosensor for Microplastic detection and degradation". National workshop on Bioelectrochemical Technologies for Waste to Energy Conversion and resource recovery (BETWEC-2019), Pondicherry University, Puducherry, July 22-24, 2019.
- 2018** Chaturvedi V. and Shah K. Microplastic Pollution in River Ganges at Varanasi: A Case Study. In: Proceedings of the Sixth International Conference on Plants and Environmental Pollution (ICPEP-6), CSIR-NBRI Lucknow, pp 169
- 2018** Gautam A, Shah K and Mallick S. (2018) "Screening of Sensitive and tolerant cultivars of Rice (C3) and Maize (C4) based upon morphological response against abiotic stress". In: Proceedings of the Sixth International Conference on

Plants and Environmental Pollution (ICPEP-6), CSIR-NBRI Lucknow, Nov. 27-30, 2018.

- 2018** NASI Conference on Technological Empowerment of Women, Commemorating the International Women's Day Vigyan Bhavan, New Delhi, organized by The National Academy of Sciences, India (NASI), March 8-9, 2018
- 2018** Science impact lives, "Education and the value of teachers" Shah K. Nobel Prize Series India 2018, Rashtrapati Bhawan, Delhi, February 5, 2018 chaired by the President of India.
- 2017** Gautam A, Shah K and Mallick S. Comparative Responses of rice and Maize Plants towards Salinity, Drought and Metalloids Stress. Indo Global Journal of pharmaceutical sciences, 7(1):27; Proceedings of the International Conference on Advances in Plant and Microbial Biotechnology (PMB, 2017)
- 2017** Application of hyperaccumulator plants for bioenergy generation and improving soil health in India. Pathak L and Shah K. National seminar on Water and soil Management for agriculture & Livelihood Security under climate change, Sunbeam college for women, Varanasi, September 8-9, 2017
- 2017** Current Status of Sanitation and public health in developing countries with its effective management solutions. Gupta S., Nandi I. and Shah K. National seminar on Water and soil Management for agriculture & Livelihood Security under climate change, Sunbeam college for women, Varanasi, September 8-9, 2017
- 2017** Insights in trends of wood consumption in cremation for sustainable management of rivers: a case study from Manikarnika Ghat of Varanasi. Nandi L and Shah K. Emerging Scenarios of Ganga, River Development & Water Resource Management, Mahamana Malaviya Research Centre for Ganga, River Development & Water Resource Management, BHU, Varanasi, 28 February - 1 March 2017
- 2017** Inaugural address. Shah K. Mid-term Seminar and workshop of participatory community-based disaster-risk reduction approaches in Varanasi, Seeds Asia, MOFA, Govt. of Japan, IESD, BHU, Varanasi, 24 January 2017
- 2017** Stress tolerance in plants: challenges in selection of appropriate research methodologies (Inaugural address). Shah K. Self-financed short term course on research methodologies, data analysis and stress tolerance in plants. Department of Biotechnology, Motilal Nehru National Institute of Technology, Allahabad, UP, 21 January 2017
- 2016** Existing soil and water conservation techniques: gaps and challenges. Gupta S. and Shah K. National conference on Managing Soil Resource for Environmental Sustainability: Challenges and Perspectives, IESD, BHU, 9-10 December 2016
- 2016** Degraded land rehabilitation through poplar biomass for energy growth in India. Pathak L and Shah K. National conference on Managing Soil Resource for Environmental Sustainability: Challenges and Perspectives IESD, BHU, 9-10 December 2016
- 2016** Reforms In curriculum of education for sustainable management of rivers: A multicultural approach. Nandi I, Shah K. 49th Annual Conference of IATE on

"Accommodating Multiculturalism in Education: The Indian Context" Faculty of Education, BHU, Kamachha, Varanasi & Indian Association of Teacher Education (IATE) 12-13 March 2016

- 2016** Use of rice peroxidase enzyme to mitigate the toxic effects of heavy metals on *Rhizobium leguminosarum* population for sustainable agriculture Singh P, Shah K National conference on Strategies in Plant Physiological Research for Meeting Challenges in Agriculture Department of Plant Physiology, Institute of Agricultural Sciences, BHU, Varanasi 3-5 March 2016
- 2016** Interaction of fNR with Nitrogen Oxide in silico mitigates Cd-stress in rice Singh P, Shah K. National conference on Strategies in Plant Physiological Research for Meeting Challenges 'in Agriculture Department of Plant Physiology, Institute of Agricultural Sciences, BHU, Varanasi, 3-5 March 2016
- 2016** Conformational adaptations of Os-APX with salicylic acid binding: A tool for stress management in plants Singh I, Shah K National conference on Strategies in Plant Physiological Research for Meeting Challenges in Agriculture Department of Plant Physiology, Institute of Agricultural Sciences, BHU, Varanasi 3-5 March 2016
- 2016** Climate resilient agriculture and plant adaptation to stresses. Shah K. National conference on Strategies in Plant Physiological Research for Meeting Challenges in Agriculture 33 Department of Plant Physiology, Institute of Agricultural Sciences, BHU, Varanasi, 3-5 March 2016
- 2016** Floodplain mapping using support vector machine and optical/near infrared satellite images. Nandi I, Srivastava P.K, Shah K. National conference on Water and Sustainable Development, Centre for Water Engineering and Management, Central University of Jharkhand, Ranchi, Jharkhand, 8-9 January 2016
- 2015** Threats to Dolphin. Shah K. Gangetic Dolphin Conservation Education Programme Refresher cum Orientation Meet Centre for Environment Education, VESS India and IESD, BHU, 16 December 2015
- 2015** Water and Sustainability. Shah K. Summer school cum workshop on Water and Wastewater Treatment, Malviya Centre for Innovation Incubation and Entrepreneurship (MCIIE), IIT, BHU, 22 May-05 June 2015
- 2015** Need for a shift in the development process for sustainable management of riverine ecosystem of river Ganga at Varanasi. Nandi I, Shah K. National seminar on Technologies and Management of Smart cities: Issues, Challenges and opportunities School of Management studies, Uttar Pradesh Rajarshi Tandon Open University, Allahabad, 3 May 2015
- 2015** Is Ganga really polluted: Myth and Facts. Shah K. National seminar on Impact of Industrial effluent on the self purification capacity of River Ganga, Department of Chemistry, Harishchandra P.G, College, Varanasi, U.P. 29-30 March 2015
- 2015** Need for a shift in waste management paradigm for human welfare on the Ganga riverfront at Varanasi. Nandi I, Shah K. National conference on Biotechnology and Human welfare: New vistas Department of Biotechnology, VBS, Purvanchal University, Jaunpur, U.P. 21-22 March 2015

- 2015** Understanding enigmas in adaptation biology using bioinformatics tools. Shah K. National conference on Biotechnology and Human welfare: New vistas Department of Biotechnology, VBS, Purvanchal University, Jaunpur, UP., 21-22 March 2015
- 2014** Role of Biodiversity in sustainable management of Ganga River water at Varanasi. Nandi I, Shah K National seminar on urbanization and its impact on environment. Department of Botany, Govt. Girls college, SATNA (M.P.), 6-7 Dec 2014
- 2013** Structure and function prediction of stress-responsive C2H2-type-Zinc finger protein-BcZAT12 that confers abiotic stress tolerance in transgenic tomato plants. Shah K, Rai A.C. Singh I, Singh M National Symposium on Abiotic stress and transcription factors, Indian Institute of Vegetable Research, Varanasi, Dec 2013
- 2013** Structural analogs of elvitegravir have potential as an inhibitor of HIV - integrase. Shah K and Jayaswal A, NASI Annual meet, Institute of Oceanography and University of Goa, Goa, Nov 6-10, 2013
- 2012** Scope of Bioinformatics and its applications. Shah K. Workshop on Applications of Biotechnology and Related Tools, Department of Biotechnology, Agrasen P. G. College, Varanasi, April 07 2012
- 2012** Scope and Applications of Bioinformatics. Shah K. Training and Refresher Course, ' Indian Institute of Vegetable Research, Varanasi, March 06, 2012
- 2012** A cross-talk between salicylate and NO in rice mitigates Cd-induced toxicity: a tool for sustainable crop management. Singh I, Singh P and Shah K. National seminar on environmental concerns and sustainable development: issues and challenges for India, IESD, BHU 2-4 March, 2012
- 2012** Salicylic acid signaling in plants under stress: environmental issue for sustainable crop management. Singh I and Shah K. 99th Indian Science Congress, KIIT University, Bhubaneswar, January 3-7, 2012
- 2012** Data mining for structural template analogues to saquinavir and HIV protease inhibitor for anti retroviral drug design. Jayaswal A and Shah K. 99th Indian Science Congress, KIIT University, Bhubaneswar, January 3-7, 2012
- 2011** Studies with rice peroxidase for potential application in development of hydrogen peroxide sensor. Singh P and Shah K. National Seminar on Reactive Oxygen Species: Roles in animal and plant biology, Department of Biochemistry, University of Lucknow, Lucknow, December 23-24, 2011
- 2011** Sodium nitroprusside treatment mitigates the effect of Cadmium stress in growing rice seedlings. Singh P and Shah K. National Seminar on Reactive Oxygen Species: Roles in animal and plant biology, Department of Biochemistry, University of Lucknow, December 23-24, 2011
- 2011** Role of salicylic acid and jasmonic acid as signal molecule in plant defense to cadmium stress. Singh I and Shah K. National Seminar on Reactive Oxygen Species: Roles in animal and plant biology, Department of Biochemistry, University of Lucknow, December 23-24, 2011

- 2011** In silico study of interaction of P AD4 with EDS 1 a regulator of salicylic acid signaling pathway. Singh I and Shah K. Conference on "Nucleic Acids in Disease and Disorder", IITDelhi, New Delhi, December 7-9, 2011
- 2011** Rain Water Harvesting. Shah K. 4th Refresher Course in Environmental Studies UGC-Academic Staff College, Banaras Hindu University, Varanasi, October 01-21, 2011
- 2011** Bioinformatics for Entrepreneurs. Shah K. Technology Incubation Cell, IT, BHU, Institute of Technology, BHU, October 13, 2011
- 2011** Application of Biotechnology tools for testing seed quality and GM crops. Shah K. National Training on Seed Testing National Seed Research and Training Centre, Ministry of Agriculture, Govt. of India, Varanasi, September 26-30, 2011
- 2011** Understanding Biochemical and Molecular Biology' Techniques in Seed Science. Shah K. National Training on Seed Testing National Seed Research and Training Centre, Ministry of Agriculture, Govt. of India, Varanasi, September 26-30, 2011
- 2011** Management of Metal Contaminated Sites Employing Green Mops. Shah K, Nahakpam S and Singh P. National Workshop on Role of Higher Education in Disaster Management In India: Issues and Challenges, Institute of Environment and Sustainable Development, BHU, Varanasi, April 29-30, 2011
- 2011** Climate Change- A Potential Trigger for Psoriasis Arora N, Pandey N, Meena RP, Shah K and Rai SP National Workshop on Role of Higher Education in Disaster Management In India : Issues and Challenges, Institute of Enviro. and Sustainable Develop., BHU, Varanasi, April 29-30, 2011
- 2011** Crosstalk between salicylate and jasmonate pathways in *Oryza sativa*-an in silico study Agrawal P, Singh N, Singh I, Singh P and Shah K. National Symposium on Emerging Trends In Plant Sciences, Centre of Advanced Study, Department of Botany, BHU, Varanasi, March 03-04, 2011
- 2011** Youth of India during pre-independence era and Mahatma's vision Shah K and Swarnlata. National Seminar on Mahatma's Vision and the Challenges of The Millennium Development Goals, MMV, BHU, Varanasi, March 01-02, 2011
- 2010** Transcriptional Response of the artemisinin biosynthesis to sodium acetate elicitation in *Artemisia annua* hairy root culture. Rai S.P., Meena R.P., Shah K and Rai S.K. National conference of Plant Physiology on Physiological and Molecular Approaches for Crop Improvement under Changing Environment, BHU, Varanasi, November 25-27, 2010
- 2010** Expression pattern of SOD isoforms and stress-induced proteins under combined effect of cadmium and heat stress in two rice genotypes. Nahakpam S, Shah K. National conference of Plant Physiology on Physiological and Molecular Approaches for Crop Improvement under Changing Environment Institute of Agricultural Sciences, BHU, Varanasi, November 25-27, 2010
- 2010** GM Seeds from India: Laboratory techniques to assess trans genes in seeds. Shah K. National Training on Seed Quality Regulation and Seed Testing, National Seed Research and Training Centre, Ministry of Agriculture, Govt. of India,

Varanasi, July26-30, 2010

- 2010** Mahapurano me varnitpavitravrikshevamvartaman me carbon credit Rai 1.S. and Shah K. National Seminar on Global Challenges: Literature, Culture, Society, and Environment. MMV,BHU, March 19-20,2010
- 2010** Sahitya aurSanskriti : Bazar ka Hastakshep. Shah K. National Seminar on Global Challenges: Literature. Culture. Society, and Environment. MMV, BHU, March19-20,2010
- 2010** Plant bioinformatics and study of seeds. Shah K. National Training on Integrated Seed Improvement National Seed Research and Training Centre, Ministry of Agriculture, Govt. of India, Varanasi, February01-10, 2010
- 2009** Plant bioinformatics: a cross-talk between wet-lab and computational tools. Shah K. Winter school, Indian Institute of Vegetable Research, Varanasi, December1-17, 2009
- 2009** Development of Transgenic Tomato (var. Kashi vishesh) lines using BCZAT12 gene for abiotic stress resistance Rai A. C., Singh M., Shah K, Kumar Sand Rai M. 6th Solanaceae GenomeWorkshop SOL 2009, Le Meridien, New Delhi, India, November08-13,2009
- 2009** Structural Simulation of Putative T-cell epitopes for designing of Meningitis vaccine. Chaubey P, Shah K and Singh P. National Seminar on Bioinformatics: Approaches and Applications in Biosciences, MahilaMahavidyalaya, Banaras Hindu University, Varanasi, March, 5-6, 2009
- 2009** Purification of cationic peroxidase from rice and its potential use in biosensor. Shah K and Nahakpam S. 96th Session of Indian Science Congress, North Eastern Hill University, Shillong, January3-7, 2009
- 2008** Metabolomics: From Biochemistry to System Biology. Shah K. National Seminar and Workshop on Metabolic Networks and Drug Designing, MahilaMahavidyalaya, Banaras Hindu University, Varanasi, November 28-30,2008
- 2008** Calcium helps in binding of enzyme peroxidase from shoots of growing rice plants. Nahakpam S. and Shah K. National Symposium on Recent Advances in Toxicological Studies: Molecular and Physiological Aspects, MahilaMahavidyalaya, Banaras Hindu University, Varanasi, February27-28, 2008
- 2008** Evaluation of Seed Quality: Biochemical and Biotechnological Techniques. Shah K.National Training on Seed Quality Regulation and Seed Health Testing and Varietal Identification through in vitro techniques, National Seed Research and Training Centre, Ministry of Agriculture, Govt. of India, Varanasi, February18-22, 2008
- 2007** In situ localization of heavy metal cadmium and histochemical staining of peroxidase in growing rice seedlings. Nahakpam S. and Shah K. 77th Annual Session of National Academy of Sciences, India and Symposium on Novel Approaches for Food and Nutritional Security, Central Food and Technologic-al Research Centre, Mysore, December6-8, 2007

- 2007** Tools and Biotechnological Approaches on Seed Quality Evaluation. Shah K. National Training on Seed Quality Control and Seed Testing, National Seed Research and Training Centre, Ministry of Agriculture, Govt. of India, Varanasi, March19-23,2007
- 2006** Member of the Academic Program Committee and Reports Committee Shah K. National Seminar and workshop on Bioinformatics and Computational Biology MMV, Banaras Hindu University, Varanasi ,March22-24, 2006
- 2005** Effect of cadmium on germination and seedling vigour of susceptible and tolerant rice (*Oryza sativa*) cultivars from North-East -a preliminary study. Nahakpam S. and Shah K. Symposium on Advances in Biochemical Education and Research Department of Biochemistry, Shillong, Meghalaya, February 25-26,2005
- 2003** Water stress induced alterations in behaviour of nitrogen assimilatory enzymes and malate dehydrogenase isoforms in growing rice plants, Shah K and Dubey R.S.90th Session of Indian Science Congress, Bangalore, January3-7, 2003
- 1997** The changes in behaviour of phosphorolytic enzymes from rice as affected by heavy metal cadmium. Shah, K.66th Annual Meeting of Society of Biological Chemists (I), New Delhi, October, 1997
- 1997** Effect of cadmium toxicity on phosphorolytic events in germinating rice seeds. Shah, K.and Dubey R.S.84th Session of Indian Science Congress, New Delhi, January 3-7,1997
- 1996** Absorption and distribution of cadmium in growing rice plants and the role of osmolytes in stress tolerance. Shah, K.and Dubey R.S. National Seminar on Conservation of Endangered Species and Ecosystems, Varanasi, December5-7, 1996
- 1996** Cadmium induced changes in ribonuclease isoforms in rice seedlings and role of proline as enzyme protectant. Shah, K., Kumar,R.G. and Dubey R.S. National Symposia on Modern Perspectives in Biochemistry and Biotechnology, Lucknow, October 25-27, 1996
- 1996** Cadmium toxicity in rice plants. Absorption and distribution of cadmium as well as isolation of an inducible protein complex from rice seedlings. Shah, K.83rd Session of Indian Science Congress Patiala, January 3-7, 1996
- 1995** Cadmium accumulation and distribution in relation to proline level in rice plants. Shah, K. and Dubey R.S.64th Annual Meeting of Society of Biological Chemists (India), Lucknow, October16-18, 1995
- 1995** Absorption and distribution of cadmium in growing rice plants and isolation of an inducible 18kDa cadmium binding protein complex from root tissues. Shah, K. and Dubey R.S. Ath Convention of the Indian Society of Agricultural Biochemists, Varanasi, March 20-21, 1995
- 1994** Cadmium toxicity effects on nucleolytic and proteolytic activities in growing rice plants. Shah, K. and Dubey R.S.31st Annual Convention of Chemists, Varanasi, December 1994

1994 Effect of cadmium toxicity on ribonuclease activity and its isoforms in growing rice plants. Shah, K and Dubey, R.S. 81st Session of Indian Science Congress Jaipur, January, 3-7,1994

CONFERENCES/ SEMINARS/ REFRESHER COURSE ORGANIZED:

2019 Coordinated and organized the mega event of National Importance the Smart India Hackathon 2018. Grand Finale, Ministry of Human Resource Development at BHU Nodal Centre, 01-02 March 2019.

2018 Organizing Secretary, International workshop- INGSA Asia Capacity Building Workshop on Environment (India) (IACBE-2018) held on 11- 12th December 2018 at Institute of Environment and Sustainable Development, BHU, Varanasi.

2018 Coordinated and organized the mega event of National Importance the Smart India Hackathon 2018. Grand Finale, Ministry of Human Resource Development at BHU Nodal Centre, 30-31 March 2018.

2017 Coordinated and organized the Visit of Japanese Ambassador to Institute of Environment and Sustainable Development and to deliver a popular lecture at Banaras Hindu University, December 05,2017

2017 Coordinated and organized the Visit of Padmashree Sant Sechewaal at Banaras Hindu University, September 2017.

2017 Organizing Secretary, National Conference on Emerging Scenarios of Ganga, River Development & Water Resource Management held on 28 Feb-1 March 2017, MahamanaMalaviya Research Centre for Ganga, River Development & Water Resource Management, BHU, Varanasi.

2016 Coordinated and organized the Visit of Padmashree Shri Shri Ravishankar at Banaras Hindu University, December, 2016 .

2014 Organizing Secretary, National Seminar on Water Resource Management in an Era of Changing Climate, January 10-11,2014 at RGSC, BHU, Mirzapur campus.

2011 Organizing Secretary, National Workshop on Role of Higher Education in Disaster Management In India: Issues and Challenges, April 29-30, 2011, Institute of Environment and Sustainable Development, BHU, Varanasi.

2011 Organizing Secretary, Workshop on Conservation of Ganges River Dolphin, July 28-30, 2011, Institute of Environment and Sustainable Development, BHU, Varanasi and Centre for Environment Education, Lucknow at BHU, Varanasi.

2011 Coordinator for the 4th Refresher Course in Environmental Studies held during Oct 01-21,2011 at Academic Staff College, BHU, Varanasi

2008 Organizing Secretary, National Symposium on Recent Advances in Toxicological Studies: Molecular and Physiological Aspects, February 27-28, 2008, Banaras Hindu University, Varanasi.

Ph. Ds SUPERVISED AND ONGOING:

Completed

- 2009** Dr. Sareeta Nahakpam
Biochemical changes in rice (*Oryza sativa* L.) seedlings subjected to heat and metal induced oxidative stress
- 2012** Dr. Avinash Chandra Rai
Biochemical and molecular characterisation of *BcZAT12* gene involved in abiotic stress in tomato (*Solanum lycopersicum* L.)
- 2013** Dr. Indra Singh
Biochemical and bioinformatics approach to study the effect of salicylic acid and jasmonic acid on cadmium toxicity in rice
- 2014** Dr. Manoj Kumar
Biochemical and molecular studies of melanin producing isolates of *Bipolaris sorokiniana*
- 2017** Dr. Purna Singh
Influence of nitric oxide signalling on cadmium-stress-induced oxidative burst and protein profile in rice
- 2017** Dr. Priyanka Singh
Immobilized rice peroxidases biosensor for dopamine determination based on functionalized conducting polymers
- 2017** Dr. Amit Jayaswal
In-silico Screening and computational mutation scanning of putative HIV inhibitors for drug design

Ongoing

- 2013** Mr. Prashant Kumar Sharma
Designing, characterization and accumulation of enzyme nano-composite conjugate for degradation of environmental pollutants
- 2014** Ms. Ipsita Nandi
Developing tools for river health assessment of river Ganga at Varanasi.
- 2015** Mrs. Laksmi Pathak
Rehabilitation of degraded land by energy crops for environmental sustainability
- 2015** Mr. Ambedkar Gautam
Studies on differential responses in C3 and C4 plants against arsenic toxicity in the environment
- 2016** Mrs. Shalini Gupta
Understanding the impact of pollutants from a coal fired thermal power plant in U.P. on Kharif and Rabi crops grown in nearby villages.
- 2017** Ms. Shivani Singh
Proteomics and genomics studies in relation to cadmium toxicity and drought in rice.

- 2017 Mr. Gowardhan
- 2018 Ms. Chitra Pokharia

PLACEMENTS/ACCOMPLISHMENTS OF Ph.D. STUDENTS

All the Ph.D. students who have received their degrees are placed as Assistant Professor or are pursuing Postdoctoral studies abroad.

- Ms. Prerna Singh received best poster presentation at Biosangam, MNNIT Allahabad.
- Ms. Priyanka Singh received Swarna Jayanti Puraskar of National Academy of Sciences.
- Mr. Manoj Kumar received best thesis award by UP-Council of Scientific Research, Lucknow.
- Ms. Chitra Pokharia received best e-poster award at BETWEC-2019. Pondicherry University, Puducherry, July 22-24, 2019.
- Ms. Shalini Gupta received best poster award at NCPCSE-2019, Amity University, Lucknow, Sept. 3-4, 2019

FULL BRIGHT FELLOW

Ms. Olivia Trambadore, USA pursuing her post-doctoral study at IESD on Water Resource Management under the guidance.

EXPERIENCE IN EDUCATIONAL ADMINISTRATIVE ACTIVITIES:

Served under various capacities at the University level Committees and have been part of almost all the decision-making Committees of Banaras Hindu University.

- Member of Academic Council BHU.
- Chairman of Fact Finding Committees.
- Chairperson of the Policy Planning Committee of Institute.
- Member of the **School Board**, BHU during (2010-2011) and from 2018 to 2021.
- Member of The BHU International Advisory Committee 2006-2008, 2008-2010, 2010- 2013.
- Convener of the University Task Force for Stakeholders Participation under Roshni Initiative at BHU.
- Member of the University Residential Accommodation Allotment Committee (2011-2013).
- Member of Advisory Board, National Seed Research and Training Centre (Varanasi), Ministry of Agriculture, Govt. of India (2005-till date).
- VC Nominee for faculty appointments at BHU.
- Ph/D. Viva Voce Examiner for several Central and State Universities including Chennai, Osmania, Pondicherry, Bhagalpur, UP Technical University, Dehradun, Allahabad, Gorakhpur
- Resource person for DST- Vigyan Jyoti program at IIT held at Universities.
- Expert for appointments at University level
- VC Nominee and member of University Building committee

- Judge for the University Youth fest Spandan
- Member of the Committee for publishing University telephone directory
- Member Student Grievance Cell.
- Member Anti-ragging Committee.
- Member FAC-I and FAC-II Committee.
- Coordinator for M.Sc. Bioinformatics Course at MMV (Dec 2010-March 2011).

MEMBERSHIP OF LEARNED BODIES:

- (i) Life Member of **Indian Science Congress** (f. 1993 onwards). Membership No. **L-8152**
- (ii) Life Member of **Society of Biological Chemists**, India (f. 1994 onwards). Membership No. **1007**.
- (iii) Member of **Canadian Society of Plant Physiologists**, Canada (f. Jan,1999 onwards).
- (iv) Member of **BHU Alumni Association** since Dec 2004.
- (v) Life Member of **Biotechnological Research Society of India** (f.2009 onwards). Membership No. **LM 812**.
- (vi) Life member of **The National Academy of Sciences**, India (f.2010 onwards).
- (vii) Life Member of the **Society of Agricultural Biochemists** of India (f.2010 onwards).
- (viii) Life member of the **Indian Society of Plant Physiologists** (f.2010 onwards).
- (ix) Life member of the **Proteomics Society of India** (f.2016 onwards) Membership No. **334**.
- (x) Life member of the **National Environmental Science Academy** (f.2016 onwards) Membership No. **1849**.

OTHER ACADEMIC CONTRIBUTIONS:

- A Member of the Academic Program Committee and Reports Committee for **National Seminar and workshop on Bioinformatics and Computational Biology** held at MMV, Banaras Hindu University, Varanasi, during March 22-24, 2006.
- Worked as a member of the organizing committee in organizing the **Fourth Convention of Agricultural Biochemists and symposium on recent developments in Biochemistry** hosted by Department of Biochemistry, Faculty of Science, Banaras Hindu University, India.
- Worked as a member of the organizing committee in organizing the **Silver Jubilee Seminar on Advances in Biochemical Education and Research** hosted by Department of Biochemistry, North-Eastern Hill University, Shillong, India.

MAJOR RESEARCH CONTRIBUTIONS:

Her significant work includes the development of biosensors using immobilized plant enzymes (*Biotechnology and Bioprocess Engineering*, **13**, 632-638, 2008) and studies pertaining to inhibitors of HIV protease (*In Silico Biology*, **8-033,2008**), HIV integrase (*Archives of Virology* **2014**) and *N. meningitides* vaccine constructs (*Indian Journal of Biotechnology*, **2010**) in silico using bioinformatics tools.

Development of drought and heat stress tolerant transgenic tomato lines bearing fruits rich in bioactive compounds is an important achievement of the biotechnology work undertaken by her (*Plant Physiol. Biochem.* **2012;2013; Phytochemistry** **2013; Biometals** **2014; LWT Food Technology** **2015**).

Significant contributions in the area of Enzyme Technology and Environmental Biotechnology and Bioinformatics. Developed a rice-peroxidase-enzyme-biosensor which is the novel contribution to help monitor neurological patients for dopamine levels and help to administer proper dose of drug to the patients of Alzheimer's/Parkinson's diseases (*Talanta* 2012; *PNAS(I)* 2013). Presently involved in molecularly imprinted polymers as tools for environmental monitoring and drug delivery.

Purification and characterization of a pectin-binding cationic peroxidase from *Arabidopsis* leaves and its N-terminal protein sequence is a novel contribution to Plant Science (*Phytochem., U.K., 65, 307-312, 2004*). This peroxidase has similarity with P32 of zucchini important for cell wall antioxidant property. This postdoctoral work was carried at University of Geneva, **Switzerland**. Worked with the phytochelatin induction in root culture tissues of *Rubia* and *Horseradish* with special emphasis to the biochemical changes brought about in the presence of Cd and glutathione on its biosynthetic enzyme γ -glutamyl cysteinyl transpeptidase and phytochelatin synthase using Radioisotopes and LC-MS. The work was presented at Plant Biology Canada'99 held at Saskatoon, Canada and was widely acclaimed. This postdoctoral study was carried out at National Institute of Health Sciences, Tokyo, **Japan**. Studies related to metal sulphur ratios in induced phytochelatin under metal stress has been successfully accomplished and presence of Iron induced phytochelatin has also been seen for the first time.

Study of the effect of abiotic stressors on tolerance, toxicity and signalling in rice, metal detoxification, transgenics development, are some of other areas of work. Have made a novel contribution in the field of Metabolism, Molecular Biochemistry and Enzymology by isolating different molecular forms of RNAses from rice parts and characterising, biochemically a cadmium inducible protein binding complex, from roots of rice plants (*Plant Physiol. Biochem., Paris, 33, 577-584, 1995; J. Plant Physiol. Germany, 152, 448-454, 1998*) *In vitro* and *in vivo* enzymatic studies on the nucleolytic, proteolytic and phosphorolytic events as influenced by cadmium stress in rice. Studied the Nitrate reductase holoenzyme (*J. Plant Physiol. (Germany), 151, 316-322, 1997*), the changes in the photosynthetic efficiency of growing rice seedlings as brought about by Cd and other stressful conditions (*Plant Sci. (UK), 156, 23-34, 2000*) and antioxidant enzymes specially superoxide dismutases and peroxidases. Her work on antioxidant enzymes in rice plants subjected to Cd stress published in *Plant Sci. (U.K.), 161, 1135-1144, 2001* has been cited more than 700 times.

EXTRA-CURRICULAR ACTIVITIES:

- Published articles in several Newsletter and Scientific reports namely in Communication, JISTEC Newsletter, Japan
- STA Today, Official Governmental Science magazine from Japan Science and Technology, Japan.
- A Children program-Science forum radio talker at All India Radio, Varanasi, India.
- Holds training as a **Girl Guide** and **N.C.C.** Certificate C with rank of Under Officer.
- Diploma in Indian Instrumental Music, the **Sitar**.
- Associated with Science, Craft and Flower arrangements.
- Comparer at functions and several social events of various kinds.
- Associated with various bodies at Varanasi like Kala Prakash, Rotary International, Bhatat Vikas Parsihad, JC, etc.
- Active participation at games and sport. Won 2nd prize for 100m race at BHU teachers sports meet.
- Invited Speaker at Vanita Polytechnic, Varanasi for a Lecture cum demonstration on

"Flower Decoration and Interiors" held on 08.09.2010.

- Invited Speaker at Institute of Chartered Accountants, Varanasi, Chapter on "Management of Meetings" and "General Management and Communication skills" held during 24th Jan 06 to s" Feb 2006 and 27th Feb 2007 to 16th March 2007.
- Invited speaker at Ganga Pollution. Prevention Unit of U.P. Jal Nigam, Bhagwanpur, Varanasi, on World Environment day, held on 5 June 2017.
- An expert on Ikebana the Japanese art of flower arrangement.

(Kavita Shah)