Biodata of M.N.V. Prasad as on 20 Feb 2014

Full name: MAJETI NARASIMHA VARA *PRASAD*

Date of birth: 10-02-1953

Affiliation:

M.N.V. Prasad
Professor - Environmental Biotechnology
[Lecturer 1980-85; Lecturer (Senior Scale) 1986-90; Reader 1990-98;
Full Professor since 1998]
[in service from 1980 to presentday, Lecturer – Lecturer (Senior Scale) - Reader - Full Professor]
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Academic qualifications

Degree	Class	University	Year
B.Sc (B.Z.C)	High First	Andhra University, Waltair	1970-73
M.Sc (Botany)	High First	Andhra University, Waltair	1973-75
Ph.D (Botany)		Lucknow University, Lucknow	1975-79
Russian - Proficiency certificate		Lucknow University	1976
French - Proficiency certificate		Eastern Quebec Regional School Board Sainte-Foy, Canada	1994

Teaching/Research experience in Central Universities: 31 years

1. Lecturer, June 1980-85, Dept. of Botany, North Eastern Hill University, Shillong
2. Lecturer (Senior Scale), July 1986-90, Sch. of Life Sci. University of Hyderabad
3. Reader, Feb. 1990-98, Department of Plant Sciences, University of Hyderabad
4. Professor, since Aug 1998, Department of Plant Sciences, University of Hyderabad

Honours/Distinctions:

2008 Elected Fellow – Andhra Pradesh Akademy of Sciences, Hyderabad
2007 Pitamber Pant National Environment Fellow
Ministry of Environment and Forests, Government of India

2005 Working group members (Only member from India) in COST action 859 (Phytotechnologies) supported by European Science Foundation.
1998 Elected Fellow - Linnean Society of London, UK
1998 Elected Fellow - National Institute of Ecology, New Delhi

Editorial service to int. scientific journals

1. Associate Editor, Acta Physiologia Plantarum, Springer
2. Biological Diversity and Conservation [BioDiCon], Turkey
3. European Journal of Mineral Processing and Environmental Protection, Turkey
4. The Scientific World-Online multidisciplinary journal
5. Bioremediation, Biodiversity and Bioavailability, GSB, UK
6. Functional Plant Science and Biotechnology, GSB, UK
7. Medicinal and Aromatic Plant Science and Biotechnology, GSB, UK
8. Terrestrial and Aquatic Environmental Toxicology , GSB, UK
9. The Asian and Australasian Journal of Plant Science and Biotechnology, GSB, UK

Membership in professional bodies:

a. Life member - National Institute of Ecology - New Delhi, India
b. Life member - Bioenergy Society of India, New Delhi
c. Life member - Indian network for soil contamination research - New Delhi

Visiting academic assignments

1) Visiting Scholar for summer school, Ghent University, Coupure Links 653 B-9000 Gent, Belgium, Sept 11-23, 2012

2) Visiting Scientist, Laboratory of Analytical Chemistry and Applied Ecochemistry, Faculty of Bioscience Engineering – Ghent University, Coupure Links 653 B-9000 Gent, Belgium, May-July 2011 IMETE

3) Visiting Professor, Ural State University, Faculty of Biology, Ekaterinburg, Russia

   i) 2008 May
   ii) 2011 April
   iii) 2012 Sept/ Oct

4) Visiting Professor, Biology Faculty, Botany Department, al-Farabi Kazakh National University, Almaty , Republic of Kazakhstan - 2006 June and 2007 May-June

5) Invited Professor, Centre for Environmental Risk Assessment & Remediation, University of South Australia Mawson Lakes Campus, Mawson Lakes, South Australia 5095, Australia Nov-Dec 2005

6) Invited Professor, Dept. of Biology/Botany University of Oulu, Finland - May-June 2003 - Finnish Academy

7) Guest Scientist, Institute of Botany, Stockholm University- Swedish International Development Cooperation Agency (SIDA), Sweden , May-July 2000

8) Professor, Departamento de Botanica, Universidade de Coimbra, Coimbra,1998-2010 Portugal, FCT several visits

9) Professor, Dept. Plant Physiol. & Biochem. Inst. Molecular Biol. Jagiellonian Univ. Krakow, Poland. January-July 1996 – 2009 several visits

10) Professor, Université du Québec, INRS-Eau, Water Research Center C.P. 7500, Sainte-Foy, Québec G1V 4C7, Canada. July-December 1994 - NSERC, Canada foreign researcher award.

Scientific Service to the Ministry of Environment and Forests, GOI

1. Member "Indira Gandhi Paryavaran Puraskar" prize committee during 2007 and 2008, as Prime Ministers nominee. "Indira Gandhi Paryavaran Puraskar cash prize Rs. Rs 10 Lakhs instituted by the M/o Envir & Forests, GOI (tenure completed).

2. Member of the expert group in the broad thematic area of "Prevention, Abatement and Control of Pollution" M/o of Envir & Forests, GOI

3. Member of the Advisory Committee for Research Programme on Bioremediation of contaminated sites and reclamation of degraded areas - M/o of Envir & Forests, GOI

4. Member of the expert group on "Botanic Gardens and Centres of *Ex-situ* Conservation for rare plants" - M/o of Envir & Forests, GOI

5. Member of the ENVIS (Environmental Information System) Technical Committee on "Ecology & Ecosystem services" - M/o of Envir & Forests, GOI

6. Member of the committee for formulation of "All India Coordinated programme on inventorying, Monitoring, Conservation and Sustainable Utilization of Biodiversity" to be launched by the by the M/o Envir & Forests, GOI

7. Member of the monitoring and evaluation committee for the Demonstration/pilot projects of "*In-situ* treatment of sewage through bio-remediation'" under National River Conservation Plan (NRCP)/ National Ganga River Basin Authority (NGRBA) M/o Envir & Forests, GOI

8. Member of the steering committee for establishing NMNH at the Botanic Garden of Indian Republic (BGIR) NOIDA New Delhi. M/o Envir & Forests

9. Member, Reconstituted Expert Group on the Scheme "Assistance to Regional Botanic Gardens and Centres of *Ex-situ* Conservation for Rare Plants"

Edited books

15. Golovko TK, Gruszecki WI, Prasad, MNV, Strzalka K (Eds) (2014) Photosynthetic pigments: chemical structure, biological functions and ecology. Institute of Biology, Komi Scientific Centre Syktyv-kar, Russian Academy of Sciences, Russia.

14. Parvaiz Ahmad, Azooz, M.M. & Prasad MNV (eds) (2013) Salt Stress in Plants: Signaling, Omics and Adaptations. Springer. USA (in preparation)
https://www.springer.com/life+sciences/plant+sciences/book/

13. Parvaiz Ahmad, Azooz, M.M. & Prasad MNV (eds) (2012) Ecophysiology and Responses of Plants Under Salt Stress. Springer. USA (in press), Approx. 450 p. 51 illus., 24 in color.
https://www.springer.com/life+sciences/plant+sciences/book/978-1-4614-4746-7

12. Parvaiz Ahmad & Prasad MNV (eds) (2012) Abiotic Stress Responses in Plants: Metabolism, Productivity and Sustainability. Springer. USA. 1st Edition., 2012, XIX, 551 p. 63 illus., 14 in color. Hardcover, ISBN 978-1-4614-0633-4
http://www.springer.com/life+sciences/plant+sciences/book/978-1-4614-0633-4

11. Parvaiz Ahmad & Prasad MNV (eds) (2012) Environmental Adaptations and Stress Tolerance of Plants in the Era of Climate Change. Springer. USA.1st Edition., 2012, XIV, 498 p. 86 illus., 41 in color. Hardcover, ISBN 978-1-4614-0814-7
http://www.springer.com/life+sciences/plant+sciences/book/978-1-4614-0814-7

10. Prasad MNV (2011) A State-of-the-Art report on Bioremediation, its Applications to Contaminated Sites in India. M/o of Environment & Forests, GOI New Delhi. Pages 90
http://moef.nic.in/downloads/public-information/BioremediationBook.pdf

9. Микроэлементы в окружающей среде : биогеохимия, биотехнология и биоремедиация под ред. М.Н.В. Прасада, К.С.Саджвана, Р. Найду; пер. с англ. к.б.н., доц. Д.И. Башмакова и д.б.н., проф. А.С. Лукаткина. - Москва : Физматлит, 2009. - 815 с. : ил., карт.; 24 см. ISBN: 978-5-9221-1195-9
[Prasad MNV, Sajwan K.S. and Ravi Naidu (eds) (2010) Trace elements in the environment: Biogeochemistry, Biotechnology and Bioremediation. Fizmatlit Publishers. Moscow. 816 p]

8. Prasad MNV (ed) (2008) Trace elements as contaminants and nutrients: consequences in ecosystems and human health. John Wiley and Sons Inc. New York. 777 pp.

7. Prasad MNV, Sajwan K.S and Ravi Naidu (eds) (2006) Trace elements in the environment: Biogeochemistry, Biotechnology and Bioremediation. CRC Press. Boca Raton. Taylor and Francis Group. 726 pp.

6 Prasad MNV (ed) (2004) Heavy metal stress in plants: from biomolecules to ecosystems. Springer-Verlag Heidelberg. 2nd Ed. 462 pp.

5 Prasad MNV (ed) (2004) Heavy metal stress in plants: from biomolecules to ecosystems. Narosa Publishing House. New Delhi 2nd Ed. 462 pp.

4. Prasad MNV and K.Strzalka (eds) (2002) Physiology and biochemistry of metal toxicity and tolerance in plants. Kluwer Academic Publishers. Dordrecht. 432 pp.

3. Prasad MNV (ed) (2001) Metals in the Environment: Analysis by biodiversity. Marcel Dekker Inc. New York. 504 pp.

2. Prasad MNV and J. Hagemeyer (eds) (1999) Heavy metal stress in plants: from molecules to ecosystems. Springer-Verlag. Heidelberg. 401 pp.

1. Prasad MNV (ed) (1997) Plant Ecophysiology, John Wiley and Sons Inc.New York USA.542 pp.

Acadenic Administrative experience

a) 2000-2004, Head, Dept. of Plant Sciences,
b) 2001-2003, Co-ordinator, M.Sc Biotechnology programme (Sponsored by the Department of Biotechnology, Govt of India)
c) 1995-2008, Co-ordinator, PG Diploma in Enviromental Education and Management, Centre for Distance Education, Univ. Hyderabad

List of 10 best cited publications

Citations for M.N.V.Prasad: 3736 Cited Publications:100, H-Index 32 Source: http://code.google.com/p/citations-gadget/	
1. Prasad, MNV (1995) Cadmium toxicity and tolerance in vascular plants. ENVIRONMENTAL AND EXPERIMENTAL BOTANY, 35 (4): 525-545.	339
2. Prasad, MNV; Malec, P; Waloszek, A; et al. (2001)Physiological responses of *Lemna trisulca* L. (duckweed) to cadmium and copper bioaccumulation PLANT SCIENCE, 161 (5): 881-889	138
3. Mishra, S; Srivastava, S; Tripathi, RD; et al. (2006) Phytochelatin synthesis and response of antioxidants during cadmium stress in *Bacopa monnieri* L. PLANT PHYSIOLOGY AND BIOCHEMISTRY, 44 (1): 25-37	128
4. Nagalakshmi, N; Prasad, MNV (2001) Responses of glutathione cycle enzymes and glutathione metabolism to copper stress in *Scenedesmus bijugatus*. PLANT SCIENCE, 160 (2): 291-299	117
5. Devi, SR; Prasad, MNV (1998) Copper toxicity in *Ceratophyllum demersum* L. (Coontail), a free floating macrophyte: Response of antioxidant enzymes and antioxidants. PLANT SCIENCE, 138 (2): 157-165 NOV 23 1998	116
6. Prasad, MNV; Freitas, H (2003) Metal hyperaccumulation in plants - Biodiversity prospecting for phytoremediation technology. ELECTRONIC JOURNAL OF BIOTECHNOLOGY, 6 (3): 285-321	100
7. Aravind, P; Prasad, MNV (2003) Zinc alleviates cadmium-induced oxidative stress in *Ceratophyllum demersum* L.: a free floating freshwater macrophyte. PLANT PHYSIOLOGY AND BIOCHEMISTRY, 41 (4): 391-397	92
8. Freitas, H; Prasad, MNV; Pratas, J (2004) Plant community tolerant to trace elements growing on the degraded soils of Sao Domingos mine in the south east of Portugal: environmental im-	83

	plications ENVIRONMENT INTERNATIONAL, 30 (1): 65-72	
9.	Prasad, MNV; Freitas, H (2000) Removal of toxic metals from solution by leaf, stem and root phytomass of *Quercus ilex* L. (holly oak) ENVIRONMENTAL POLLUTION, 110 (2): 277-283	77
10.	Reddy, GN; Prasad, MNV (1990) Heavy metal-binding proteins peptides - occurrence, structure, synthesis and functions - a review. ENVIRONMENTAL AND EXPERIMENTAL BOTANY, 30 (3): 251-264	47

Section 1: Publications in peer reviewed journals (reverse chronology)

2014

164 Abhay Kumar, Majeti Narsimha Vara Prasad (2014)Proteomic responses to lead-induced oxidative stress in *Talinum triangulare* Jacq. (Willd.) roots: Identification of key biomarkers related to glutathione metabolisms. Environ Sci Pollut Res (accepted)

163. Abin Sebastian and Prasad, M.N.V (2014) Red and blue lights induced oxidative stress tolerance promote cadmium rhizocomplexation in *Oryza Sativa*. Journal of Photochemistry and Photobiology: Biology B (on line)

162. Koelmel J, Prasad, M. N. V. and Pershell K (2014) Bibliometric Analysis of phytotechnologies for remediation: Global Scenario of Research and Applications. Int. J Phytoremediation (accepted)

161. Abin Sebastian, Prasad M.N.V. (2014) Cadmium minimization in rice. A review. Agronomy for Sustainable Development 34, 155-173

160. Galina Borisova, Nadezhda Chukina, Maria Maleva, Prasad, M.N.V. (2014) *Ceratophyllum demersum* L. and *Potamogeton alpinus* Balb. from Iset' river, Ural region, Russia differ in adaptive strategies to heavy metals exposure – a comparative study, Int. J Phytoremediation 16:621–633

159. Kacprzak M, Grobelak A, Grosser A, Prasad M.N.V. (2014) Efficacy of biosolids in assisted phytostabilization of metalliferous acidic sandy soils with five grass species. Int. J Phytoremediation 16: 593-608, DOI:10.1080/15226514.2013.79862

158. Abin Sebastian and Prasad, M.N.V (2014) Photosynthesis-mediated decrease in cadmium translocation protect shoot growth of *Oryza sativa* seedlings up on ammonium phosphate – sulfur fertilization. Environ Sci Pollut Res 21, 986-997

157. Meitei M.D., Prasad, M.N.V. (2014) Phoomdi – a unique plant biosystem of Loktak lake, Manipur, North-East India: Traditional and ecological knowledge. Plant Biosystems, http://dx.doi.org/10.1080/11263504.2013.870250

2013

156. Prasad, M.N.V. (2013) Metallophytes – Properties, Functions and Applications. The Botanica 62 & 63 : 17-26

155. Meitei,M.D., Prasad, M.N.V. (2013) "Phytotechnological applications of phoomdi, Loktak lake - Manipur, North-Eastern India". Current Science 105, (5)569-70

154. Lavu RVS, Schepper V D, Steppe K, Prasad, M.N.V., Tack F, Du Laing G (2013) Use of selenium fertilizers for production of Se-enriched Kenaf (*Hibiscus cannabinus*): Effect on Se concentration and plant productivity. J. Plant Nutr. Soil Sci. 176, 634-649

153. Lavu RVS, Prasad, M.N.V, Pratti VL, Meißner R, Rinklebe, Wiele TVD, Tack F, Du Laing G (2013) Trace metals Accumulation in Bacopa monnieri and their Bioaccessibiliy. Planta Medica 79(12), 1081-1083.

152. Maibam Dhanaraj MeiteiPrasad, M.N.V. (2013) Lead (II) and cadmium (II) biosorption on *Spirodela polyrhiza* L. Schleiden biomass. Journal of Environmental Chemical Engineering 1: 200-207

151. Maleva M, Borisova G, Chukina N, Nekrasova G, Prasad M.N.V. (2013) Influence of exogenous urea on photosynthetic pigments, $^{14}CO_2$ uptake and urease activity in *Elodea densa* – environmental implications. Environmental Science and Pollution Research 20:6172 – 6177

150. Sytar O, Cai Z, Brestic M, Kumar A, Prasad M.N.V, Iryna S (2013) Foliar applied nickel on buckwheat (*Fagopyrum esculentum*) induced phenolic compounds as potential antioxidants. Clean Soil, Air and Water 41, 1129–1137

149. Rao PS and Prasad M.N.V. (2013) *Strychnos nux-vomica Root* Extract Induces Apoptosiin the Human Multiple Myeloma Cell Line—U266B1. Cell Biochem Biophys. 66(3), 443-450

148. Oksana Sytar, Abhay Kumar, Dariusz Latowski, Paulina Kuczynska, Kazimierz Strzałka, M.N.V. Prasad (2013) Heavy metals induced oxidative damage, defence reactions and detoxification mechanisms in plants. Acta Physiologia Plantarum 35:985–999

147. Abhay Kumar, Prasad M.N.V., Achary V.M.M., Panda B.B.(2013) Elucidation of lead-induced oxidative stress in *Talinum triangulare* by analysis of antioxidant responses and DNA damage at cellular levels. Environmental Science and Pollution Research 20:4551 – 4561

146. Pratas J, Favas PJC, Paulo C, Rodrigues N, Prasad M.N.V. (2013) Temporal variation in the arsenic and metal accumulation in the maritime pine tree grown on contaminated soils. Int. J. Environ. Sci. Technol. 10:809–826

145. Abin Sebastian, Prasad M.N.V. (2013) Cadmium dependant expression and functioning of major quantitative loci of rice cultivars in alfisol and vertisol. Int. J Phytoremediation. 15: 965–978

144. Rima Kumari, Prasad M.N.V. (2013) Medicinal Plant Active Compounds Produced by UV-B Exposure. Sustainable Agriculture Reviews. 12, 225-25

143. Rajkumar M, Prasad M.N.V, Sandhya S, Freitas H (2013) Climate change driven plant-metal interactions. Envir International 53, 74-86

2012

142. Gude V, Kalpana K, Prasad M.N.V. Rao NSV (2012) Green Synthesis of Gold and Silver Nanoparticles Using *Achyranthes aspera* L. Leaf Extract. Advanced Science, Engineering and Medicine, 5, 223-228

141. Prasad M.N.V. & Rajendra Prasad (2012) Nature's cure for cleanup of contaminated environment – a review of bioremediation strategies. Reviews on Environmental Health 28, 181-189

140. Favas PJC, Pratas J, Prasad M.N.V. (2012) Accumulation of arsenic by aquatic plants in large-scale field conditions: Opportunities for phytoremediation and bioindication. The Science of the Total Environment 433: 390–397

139. Kumar A, Prasad M.N.V., Sytar O (2012) Lead toxicity, defense strategies and associated indicative biomarkers in *Talinum triangulare* grown hydroponically. Chemosphere 89, 1056-1065

138. Rajkumar M., Sandhya S, Prasad M.N.V. Freitas, H (2012) Perspectives of plant-associated microbes in heavy metal phytoremediation. Biotechnology Advances 30, 1562-1574

137. Saif M.M.S., Kumar N.S,, Prasad M.N.V. (2012) Binding of cadmium to *Strychnos potatorum* seed proteins in aqueous solution: Adsorption kinetics and relevance to water purification, Colloids Surf. B: Biointerfaces 94, 73-79

136. Anjum NA, Ahmad I, Mohmood I, Pacheco M, Duarte AC, Pereira E, Umar S, Ahmad A, Khan NA, Iqbal M, Prasad M.N.V. (2012) Modulation of glutathione and its related enzymes in plants' responses to toxic metals and metalloids - a review. Environmental and Experimental Botany 75, 307–324

135. Pratas J, Favas PJC, Paulo C, Rodrigues N, Prasad M.N.V. (2012) Uranium accumulation by aquatic plants from uranium contaminated water in Central Portugal. Int. J. Phytoremediation 14, 221–234

2011

134. Lalhruaitluanga, M.N.V. Prasad and K. Radha (2011) Potential of chemically activated and raw charcoals *of Melocanna baccifera* for removal of Ni(II) and Zn(II) from aqueous solutions-Isotherms and Kinetics. Desalination 271, 301–308

133. Ying Ma, Prasad MNV, Rajkumar M, Helena Freitas (2011) Plant growth promoting rhizobacteria and endophytes accelerate phytoremediation of metalliferous soils. Biotechnology Advances 29, 248-258

2010

132. Kumar A and Prasad M.N.V. (2010) Propagation of *Talinum cuneifolium* L. (Portulacaceae), an ornamental plant and leafy vegetable, by stem cuttings. Floriculture and Ornamental Biotechnology 4(SI1) 68-71.

131. Sukumaran S., Jeeva, S., Prasad M.N.V. (2010) Sacred forests of South Travancore of South India. BioDiCon 3 (3) 10-14

130. Meißner R, Prasad M.N.V., Du Laing G and Rinklebe J L(2010) Lysimeters application for measuring the water and solute fluxes with high precision. Current Science 99 (5) 601-607 [Impact factor 0.8]

129. Shuhe Wei, Qixing Zhou, Jie Zhan, Zhijie Wu, Tieheng Sun, Yelena Lyubu, Prasad M.N.V. (2010) Poultry manured *Bidens tripartite* L. extracting Cd from soil – potential for phytoremediating Cd contaminated soil. Bioresource Technology 101, 8907-8910 [Impact factor 4.253]

128. Saule Atabayeva, Batyrbek Sarsenbayev, Majeti Narashimha Vara Prasad, Jaime A. Teixeira da Silva, Shahizada Kenzhebayeva, Bakdaulet Usenbekov, Yerlan Kirshibayev, Saltanat Asrandina, Aizhan Beisenova, Alevtina Danilova, Yuryu Kotuhov (2010) Accumulation of Trace Metals in Grasses of Kazakhstan: Relevance to Phytostabilization of Mine Waste and Metal-smelting Areas. The Asian and Australasian Journal of Plant Science Biotechnology 4(1): 91-97

127. Shuhe Wei, Shanshan Wang, Qixing Zhou, Jie Zhan, Lihui Ma, Zhijie Wu, Tieheng Sun, Prasad MNV (2010) Potential of *Taraxacum mongolicum* Hand-Mazz for accelerating phytoextraction of cadmium in combination with eco-friendly amendments. Journal of Hazardous Materials 181, 480-484 [Impact factor 4.1]

126. Prasad MNV and Katiyar S.C. (2010) Drill cuttings and fluids of fossil fuel exploration in North-Eastern India : environmental concern and mitigation options. Current Science 98, (12): 1566-1569 [Impact factor 0.8]

125. Rajkumar M, Ae N, Prasad MNV, Freitas H, (2010) Potential of siderophore producing bacteria for improving heavy-metal phytoextraction. Trends in Biotechnology 28 (3): 142-149 [Impact factor 6.909]

124. Malec P, Maleva MG, Prasad MNV, Strzałka K (2010) Responses of *Lemna trisulca* L. Duckweed) exposed to low doses of cadmium: thiols, metal binding complexes and photosynthetic pigments as sensitive biomarkers of ecotoxicity. Protoplasma 240:69–74 [Impact factor 1.523]

123. Prasad MNV, Freitas H, Fraenzle S, Wuenschmann S, Markert B (2010) Knowledge explosion in phytotechnologies for environmental solutions. Environmental Pollution 158:18–23 [Impact factor 3.426]

122. Lalhruaitluanga H, Jayaram K, Prasad MNV and Kumar K.K. (2010) Lead(II) adsorption from aqueous solutions by raw and activated charcoals of *Melocanna baccifera* Roxburgh (bamboo) – A comparative study. J. Hazardous Materials. 175: 311–318 [Impact factor 4.1]

121. Raju N.L. and Prasad MNV (2010) Influence of Growth hormones on adventitious root formation in semihardwood cuttings of *Celastrus paniculatus* Willd. - A contribution for rapid multiplication and conservation management. Agroforestry Systems 79, 249-252 [Impact factor 1.016]

2009

120. Prasad M.N.V. & Jeeva S. (2009) Coal mining and its leachate are potential threats to *Nepenthes khasiana* (Nepenthaceae) that preys on insects - an endemic plant in north eastern India. BioDiCon 2(3): 29-33

119. Lalhruaitluanga H and Prasad MNV (2009) Genetic diversity assessment in *Melocanna baccifera* Roxb. growing in Mizoram State of India - Comparative results for RAPD and ISSR markers. African J. Biotechnology 8 (22): 6053-6062

118. Malec P, Maleva MG, Prasad MNV, Strzałka K (2009) Identification and characterization of Cd-induced peptides in *Egeria densa* (water weed): putative role in Cd detoxification Aquatic Toxicology, 95: 213–221

117. Maleva MG, Nekrasova GF, Malec P, Prasad MNV, Strzałka K (2009) Ecophysiological tolerance of *Elodea canadensis* to nickel exposure. Chemosphere 77, 393-398

116. Lalhruaitluanga H, Prasad MNV (2009). Traditional uses, economic importance and ecological services of *Melocanna baccifera* Roxb. in Mizoram, India. The Asian and Australasian Journal of Plant Science Biotechnology. 3(1), 1-6

115. Jeeva S, Kiruba S, Lalhruaitluanga H, Prasad MNV, Rao RR (2009) Flowering of *Melocanna baccifera* (Bambusaceae) in northeastern India. Current Science 96, 1165-1166

114. Padmalatha K, Jayaram K, Raju NL, Prasad MNV, Arora R (2009) Ethnopharmacological and Biotechnological Significance of *Vitex*. Bioremediation, Biodiversity and Bioavailability 3(1), 6-14

113. Jayaram K and Prasad MNV (2009) Removal of Pb(II) from aqueous solution by seed powder of *Prosopis juliflora* DC. J. Hazardous Materials 169, 991–997

112. Rajkumar M, Prasad MNV, Freitas H, Ae N (2009) Biotechnological Applications of Serpentine Soil Bacteria for Phytoremediation of Trace metals. Critical Reviews in Biotechnology 29(2), 120–130

111. Jayaram K. Murthy IYLN, Lalhruaitluanga H, Prasad MNV (2009) Biosorption of lead from aqueous solution by seed powder of *Strychnos potatorum* L. Colloids and Surfaces B: Biointerfaces 71, 248–254

110. Kanoun-Boulé M, Vicente JAF, Nabais C, Prasad MNV, Freitas H (2009) Ecophysiological tolerance of duckweeds exposed to copper. Aquatic Toxicology 91, 1-9

109. Malec P, Maleva M, Prasad MNV, Strzałka K (2009) Copper Toxicity in Leaves of *Elodea canadensis* Michx. Bull Envir Contam Toxicol. 82: 627-632

108. Rao PS, Prasad MNV and Ramanadham M (2009) Anti-proliferative and cytotoxic effects of *Strychnos nux-vomica* root extract on human multiple myeloma cell line - RPMI 8226. Food and Chemical Toxicology 47, 283–288

107. Aravind P., Prasad MNV, Malec P, Waloszek A and Strzalka K (2009) Zinc protects *Ceratophyllum demersum* L., (free floating hydrophyte) against reactive oxygen species induced by cadmium. J Trace Elements in Medicine and Biology 23, 50–60

2008

106. Malec P, Waloszek A, Prasad MNV, Kazimierz Strzalka K (2008) Zinc reversal of cadmium-induced energy transfer changes in photosystem II of *Ceratophyllum demersum* L. as observed by Whole-leaf 77K fluorescence. Plant Stress 2, 121-26.

105 Padmalatha K and Prasad MNV (2008) Genetic Diversity in *Centella asiatica* (L.) Urb.a Memory-Enhancing Neutraceutical Herb, using RAPD Markers. *Medicinal and Aromatic Plant Science and Biotechnology* 2 (2), 90-95.

104. Prasad MNV, Rajkumar M, Freitas H (2008). Rehabilitation of abandoned minesites: connection to bioprospecting of metal tolerant plants and phytoassisted rhizoremediation. Palaeobotanist. 58, 559-571

103. Padmalatha K, Prasad MNV (2008) *In vitro* plant regeneration of *Pterocarpus santalinus* L.f (Red Sanders) – An Endangered Medicinal Plant and Important Timber Tree. *Tree and Forestry Science and Biotechnology* 2, 1-6

102. Padmalatha, K. Jayaram K, and Prasad M.N.V (2008) A Rapid Protocol for the Isolation of polysaccharide- and polyphenolic-free genomic DNA for RAPD analysis of threatened medicinal plants. *Medicinal and Aromatic Plant Science and Biotechnology* 2, 50-53

101. Rao PS, and Prasad MNV (2008) Extraction, Purification and Characterization of Indole alkaloids from the south indian *Strychnos wallichiana* L. – an endangered medicinal plant. *Medicinal and Aromatic Plant Science and Biotechnology* 2, 63-67

100. Jayaram K and Prasad MNV (2008) Rapid *in vitro* multiplication of *Drosera burmanii* Vahl.: A vulnerable and medicinally important insectivorous plant. *Indian Journal of Biotechnology* 7, 260-265

99. *Jayaram K and Prasad MNV (2008) Genetic diversity in* Oroxylum indicum *(L.) Vent. (Bignoniaceae), a vulnerable medicinal plant by random amplified polymorphic DNA marker.* African Journal of Biotechnology. 7, 254-262

98. Kuriakose SV, Prasad MNV (2008) Cadmium stress affects seed germination and seedling growth in *Sorghum bicolor* (L.) Moench by changing the activities of hydrolyzing enzymes. *Plant Growth Regulation* 54, 143-156

2007

97. Padmalatha K, Prasad MNV (2007) Morphological and molecular diversity in *Pterocarpus santalinus* L.f - an endemic and endangered medicinal plant. *Medicinal and Aromatic Plant Science and Biotechnology* 1, 263-273

96. Prasad MNV, Padmalatha K, Jayaram K, Raju N.L and Teixeira da Silva J (2007) Medicinal plants from deccan ecoregion, India - traditional knowledge ethnophamacology, cultivation, utilization, biotechnology and conservation. *Medicinal and Aromatic Plant Science and Biotechnology* 1, 155-208

95. Sagyndyk KS, Aidossova SS, Prasad MNV (2007) Grasses tolerant to radionuclides growing in kazakhstan nuclear test sites exhibit structural and ultrastructural changes - implications for phytoremedaition and involved risks. *Terrestrial and Aquatic Ecotoxicology* 1, 70-77

94. Nirupa N, Prasad MNV, Jami SK, Kirti PB (2007) Optimization of *Agrobacterium*-mediated overexpression of osmotin-ferritin genes in *Brassica juncea*. *Transgenic Plant Journal* 1, 384-392

93. Padmaltha K and Prasad MNV (2007) Seed germination studies in *Pterocarpus santalinus* L.f – an endangered and endemic medicinal plant, and relevance to conservation. *Seed Science and Biotechnology* 1, 32-34

92. Prasad, MNV and Nirupa N (2007) Phytoferritins - implications for human health and nutrition. *The Asian and Australasian J. of Plant Science and Biotechnology* 1, 1-9

91. Jayaram K and Prasad MNV (2007) Rapid *in vitro* multiplication of *Drosera indica* L.- vulnerable, medicinally important insectivorous plant. *Plant Biotechnol Rep* 1,79–84 [Impact factor 1.167]

90. Padmalatha K and Prasad MNV (2007) Inter- and intrapopulation genetic diversity of *Rauvolfia serpentina* (L.) Benth. ex Kurz. an endangered medicinal plant, by RAPD analysis.*Medicinal andAromatic Plant Science and Biotechnolog* 1,118-123

89. Raju NL and Prasad MNV (2007) Cytokinin-induced high frequency shoot multiplication in *Celastrus paniculatus* Willd. a red listed medicinal plant. *Medicinal and Aromatic Plant Science and Biotechnology* 1, 133-137.

88. Raju NL and Prasad MNV (2007) Genetic diversity analysis of *Celastrus paniculatus* willd.by RAPD Markers - a nearly threatened, cognitive and intelligence enhancer *Functional Plant Science and Biotechnology* 1, 195-199.

87. Prasad MNV (2007) Sunflower (*Helianthus annuus* L.) - a potential crop for environmental industry. *Helia* 30, 167-174

2006

86. Jayaram K and Prasad MNV (2006) *Drosera indica* L. and *D.burmanii* Vahl. medicinally important insectivorous plants in Andhra Pradesh – regional threats and conservation. *Current Science* 91, 943-946

85. Prasad MNV (2006) Trace elements in medicinal plants: environmental quality and human health concerns. *Ecological engineering* 16: 56-58, Warsaw.

84. Padmalatha K and Prasad MNV (2006) Genetic diversity in *Rauvolfia tetraphylla* L. using RAPD markers. *J. Plant Biotechnology* 8, 1-7

83. Mishra S, Srivastava S, Tripathi, RD, Govindarajan R, Kuriakose SV and Prasad MNV (2006) Phytochelatin synthesis and responses of antioxidants during cadmium stress in *Bacopa monneri* L. *Plant Physiology and Biochemistry* 44, 25-37 [Impact factor 2.485].

82. Padmalatha K and Prasad MNV (2006) Optimization of DNA isolation and PCR protocol for RAPD analysis of selected medicinal and aromatic plants of conservation concern from Deccan ecoregion of India. *African Journal of Biotechnology* 5, 230-234.

2005

81. Jayaram K and Prasad MNV (2005) Rapidly *in vitro* multiplied *Drosera* as reliable source for plumbagin bioprospection. *Current Science* 89, 447-448

80. Prasad MNV (2005) Nickelophilous plants and their significance in phytotechnologies. *Brazilian J. Plant Physiol*.17, 113-128

79. Aravind P and Prasad, MNV (2005) Modulation of cadmium-induced oxidative stress in *Ceratophyllum demersum* by zinc involves ascorbate-glutathione cycle and glutathione metabolism, *Plant Physiol. Biochem* 43, 107-116 [Impact factor 2.485].

78. Aravind P and Prasad, MNV (2005) Cadmium-Zinc interactions in hydroponic system using *Ceratophyllum demersum*: adaptive plant ecophysiology, biochemistry and molecular toxicology. *Brazilian J Plant Physiology* 17, 3-20

77. Aravind P and Prasad, MNV (2005) Zinc meadiated protection to the conformation of carbonic anhydrase in cadmium exposed C*eratophyllum demersum* L. *Plant Science* 169: 245-254 [Impact factor 2.485]

76. Aravind P and Prasad, MNV (2005) Cadmium induced toxicity reversal by zinc in *Ceratophyllum demersum* L. (a freshwater macrophyte) together with exogenous supplements of amino acids and and organic acids. *Chemosphere* 61: 1720-1733 [Impact factor 3.253]

75. Devi SR and Parsad MNV (2005) Antioxidant capacity of *Brassica juncea* plants exposed to elevated levels of copper. *Russian J Plant Physiol.* 51, 233-237.

74. Kari Taulavuori, Prasad MNV, Erja Taulavuori, Kari Laine (2005) Metal stress consequences on frost hardiness of plants at northern high latitudes: a review and hypothesis. *Environmental Pollution* 135, 209-220 [Impact factor 3.426]

73. Gratão PL, Prasad MNV, Lea PJ and Azevedo RA (2005) Phytoremediation: green technology for the clean up of toxic metals in the environment.*Brazilian J Plant Physiology* 17,53-64

72. Pratas J, Prasad MNV, Freitas H and Conde L (2005) Plants growing in abandoned mines of Portugal are useful for biogeochemical exploration of arsenic, antimony, tungsten and mine reclamation. *Journal of Geochemical Exploration* 85, 99-107

2004

71. Pratas J, Prasad MNV, Freitas H, and Conde L (2004) *Pinus pinaster* Aiton (maritime pine): a reliable indicator for delineating areas of anomalous soil composi-tion for biogeochemical prospecting of As (Arsenic), Sb (Antimony)and W (Tungsten). *European J Mineral Processing & Envir Protection* 4, 136-143

70. Kumar GP and Prasad MNV (2004) Cadmium accumulation and adsorption by *Ceratophyllum demersum* L.: a fresh water macrophyte. *European J. Mineral Processing & Envir Protection* 4,95-101

69. Kumar GP and Prasad MNV (2004) Photosynthetic pigments and gaseous exchange in cadmium exposed *Ceratophyllum demersum* L. (a freshwater macrophyte) – a model for hormesis. *J Plant Biology* 31, 1-8

68. Aavind P and Prasad, MNV (2004) Zinc protects chloroplasts and associated photochemical functions in cadmium exposed *Ceratophyllum demersum* L. a freshwater macrophyte. *Plant Science* 166, 1321-1327 [Impact factor 2.485]

67. Aravind P and Prasad, MNV (2004) Carbonic anhydrase impairment in cadmium-treated *Ceratophyllum demersum* L.(free floating freshwater macrophyte): toxicity reversal by zinc*. J. Analytical Atomic Spectrophotometry* 19, 52-57 [Impact factor 4.03]

66. Freitas H, Prasad MNV and Pratas J (2004). Plant community tolerant to trace elements growing on the degraded soils of São Domingos mine in the south east of Portugal: environmental implications. *Environment International* 30:65-72 [Impact factor 4.786]

65. Freitas H, Prasad MNV and Pratas J (2004) Analysis of serpentinophytes from north- east of Portugal for trace metal accumulation – relevance to the management of mine environment. *Chemosphere* 54*:* 1625-1642 [Impact factor 3.253]

64. Prasad MNV 2004) Phytoremediation of metals in the environment for sustainable development. *Proc Indian Nanl Sci Acad* 70 : 71-98

63. Kumar GP and Prasad MNV (2004) Cadmium toxicity to *Ceratophullum demersum* L.: Morphological symptoms, membrane damage and ion leakage. *Bull Envir Contam Toxicology* 72:1038-1045 [Impact factor 0.992]

62. Kumar GP and Prasad MNV (2004) Cadmium-inducible Proteins in *Ceratophyllum demersum* L. (a fresh water macrophyte): Toxicity bioassays and relevance to cadmium detoxification. *Bull Envir Contam Toxicology* 73:174-181 [Impact factor 0.992]

2003

61. Prasad MNV and H Freitas (2003) Metal hyperaccumulation in plants – Biodiversity prospecting for phytoremediation technology. *Electronic J. of Biotechnology* 6(3): 275-321 http://www.ejbiotechnology.info/content/vol6/issue3/index.html.[Impactfactor 0.59]

60. Prasad MNV (2003) Phytoremediation of metal-polluted ecosystems: Hype for commercialization. *Russian J Plant Physiology* 50(5): 686-701

59. Aravind P and Prasad MNV (2003) Zinc alleviates cadmium induced toxicity in *Ceratophyllum demersum*, a fresh water macrophyte. *Plant Physiol and Biochem* 41: 391-397 [Impact factor 2.485]

2001

58. Prasad MNV, Malec P, Waloszek, A, Bojko, M.and K.Strzalka (2001) Physiological responses of *Lemna trisulca* L. (Duckweed) to cadmium and copper bioaccumulation. *Plant Sciences* 161: 881-889 [Impact factor 2.485].

57. Prasad MNV, Greger M and Landberg, T (2001) *Acacia nilotica* L. bark removes toxic metals from solution: Corroboration from toxicity bioassay using *Salix viminalis* L. in hydroponic system. *Int J Phytoremediation* 3: 289-300 [Impact facor 1.321]

56. Rama Kumar T and Prasad MNV (2001) Probable involvement of calcium/ calmodulin dependent kinase(s) in phosphorylation of ferritin in *Vigna mungo* (L.) Hepper (Black Gram). *J Plant Biology* 28:1-5 [Impact factor 2.5].

55. Nagalakshmi N and Prasad MNV (2001) Responses of glutathione cycle enzymes and glutathione metabolism to copper stress in *Scenedesmus bijugatus*. *Plant Science* 160: 291-299 [Impact factor 2.485].

2000

54. Rama Kumar, T and Prasad MNV (2000) Partial purification and characterization of Ferritin from *Vigna mungo* (Black gram) seeds. *J. Plant Biology* 27: 241-246.

53 Prasad MNV and H Freitas (2000) Removal of toxic metals from the aqueous solution by the leaf, stem and root phytomass of *Quercus ilex* L. (Holly Oak) *Environmental Pollution* 110: 277-283 [Impact factor 3.426]

52. Rama Kumar, T and Prasad MNV (1999) Ferritin induction by iron mediated oxidative and ABA in *Vigna mungo* (L.) Hepper seedlings: Role of antioxidants and free radical scavengers. *J. Plant Physiol*. 155: 652-655.[

51. Prasad MNV and Freitas H (1999) Feasible biotechnological and bioremediation strategies for serpentine soils and mine spoils. Electronic J. Biotechnology 2 (1): 36-50 http://www. ejbiotechnology.info/content/vol2/issue1/full/5/index.html. [Impact factor 0.59]

50. Rama Kumar T and Prasad MNV (1999) Metal-binding properties of ferritin in *Vigna mungo* (L.) Hepper (Black gram): Possible role in heavy metal detoxification. *Bull Envir Contam Toxicol*. 62: 502-507 [Impact factor 0.992].

49. Nagalakshmi, N and Prasad MNV (1998) Copper-induced oxidative stress in *Scenedesmus bijugatus* - protective role of free radical scavengers.*Bull.Envir.Contam.Toxicol*. 61: 623-628 [Impact factor 0.992].

48. Devi SR and Prasad MNV (1998) Copper toxicity in *Ceratophyllum demersum* L. (Coontail) a free floating macrophyte: responses of antioxidant enzymes and antioxidants. *Plant Science* 138: 157-165 [Impact factor 2.485].

47. Prasad MNV (1998) Metal-biomolecule complexes in plants: occurrence, functions and applications. *Analusis* 26: 25-28

46. Prasad MNV and Z. Rengel (1998) Plant acclimation and adaptations to natural and anthropogenic stress. In: Proc. Stress of Life - Adaptations from molecules to man. (ed) P. Csermely. *Ann. N.Y. Acad. Sci.* 851: 216-223.

45. Prasad MNV, Drej K, Skawinska A and Strzalka K (1998) Toxicity of cadmium and copper in *Chlamydomonas reinhardtii* wild-type (WT 2137) and cell wall deficient mutant strain (CW15). *Bull. Envir. Contam. Toxicol*. 60: 306-311 [Impact factor 0.992].

44 Devi SR and Prasad MNV (1996) Influence of ferulic acid on photosyn-thesis of maize:analysis of CO_2 assimilation, electron transport activities, fluorescence emission and photophosphorylation. *Photosynthetica* 32:117-127 [Impact factor 1.072].

43. Devi SR and Prasad MNV (1996) Ferulic acid mediated changes in oxidative enzymes of maize seedlings: Implications in growth. *Biologia Plantarum* 38: 387-395 [Impact factor 1.656]

42. Prasad MNV (1995) Cadmium toxicity and tolerance to vascular plants. *Envir. Exp. Bot.* 35: 525-545. [Impact factor 3.164]

41. Prasad MNV (1995) Analysis of Leucaena mimosine and *Acacia tannins* and polyphenols by near infrared reflectance spectroscopy. *Biomass and Bioenergy* 8: 203-205 [Impact factor 3.326]

40. Prasad MNV (1995) Inhibition of maize leaf chlorophylls, carotenoids and gas exchange functions by cadmium. *Photosynthetica* 31: 635-640 [Impact 1.072]

39. Reddy GN and Prasad MNV (1995) Cadmium-induced proteins and protein phosphorylation changes in rice (*Oryza sativa* L.).*J. Plant Physiol*. 145: 67-70 [Impact factor 2.5]

38. Seshagirirao K and Prasad MNV (1995) Purification and partial characterization of a lectin from *Euphorbia neriifolia* latex. *Biochem. and Molec. Biol. Int*. 35: 1199-1204.

37. Reddy GN and Prasad MNV (1994) Cadmium toxicity to *Scenedsmus quadricauda* Proteins and protein phosphorylation changes. *Biochem. Arch.* 10: 185-188.

36. Prasad MNV and Subhashini P (1994) Mimosine inhibited seed germination, seedling growth and enzymes of *Oryza sativa* L. *J. Chem. Ecol.* 20: 1689-1696 [Impact factor 2.411]

35. Prasad MNV and Saytasree JG (1994) a-naphthalene acetic acid regulated anthocyanins, polyphenols and associated enzymes in *Euphorbia heterophylla* L. seedling explant cultures. *J. Plant Biochem. Biotechnol*. 3: 69-72. [Impact factor 2.485].

34. Prasad MNV (1993) Bioresource potential of *Sesbania bispinosa* (Jacq.) WF Wight. *Bioresource Technol*. 44: 251 254. [Impact factor 4.253]

33. Reddy GN and Prasad MNV (1993) Tyrosine is not phosphorylated in cadmium- induced HSP cognate in maize (*Zea Mays* L.) seedlings: Role in chaperone function ? *Biochem. Arch*.9: 25-32.

32. Devi SR and Prasad MNV (1992) Effect of ferulic acid on the growth and hydrolytic enzymes of germinating maize (*Zea mays* L.) seeds. *J. Chem. Ecol*. 18: 1981-1990 [Impact factor 2.411]

31. Reddy GN and Prasad MNV (1992) Chraracterization of cadmium binding protein from *Scenedesmus quadricauda* and Cd toxicity reversal by phyto-chelatin constituting amino acids and citrate. *J. Plant. Physiol*. 140: 156-162 [Impact factor 2.5].

30. Reddy GN and Prasad MNV (1992) Cadmium-induced potassium efflux from *Scenedesmus quadricauda*. *Bull. Envi. Contam. Toxicol.* 49: 600-605 [Impact factor 0.992]

29. Reddy GN and Prasad MNV (1992) Cadmium-induced peroxidase activity and isozymes in *Oryza sativa*. *Biochem. Arch*. 8: 101-106 .

28. Rao GVR and Prasad MNV (1991) Plantlet regeneration from hypocotyl callus of *Acacia auriculiformis*-Multipurpose legume.*J. Plant. Physiol.* 137: 625-627 [Impact factor 2.5].

27. Devi SR and Prasad MNV (1991) Tannins and related polyphenols from common *Acacia* species of India. *Bioresource Tech*. 36: 189-192. [Impact factor 4.253]

26. Prasad MNV (1991) Performance of 3 years old nitrogen and non-nitrogen fixing plants on Nelder's de-sign in Hyderabad, Deccan region of India. *Nitrogen Fixing Tree Res. Rep*. 9: 14-16.

25. Reddy GN and Prasad MNV (1990) Heavy metal binding proteins/petides: Occurrence structure, synthe-sis and functions.A review. *Envir. Exp.Bot*.30: 251-264. [Impact factor 3.164]

24. Devi SR and Prasad MNV (1990) Phytotoxicity of *Acacia nilotica* pod phenolics: in vitro bioassays. *Biochem. Arch*. 6: 75-81

23. Reddy GN and Prasad MNV (1989) Nutrient enrichment and primary production in Banjara lake, Hyderabad, India: Comparison of filtration and acidification bubbling method. *J. Freshwater Ecol*. 5: 39-43

22. Neogi B, Prasad MNV and Rao RR (1989) Ethnobotany of some weeds of Khasi and Garo Hills, Meghalaya, North Eastern India. *Econ. Bot*. 43: 471- 479 [Impact factor 0.889]

21. Prasad MNV and Rajeswar J (1989) Carbondioxide assimilation in leaves and pods of *Leucaena lecucocephala* with remarks on its productivity and phytomass composition. *Leucaena Res. Rep*. 10: 35-39

20. Prasad MNV and Rajeswar J (1989) Productivity, phytomass characteristics, nutrient uptake and use efficiency of *Sesbania bispinosa* on marginal soils of the deccan region of India. *Nitrogen Fixing Tree Res Rep* 7: 120-122

19. Seshagirirao K and Prasad MNV (1989) *Monadenium heteropodum* N.E.Br (Euphorbiaceae) `an exotic in the process of naturalisation in India. *Excelsa* 14: 135-137

18. Reddy GN and Prasad MNV (1989) Cadmium inducible proteins in *Scenedesmus quadricauda. Curr. Sci*. 58: 1380-1381

17. Prasad MNV (1988) Ecological and archaeological aspects of Holocene deposits of Tripura State, North Eastern India. *Proc. Indian. Natn. Acad. Sci*. 54: 452-460

16. Seshagirirao K and Prasad MNV (1988) Typology of latex starch grains of certain Euphorbiaceae and their possible significance in systematics *Plant Systematics and Evolution* 160: 189-193 [Impact factor 1.41]

15. Reddy, G.N. and Prasad MNV (1988) Seasonal nutrient status of Banjara lake Hyderabad. *Proc. Indian Acad. Sci*. 98: 515-522

14. Seshagirirao, K. and Prasad MNV (1987) Nomenclature notes on *Chamaesyce* of the Indian subcontinent. *Taxon* 36: 761-762

13. Prasad MNV (1986) Fungal remains from the Holocene peat deposits of Tripura State, North Eastern India. *Pollen et Spores* 28: 365-390.

12. Prasad MNV (1986) Xylotaphoflora of the Kamthi Formation, Indian Lower Gondwana with remarks on the biostratigraphic importance of its taphoflora. *Palaeontographica* 210: 111-134 [Impact factor 1.37]

11. Prasad MNV and Ramesh, N.R. (1984) First record of *Circinoconi*s conidia from the Holocene formation of Tripura, India. *Curr. Sci.* 53: 38-39

10. Prasad MNV and Lele KM (1984) Triassic ginkgoalean wood from the South Rewa Gondwana Basin, India. *Rev. Palaeobot. Palynol*. 40: 387-397

9. Prasad MNV and Ramesh NR (1983) Fungal spores from the Holocene sediments of Tripura, India. *Curr. Sci*. 52: 254-256.

8. Prasad MNV (1982) An annotated synopsis of Indian Palaeozoic gymnospermous woods. *Rev. Palaeobot. Palynol*. 38: 119-156.

7. Prasad MNV (1981) New species of fossil wood *Planoxylon* from late Palaeozoic of Irian Jaya, Indonesia. *Bull. Geol. Res. Dev. Ctr*. 5: 37-40.

6. Prasad MNV and Chandra S (1981) Two species of *Australoxylon* from the Kamthi Formation of Chandrapur District, Maharashtra. *Geophytology* 11: 1-5

5. Chandra S and Prasad MNV (1981) Fossil plants from the Kamthi Formation of Maharashtra and their biostratigraphic significance. *Palaeobotanist* 28-29: 99-121.

4. Prasad MNV and Chandra S (1980) *Palaeospiroxylon* - a new gymnospermous wood from Raniganj coalfield, India. *Palaeobotanist* 26: 230-236

3. Chandra S and Prasad MNV (1979) Two new species of *Zalesskioxylon* from Kamthi formation. *Phyta* 2-3: 1-10.

2. Prasad MNV and Chandra S (1978) First record of *Taxopitys* from the India Lower Gondwana. *Curr. Sci*. 47: 347.

1. Prasad MNV and Chandra S (1978) *Australoxylon* from the Kamthi beds of Lower Gondwana, India. *Curr. Sci*. 47: 597.

Section 2: Books chapters and conference proceedings (reverse chronology)

88. Maibam Dhanaraj Meitei[1], Abhay Kumar[1], M.N.V. Prasad[1*], Przemysław Malec[2], A. Waloszek[2], Maria G. Maleva[3], Kazimierz Strzałka[2] (2014) Photosynthetic pigments and pigment-protein complexes of aquatic plants under heavy metal stress. In, *Tamara K. Golovko, Wieslaw I. Gruszecki, M.N.V. Prasad, Kazimierz Strzalka*. Eds. , Photosynthetic pigments – chemical, biological and ecological functions" Syktyvkar: Komi Sci. Ctr.,Russia 2014.

87. Rima Kumari, M.N.V. Prasad, Andrzej Waloszek, Kazimierz Strzalka(2013) Structural and functional aspects of photosynthetic apparatus under UV-B stress. In, *Tamara K. Golovko, Wieslaw I. Gruszecki, M.N.V. Prasad, Kazimierz Strzalka*. Eds. , Photosynthetic pigments – chemical, biological and ecological functions"Syktyvkar: Komi Sci. Ctr., Russia 2014.

86. Abhay Kumar, Abin Sebastian, M.N.V. Prasad, Przemyslaw Malec, Kazimierz Strzalka (2014) Functional tuning of photosynthetic pigments in response to trace elements. In, *Tamara K. Golovko, Wieslaw I. Gruszecki, M.N.V. Prasad, Kazimierz Strzalka*. Eds. , Photosynthetic pigments – chemical, biological and ecological functions"Syktyvkar: Komi Sci. Ctr., Russia 2014.

85. Mirza Hasanuzzaman, Kamrun Nahar, Masayuki Fujita, Parvaiz Ahmad, Ruby Chandna, M.N.V. Prasad, and Munir Ozturk (2013) Enhancing Plant Productivity Under Salt Stress: Relevance of Poly-omics, In Parvaiz Ahmad, Azooz, M.M. & Prasad MNV Eds: Salt Stress in Plants: Signaling, Omics and Adaptations. Springer 2013

84. Prasad, M.N.V. (2012) Exploitation of Weeds and Ornamentals for Bioremediation of Metalliferous Substrates in the Era of Climate Change. In P. Ahmad and M.N.V. Prasad (eds.), *Environmental Adaptations and Stress Tolerance of Plants in the Era of Climate Change*, DOI 10.1007/978-1-4614-0815-4_23, Springer

83. Malec P, Mysliwa-Kurdziel B, Prasad MNV, Waloszek A and Strzałka K (2011) Role of Aquatic Macrophytes in BiogeochemicalCycling of Heavy Metals – Relevance to Soil: Sediment Continuum Detoxification andEcosystem Health. In, I. Sherameti and A. Varma (eds.), Detoxification of Heavy Metals, Soil Biology 30, Springer-Verlag Berlin Heidelberg. DOI 10.1007/978-3-642-21408-0_18.

82. Prasad, MNV, Padmalatha K., Jayaram K., and Raju NL (2010). Relevance of biotechno-logical tools for conservation of plant resources. In A. Ahmad, T .O. Siddiqi, M. Iqbal (eds.), Medicinal Plants in Changing Environment Capital Publishing Company, New Delhi, India. Pp. 213-246.

81. João Pratas, Paulo Favas, Nelson Rodrigues, MNV Prasad (2010) Arsenic accumulation in aquatic plants (Central Portugal) *Advances In Waste Management* 73-76

80. João Pratas, Paulo Favas, Nelson Rodrigues, MNV Prasad and Helena Freitas (2010) Phyto- filtration of uranium by aquatic plants of Central Portugal. *Advances In Waste Management* 77-80, 2010

79. Prasad MNV (2008) Trace elements in traditional healing plants - remedies or risks, In. M.N.V. Prasad MNV (ed) *Trace elements as contaminants and nutrients: consequences in ecosystems and human health*. John Wiley and Sons Inc. New York. pp. 137-160

78. Prasad MNV (2008) Biofortification: nutritional security and relevance to human health, In. M.N.V. Prasad (ed) *Trace elements as contaminants and nutrients: consequences in ecosystems and human health*. John Wiley and Sons Inc. New York. pp. 161-182

77. Prasad MNV (2008) Essentiality of zinc for human health and sustainable development , In. M.N.V. Prasad (ed) *Trace elements as contaminants and nutrients: consequences in ecosystems and human health*. John Wiley and Sons Inc. New York. pp. 183-216

76. Nirupa N. and. Prasad MNV (2008) Iron bioavailability, homeostasis through phytoferritins and fortification strategies - implications for human health and nutrition. In, M.N.V. Prasad (ed) *Trace elements as contaminants and nutrients: consequences in ecosystems and human health.* John Wiley and Sons Inc. New York. pp. 233- 266

75. Sagyndyk KS, Aidossova SS, Prasad MNV (2008) Floristic composition at Kazakhstan's Semipalatinsk nuclear test site: relevance to the containment of radionuclides to safeguard ecosystems and human health. In, M.N.V. Prasad (ed) *Trace elements as contaminants and nutrients: Consequences in ecosystems and human health.* John Wiley and Sons Inc. New York. pp. 281-xxx

74. Kuriakose SV and Prasad MNV (2008) Cadmium as an environmental contaminant: Consequences to plant and human health, In. M.N.V. Prasad (ed) *Trace elements as contaminants and nutrients: consequences in ecosystems and human health*. John Wiley and Sons Inc. New York . pp 373-412

73. Manoel BA, Kanoun-Boulé M, Freitas H, Prasad MNV (2008) *Erica andevalensis* – Potential use for phytoremediation of the abandoned copper mine of São Domingos, Portugal. Proc. of the Joint Conference of the 6th international Ascid sulfate Soil Conference and the Acid Rock Drainage Symposium. Edited by Chuxia Un, Shaowei Huang and Yongtao U Guangdong Press Group Guangdong Science & Technology Press. Guangzhou, P. R. China. Pp 20-23.

72. Nirupa, N., Prasad MNV, and Kirti P.B. (2008) Expression of pea seed ferritin cDNA in indian mustard nutritional value and oxidative stress tolerance of the transformants. In, G. Banuelos and ZQ Lin Eds. "Development and Uses of Biofortified Agricultural Products" CRC Pres/Taylor and Francis. Pp. 205-220

71. Prasad MNV (2007) Aquatic plants for phytotechnology. In, *Environmental Bioremediation Technologies*. Eds SN Singh and RD Tripathi.pp. 259-274. Springer

70. Prasad MNV (2007) Phytoremediation in India, In: *Phytoremediaiton – Methods and Reviews*. Ed. Neil Willey. Humana Press, Totowa, NJ, USA. Pp. 435-454

69. Prasad MNV (2006) Urban stormwater management through sustainable urbandrainage systems - a unified approach through constructed wetland using macrophytes. *Proc. of the 22nd National Convention of Envir Engineers & national seminar on Rainwater harvesting and water management.* Nagpur. Pp.355-364

68. Jayaram K and Prasad MNV (2006) Plumbagin – a phytotherapeutically important compound. *In, Hebal drugs – a twenty first century perspective.* Eds. RK Sharma and R Arora . Jaypee Brothers. New Delhi. Pp. 445-449

67 Padmalatha K and Prasad MNV (2006) *Pterocarpus santalinus* L.f. and *P.marsupium* Roxb.- potential source of phytomedicine. *In, Hebal drugs – a twenty first century perspective.*Eds. RK Sharma and R Arora . Jaypee Brothers. New Delhi. Pp. 450-459

66. Prasad, MNV, Padmalatha K., Jayaram, K and Raju N.L. (2006) Healing plants of Andhra Pradesh – Indigenous knowledge, trade, threats and conservation strategies. *Proc. A.P. Akademi of Sciences, Hyderabad* 11: 109-120

65. Prasad MNV (2006) Plant metallothionein genes and genetic engineering for the cleanup of toxic trace elements. In, M.N.V Prasad, K.S.Sajwan, and Ravi Naidu (Eds) Trace elements in the environment: Biogeochemistry, Biotechnology and Bioremediation. CRC Press, Florida, USA (Taylor and Francis) Chap. 14, pp. 253-270

64. Prasad MNV (2006) "Metallomics" - a multidisciplinary metal assisted functional biogeochemistry – scope and limitations. In, M.N.V Prasad, K.S.Sajwan, and Ravi Naidu (Eds) Trace elements in the environment: Biogeochemistry, Biotechnology and Bioremediation. CRC Press, Florida, USA (Taylor and Francis) Chap. 15, pp. 271-289

63. Shaw BP, Prasad MNV, Jha VK and Sahu BB (2006) Detoxification and defense mechanisms in metal exposed plants. In, M.N.V Prasad, K.S.Sajwan, and Ravi Naidu (Eds) (2005) Trace elements in the environment: Biogeochemistry, Biotechnology and Bioremediation. CRC Press, Florida, USA (Taylor and Francis) Chap. 16, pp. 291-324

62. Prasad MNV (2006) Stabilization, remediation and integrated management of metal-contaminated ecosystems by grasses (Poaceae) In, M.N.V. Prasad, K.S.Sajwan, and Ravi Naidu (Eds) Trace elements in the environment: Biogeochemistry, Biotechnology and Bioremediation. CRC Press, Florida, USA (Taylor and Francis) Chap. 21, pp. 405-424

61. Bashmakov D.I.,.Lukatkin A.S, and Prasad MNV (2006) Temperate weeds in Russia serve as sentinels for monitoring trace element pollution.. In, M.N.V Prasad, K.S.Sajwan, and Ravi Naidu (Eds)Trace elements in the environment: Biogeochemistry, Biotechnology and Bioremediation. CRC Press, Florida, USA (Taylor and Francis) Chap 23, pp. 439-450

60. Prasad MNV, Maria Greger and P. Aravind. (2006) Biogeochemical cycling of trace elements by aquatic and wetland plants: relevance to phytoremediation. In, M.N.V Prasad, K.S.Sajwan, and Ravi Naidu (Eds) Trace elements in the environment: Biogeochemistry, Biotechnology and Bioremediation. CRC Press, Florida, USA (Taylor and Francis) Chap. 24, pp. 451-482

59. Prasad MNV, Freitas H. (2006) Metal tolerant plants - Biodiversity prospecting for promoting phytoremediation technologies. In, M.N.V Prasad, K.S.Sajwan, and Ravi Naidu (Eds) Trace elements in the environment: Biogeochemistry, Biotechnology and Bioremediation. CRC Press, Florida, USA (Taylor and Francis) Chap. 25, pp. 483--506

58. Prasad MNV, Freitas H, Pratas J. (2006) Trace elements in plants and soils of abandoned mines from Portugal:Significance for phytomanagement and biogeochemical prospecting. In, M.N.V Prasad, K.S.Sajwan,

and Ravi Naidu (Eds) Trace elements in the environment: Biogeochemistry, Biotechnology and Bioremediation. CRC Press, Florida, USA (Taylor and Francis) Chap. 26, pp. 507-521

57. Prasad MNV (2006) Plants that accumulate and/or exclude toxic trace elements play an important role in phytoremediation. In, M.N.V Prasad, K.S.Sajwan, and Ravi Naidu (Eds) (2005) Trace elements in the environment: Biogeochemistry, Biotechnology and Bioremediation. CRC Press, Florida, USA (Taylor and Francis) Chap. 27, pp. 523-547

56 Chandra Sekhar K. and.Prasad MNV (2006) Risk assessment, pathways and trace element toxicity of sewage sludge amended soils and agro-forestry. In, M.N.V Prasad, K.S.Sajwan, and Ravi Naidu (Eds) Trace elements in the environment: Biogeochemistry, Biotechnology and Bioremediation. CRC Press, Florida, USA (Taylor and Francis) Chap. 31, pp. 633-657

55 Prasad MNV (2005) Heavy metal stress in plants: Metallomics approach for phytoremediation. In,Stress Biology, Eds. U. Chakraborty and B. Chakraborty. Narosa
Publishing house. Pp. 21-26

54 Prasad MNV (2005) Metal accumulating plants are implicated in elemental allelopathy and elemental defense – environmental implications. In, G.L. Bansal and S.P. Sharma (Eds) *Proc. of Int. workshop on protocols and methodologies in allelopathy*. Palampur. Pp. 43-50.

53. Parsad MNV (2005) Nutritious and noxious elements in soil. In: *Soil biodiversity, ecological processes and landscape management*. Eds P.S.Ramakrishnan, K.G.Saxena, M.J.Wift, K.S.Rao and R.K.Maikhuri. Oxford and IBH Puhlishers. New Delh. P. 149-158.

52. Prasad MNV (2004) Non-edible oils for biodiesel program: scope and constraints – Learning from international experience.*In, Renewable energy science series XII – Tree borne oil seeds as a source of energy for decentralized planning.* Ministry of Non-Conventional Energy Sources, GOI, Regional office, Chennai. pp. 89-109.

51. Prasad MNV(2004) Metallothioneins, metal binding complexes and metal sequestration in plants, In: M.N.V.Prasad (2nd Ed), *Heavy Metal Stress in plants:From biomolecules to ecosystems.* Springer-Verlag. Heidelberg. Narosa New Delhi. pp. 47-83

50. Devi, S.R. and Prasad MNV (2004) Membrane lipid alterations in heavy metal exposed plants, In: M.N.V. Prasad (2nd Ed), *Heavy Metal Stress in plants: From biomolecules to ecosystems.* Springer-Verlag. Heidelberg. Narosa New Delhi pp. 127-145

49. Myśliwa-Kurdziel B, Prasad MNV and Strzałka (2004) Photosynthesis in metal plants, In: M.N.V.Prasad (2nd Ed), *Heavy Metal Stress in plants: From biomolecules to ecosystems.* Springer-Verlag. Heidelberg. Narosa New Delhi pp. 146-181

48. Prasad MNV (2004) Phytoremediation of metals and radionuclides in the environment: The case for natural hyperaccumulators, metal transporters, soil amending chelators and transgenic plants, In: M.N.V. Prasad (2nd Ed), *Heavy Metal Stress in plants: From biomolecules to Ecosystems*. Springer-Verlag. Heidelberg. Narosa New Delhi pp. 345-392

47. Sanità Di Toppi, L., Gremigni P, Pawlik Skowronska B, Prasad MNV and Cobbett C.S. (2003) Responses to heavy metals in plants – Molecular approach. In *Abiotic stresses in plants*. Eds. L. Sanità Di Toppi, and B. Pawlik Skowronska. Kluwer Acad Publishers. pp. 133-156. Dordrecht

46. Prasad MNV and Devi S.R. (2002) Physiological basis for allelochemical action of ferulic acid. In, *Allelopathy: from molecules to ecosystems.* Eds. M.J. Reigosa and N Pedrol. Science publishers Inc. NH, USA. p. 25-43

45. Prasad MNV (2002) Zinc transporting genes in plants. Zeszyty Naukowe PAN 33, Com. "*Man and Biosphere*". Eds: A. Kabata-Pendias and B. Szteke, Warsaw, p. 363-366.

44. Prasad MNV (2002) Zinc is the friend and foe of life. Zeszyty Naukowe PAN 33, Com. "*Man and Biosphere*".Eds:A.Kabata-Pendias and B.Szteke,Warsaw, p.49-54.

43. Bashmakov, D.I., Lukatkin, A.S and Prasad MNV (2002) Zinc hyperaccumulating weeds from temperate Russia. Zeszyty Naukowe PAN 33, Com. "*Man and Biosphere*". Eds: A.Kabata-Pendias and B. Szteke, Warsaw, p.309-313.

42. Prasad MNV (2002) Bioresources for remediation and monitoring of metals in the environment. Int. Conf. *Bioresources and Environmental Stress. Research Institute for Bioresources,* Okayama University, Kurashiki, Japan. Pp. 7-10.

41. Sanità Di Toppi L, Prasad MNV, Ottonello S (2002). Metal chelating peptides and proteins in plants. In: M.N.V. Prasad and K.Strzalka (Eds.), *Physiology and Biochemistry of Metal Toxicity and Tolerance In Plants*, Kluwer Academic Publishers. Pp. 59-93

40. Mysliwa-Kurdziel, B, Prasad MNV and K. Strzalka (2002). Heavy metal influence on the light phase of photosynthesis. In: M.N.V. Prasad and K. Strzalka (Eds.), *Physiology and Biochemistry of Metal Toxicity and Tolerance In Plants*, Kluwer Academic Publishers. pp. 255 –299.

39. Prasad, MNV (2001). "Bioremediation Potential of Amaranthaceae." In: A.Leeson, E.A. Foote, M.K. Banks, and V.S. Magar (Eds.), Phytoremediation, Wetlands, and Sediments, 6(5):165-172. *Proc, 6th Int In Situ & On-Site Bioremediation Symposium*, Battelle Press, Columbus, OH.

38. Prasad MNV and S. R. Devi (2001) Physiological basis for allelochemical action of ferulic acid. *Proc. of the 1st European OECD allelopathy symposium*. pp. 27-45, Vigo. Sapin

37. Seshagirirao K and Prasad MNV (2001) Latex biochemistry of certain Euphorbiaceeous taxa: Medicinal importance. In*, Development of Plant Based Medicines: Conservation, Efficiacy and Safety*, P.K.Saxena (ed). Kluwer Academic Publishers. Pp. 199-210.

36. Prasad MNV, Greger, M., and Smith, B.N (2001) Aquatic macrophytes. in *Metals in the Environment - Analysis by biodiversity*, Marcel Dekker Inc. New York. pp. 259-288.

35. Prasad MNV (2000) Phytoremediation as a potential tool for environmental geotechnology and sustainable development. *5th Int. Symp. "Environmental Geotechnology and Global Sustainable Development*" August 17-23, 2000. Belo Horizonte/Minas Gerais, Brazil. On CD

34. Prasad MNV and H. Freitas. (2000) *Quercus ilex* L. (Holly oak) phytomass utility for cleanup of metal contaminated aquatic and terrestrial sites. *5th Int. Symp."Environmental Geotechnology and Global Sustainable Development*" August 17-23, 2000. Belo Horizonte/Minas Gerais, Brazil. On CD

33. Prasad MNV (1999) Metallothioneins and metal binding complexes in plants. In, *Heavy Metal stress in plants: From molecules to ecosystems*, (eds) M.N.V. Prasad and J. Hagemeyer. Springer-Verlag. Berlin, Heidelberg, New York.pp.51-72.

32. Devi, S.R. and Prasad MNV (1999) Membrane lipid alterations in heavy metal exposed plants. In, *Heavy Metal Stress in Plants: From Molecules to Ecosystems,* (eds) M.N.V. Prasad and J. Hagemeyer, Springer-Verlag. Berlin, Heidelberg, New York. 99-116.

31. Prasad MNV and Strzalka, K (1999) Impact of heavy metals on Photosynthesis. In, *Heavy Metal Stress in Plants: From Molecules to Ecosystems,* (eds) M.N.V. Prasad and J. Hagemeyer. Springer-Verlag. Berlin, Heidelberg, New York. pp. 117-128.

30. Prasad MNV (1998) Sustainable biomass forest plantations and wasteland rehabilitation in Deccan, India. In, *Proc. 6th Bio-Refor, Overcoming impediments to reforestation. Int. workshop on tropical forest rehabilitation in the Asia-Pacific region.* (eds) J. Kikkawa, P. Dart, D. Doley, K. Ishii, D. Lamb and K. Suzuki. Tokyo. pp. 39-42.

29. Prasad MNV (1997). Free floating,submerged and emergent macrophytes as biofilters of toxic trace meatls and pollutants from natural and industrially polluted aquatic systems. *Proc. Int. Conf. on Industrial Pollution and Control Technologies* (ed) Y. Anjaneyulu. Allied Publishers Ltd. Hyderabad. pp. 324-327.

28. Prasad MNV (1997). Trace metals.In, *Plant Ecophysiology* (ed) M.N.V. Prasad. John Wiley and Sons, New York, USA. pp. 207-249.

27. Devi, S.R., Pellissier, F. and Prasad MNV (1997). Allelochemicals. In, *Plant Ecophysiology* (ed) M.N.V.Prasad. John Wiley and Sons Inc. New York. pp.253-303.

26. Prasad MNV (1996) Variable allocation of heavy metals in phytomass of crop plants - human health implications. In: Plzensky Lékarsky Sbornik, Suppl. 71: 19-22. (eds) P. Sobotka and V. Eybl. Czech Republic Medical Associa- tion. Charles University Press. Prague.

25. Prasad MNV (1996) Rehabilitation of scrub into a large scale biomass forest in Deccan region of India. In: *Proc. 9th European Conference on Biomass for energy and the environment,* (eds). Ph. Chartier, G.L. Ferrero, U.M. Henius, S. Hultberg, J. Sachau and M. Wiinblad 1: 715-720 Pergamon.

24. Prasad MNV (1995) Eucalyptus for energy plantations in India: boon or ban. In*: Proc. 8th European Conference on Biomass for energy, environment, agriculture and industry*. (eds). Ph. Chartier, A.A.C-M. Beenackers and G. Grassi. Pergamon 1: 530-534.

23. Prasad MNV (1994) Photosynthesis and productivity of tree species growing the energy forest of the University of Hyderabad, India. In: *Proc. 7th European Conference on Biomass for energy and industry*. eds. D.O.Hall, G.Grassi and H.Scheer, Ponte Press, Germany. pp. 1250-155.

22. Prasad MNV (1993) Metal pollution in Hussainsagar and Banjara lakes of Hyderabad, Andhra Pradesh, India. Evolution of possible metal detoxification and tolerance mechanisms by aquatic algae - an over view. In: *Ecology and pollution of Indian Lakes and Reservoirs* (eds) P.C. Mishra and R.K. Trivedy, Ashish Publishing House, New Delhi, pp. 293-300.

21. Devi SR and Prasad MNV (1993) Effect of ferulic acid on the photo-synthetic electron transport activities of maize (*Zea mays* L.) thylakoids. In: *DAE Symp. on Photosynth. and Molec. Biol*. BRNS Bombay. pp. 72-79.

20. Prasad MNV (1992) Multitier rural home gardens - Economic and ecological perspectives of Biomass production. *In: Proc. 6th European Conference on Biomass for Energy, Industry and Environment*. (eds) G.Grassi, A. Collina and H. Zibetta. Elsevier Applied Science. pp. 307-311.

19. Rao GVR and Prasad MNV (1992) *Acacia auriculiformis* tissue culture -feasibility of biomass enhancement. In: *Proc. 6th European Conference on Biomass for Energy, Industry and Environment*. (eds) G. Grassi, A. Collina and H. Zibetta. Elsevier Applied Science. pp. 212-216.

18. Seshagirirao, K. and Prasad MNV (1992) *Euphorbia* latex biochemicals other than hydrocarbons - Applications. In: *Proc. 6th European Conference on Biomass for Energy, Industry and Environment*. (eds) G. Grassi, A. Collina and H. Zibetta. Elsevier Applied Science. pp. 1342-1346.

17. Prasad MNV (1992) *Casuarina equisetifolia* productivity in Deccan India. *1st European forum on electricity production from biomass and solid wastes by advanced technologies*. (eds) G. Grassi and I. Bertini. CEC, Belgium. pp. 356-360.

16. Reddy, G.N. and Prasad MNV (1991) Germination inhibiting phenolic acids in leaves of *Leucaena leucocephala* (Lam) De Wit., *Acacia auriculiformis* A Cunn ex Benth and Eucalyptus camaldulensis Dehnh. *Proc. Bioenergy Soc 6th Conven. and Symp. '89* (eds) H.L. Sharma and R.N. Sharma pp. 109-113.

15. Devi, S.R. and Prasad MNV (1991) *Acacia* tree crops for co-production of polyphenols and fuelwood. *Ibid.* pp. 136-146.

14. Rao, G.V.R., Reddy, G.N. and Prasad MNV (1991) Effect of 5-azacytidine on callus cultures of *Acacia auriculiformis. Ibid.* pp. 44-46.

13 Prasad MNV and Devi, S.R. (1990) *Terminalia bellerica* Roxb.- Potential source of polyphenols for industrial use. *Proc. 5th European Conference on Biomass for Energy and Industry* (eds) G. Grassi, G.Gosse and G. dos Santos. Elsevier and Applied Science. 1: 541-546.

1. Prasad MNV (1990) Biotechnology in the management of renewable resources. *Telugu Acad*. J. 4: 97-100.

11 Seshagirirao, K., Reddy, G.N. and Prasad MNV (1989) Fometa machine produced Barley fodder phytomass quality. *Proc. Bioenergy Soc 5th Conven. and Symp.'88*: 461-462

10. Reddy GN and Prasad MNV (1989) Allelochemicals from *Leucaena leucocephala* (Lam.) De Wit. (K-8) and its rhizosphere - possible ecological implications. *Ibid*: 463-466

9. Rao GVR, Reddy GN and Prasad MNV (1989) *In vitro* differentiation of *Acacia auriculiformis* A. Cunn. ex Benth. from shoot meristems. *Ibid* 112-114

8. Prasad MNV and Rajeswar, J. (1989) Productivity and phytomass characteristics of *Leucaena leucocephala* (Lam.) De Wit. and *Sesbania bispinosa* (Jacq.) W.F.Wight- multiuse legumes. *Ibid:* 219-235

7. Prasad MNV (1988) Fuels from Biomass. *Telugu Acad J*. 2: 106-110

6. Seshagirirao, K. and Prasad MNV (1988) Petrocrop resources of Andhra Pradesh a preliminary survey. *Proc. Bioenergy Soc. 4th Conven. and Symp. '87*: 103-105

5. Prasad MNV (1987) Palaeoxylology of the Kamthi Formation, Indian Lower Gondwana. *Geol Surv India Spl Pub* 11: 243-251

4. Prasad MNV and Seshagirirao, K. (1987) Utilization of strach from Euphorbiaceous taxa other than cassava for alcohol production. *Proc. Bio-energy Soc 3rd Conven. and Symp.'86*: 182-190 New Delhi

3. Prasad MNV and Seshagirirao, K. (1987) *Monadenium* Pax - a multiuse petrocrop plant. *Proc. Natn. Workshop on petrocrops*. 82-93, Indian Inst. Petroleum, Dehradun, India.

2. Prasad MNV (1984) The changing pattern of landscape architecture in Meghalaya. *Proc. Symp. Resource survey for land use planning and Evnvir. conser*. Indian Inst. Remote sensing, 230-236. India

1. Prasad MNV and Chandra S (1984) Some species of *Dadoxylon* from the Kamthi beds of Kanhargaon, Chandrapur District, Maharastra, India. *Proc. Symp. Evol. Botany and Biostratigraphy* (ed) A.K.Sharma, Univ. Calcutta. 347-367. India.

We published in the following peer reviewed journals

1. African J Biotechnology, Kenya
2. Analusis, France
3. Aquatic Toxicology, Elsevier
4. Biochemical Archives, USA
5. Biochemistry and Molecular Biology International, Australia
6. Biologia Plantarum, Czech Republic
7. Biomass and Bioenergy, UK
8. Bioremediation, Biodiversity and Bioavailability, GSB, UK
9. Bioresource Technology, UK
10. Biotechnology Advances, Elsevier

11. Brasilian J Plant Physiology, Brazil
12. Bulletin of Environment and Contamination Toxicology, USA
13. Cell Biochem Biophysics
14. Chemosphere, UK
15. CLEAN Soil, water and Air
16. Colloids and Surfaces B: Biointerfaces, Elsevier
17. Critical Reviews in Biotechnology, UK
18. Current Science, India
19. Desalination
20. Ecological engineering, Warsaw
21. Economic Botany, USA
22. Electronic Journal of Biotechnology, USA/Chile
23. Environment International, UK
24. Environmental and Experimental Botany, The Netherlands
25. Environmental Pollution, UK
26. Excelsa, Zimbabwe
27. Food and Chemical Toxicology
28. Functional Plant Science and Biotechnology, GSB, UK
29. Helia, Serbia
30. International J Environmental Science and Technology, springer
31. International Journal of Phytoremediation,Taylor & Francis USA
32. J. Analytical Atomic Spectrometry, Royal Soc. Chemists, UK
33. J. Chemical Ecology, USA
34. J. Freshwater Ecology, USA
35. J. Hazardous Materials
36. J. Plant Biology, India
37. J. Plant Biotechnology, Republic of South Korea
38. J. Photochemistry and Photobiology: Biology B
39. J. Plant Physiology, Germany
40. J. Trace Elements in Medicine and Biology
41. Leucaena Resarch Reports, USA
42. Medicinal and Aromatic Plant Science and Biotechnology, GSB, UK
43. Nitrogen Fixing Tree Research Reports, USA
44. Palaebotanist, India
45. Paleontgraphica, Germany
46. Photosynthetica, Czech Republic
47. Plant Biochemistry and Biotechnology, India
48. Plant Biosystems
49. Plant Biotechnol Reports
50. Plant Growth Regulation
51. Plant Physiology and Biochemistry, France
52. Plant Science, Ireland
53. Plant Stress, GSB, UK
54. Plant Systematics and Evolution, Austria
55. Pollen et Spores, France
56. Proc. Indian Acad. Sci., Bangalore, India

57. Proc. Indian Natnl. Sci Acad., New Delhi, India
58. Protoplasma
59. Rev. Palaeobot. Palynol. The Netherlands
60. Reviews on Environmental Health, Walter de Gruyter, Berlin
61. Seed Science and Biotechnology, GSB, UK
62. Taxon, USA
63. Terrrestrial and Aquatic Ecotoxicology, GSB, UK
64. The Asian and Australasian Journal of Plant Science and Biotechnology, GSB, UK
65. Transgenic Plant Journal, GSB, UK
66. Tree and Forestry Science and Biotechnology, GSB, UK
67. Trends in Biotechnology, Elsevier

On going research projects

22. "Phytomanagement of metalliferous soils" India Thialand scientific cooperation for 3 years DST/INT/THAI/P-02/2012 dt 31-1-2013 . Grant sanctioned Rs. 8.85,000

    Thailand collaborator: Dr Woranan Nakbanpote (D.Sc. Biotechnology)
    Department of Biology, Faculty of Science, Mahasarakham university,
    Khamriang, Kantarawichi District, Mahasarakham 44150 THAILAND.

21. Precision stressing by UV-B radiation to improve the quality of *Coriander* and *Trigonella* total 7,46,000 UGC Ref. F. No. 41-389/2012

20. Phytoproducts from plants applied in phytoremediation of heavy metal contaminated sites MoEF Ref No. 17/3/2010-RE Dt 29-2-2012 Rs 9,39,200

Research projects completed

19. Potential of Traditional Anti-Diabetic Plants – Molecular Analysis of Insulin Sensitizing Effects. UGC UPE 2 BR9 Rs. 3,00,00 – not implemented

18. Biochemical characterization of *Moringa oleifera* Lam (Drum stick) seed proteins for removal of heavy metals from aqueous media: Analysis of metal binding ligand kinetics- UGC UPE 2 BR3 Rs 3,00,000

17. Biotechnological interventions for phytomanagement of mine spoils- DST GRICES Indo-Portugal collaborative research project (Portuguese Collaborator Prof. Dr Helena Freitas, Dept Life Sciences, University of Coimbra. DST/INT/PORTUGAL/PO-22/04/16-7-2007.

16. Preparation of "State of the Art Report on Bioremediation of Contaminated Sites in India" F. No. 19/80/2008-RE dt 3-10-2008. M/o Envir. & Forests, New Delhi Rs. 2,64,000

15. Biosorption of heavy metals from aqueous substrates using *Prosopis juliflora* L. (Mesquite) and *Vetivera zizanioides* (L.) Nash (Vetiver grass) phytomass. UGC Ref F.No.31-159/2005(SR) 31.3.06. Rs. 7,97,000

14. Bioprospection of *Strychnos nux-vomica* and *S. potatorum* seeds for removal of toxic metals from aqueous effluents by biosorption. Dept. of Biotechnology, BT/PR6232/ BCE/08/ 402/ 2005 dt. 16.12.2005 Funds sanctioned Rs. 18,84,000

13 The assembly and functioning of photosynthetic apparatus in water plants under heavy metal stress - DST-MNII Indo-Polish collaborative research project (Polish collaborator Prof. dr hab. Kazimierz Strzalka, Jagiellonian University, Krakow, Poland. DST/INT/POL/P-15/05/6-7-06

12. Establishment and strengthening of Botanical garden. M/o Envir. & Forest, GOI sanction Ref No. 10/03/2003-CS/BG DT. 8-2-2005. Rs. 6,50,000

11. *Ex-situ* conservation and characterization of threatened endangered, rare/ and vulnerable medicinal and aromatic plants of Deccan Plateau. Dept. of Biotechnology, BT/PR2273/ PBD/17/117/2000 dt. 7-9-2001. Funds sanctioned Rs. 98.52 lakhs.

10. Ecophysiology and biochemistry of heavy metal effects on the functioning of plant cells at the molecular level". DST-KBN Indo-Polish collaborative research project: with Prof. dr. hab. Kazimierz Strzalka, Director, Institute of Molecular Biology, Jagiellonian University, Krakow, Poland. DST/INT/POL/P-4/2001 dt. 26.7.2001 (2001-03)

9. Metabolism and chemical speciation of bioaccumulated cadmium in *Ceratophyllum demesum* L. (Coontail) - a free floating macrophyte. DST ref. SP/SO/A21/97. Dt. 1.7.99 Funds sanctioned Rs. 16,88,507

8. Heavy metal adsorption capacity of *Acacia nilotica* L. bark - *in situ* and *in vitro*". 5000 USD. Duration 18 months. Third World Academy of Sciences, Italy. ref RGA No. 98-167 RG/BIO/AS Dt. 21.12.98

7. Monitoring of heavy metals with tree rings and bark. M/o Envir. & Forests, GOI Sanction ref. No. 19/33/95-RE 28-3-97. Funds sanctioned Rs. 8,50,520

6. Copper-binding complexes in *Ceratophyllum demersum* L. (free floating rootless aquatic macrophyte) - possible role in detoxification or mere a symptom of metal stress. CSIR Sanction Lr No. 38(901)/95/EMR-II dated 30-10-1995. Funds sanctioned for 3 years Rs. 4, 00,800

5. Proteins and isoenzymes of *Euphorbia* and *Chamaesyce* - Phylogenetic implications. UGC.F-37/91 Dt 15-1-1992. Funds received Rs.33,344. Date of completion. 1 April 1993.

4 Tannins: Extraction and assessment of ten *Acacia* species of arid region of Andhra Pradesh. Sponsored by Dept. of Science and Technology, New Delhi. DST/SP/YS/L-14/Dt 16-6-88. Funds received Rs.1,02,200. Date of completion UH/ACAD/L-46/ 88/7380 Dt 7-4-90.

3. Micropropagation of fuel wood tree species. Sponsored by Indian National Science Academy, New Delhi. INSA BS/Burs/1049/Dt 1-6-87. Funds received Rs. 20,000. Date of completion . UH/ACAD/L-32-B/ 87-88/ 5568 Dt. 8-8-89

2. Biomass enhancement through genetic transformation and tissue culture techniques. 1987-90. Sponsored by Dept. of Non-conventional Energy Sources, New Delhi. No.201/23/86-BM Dt 14-2-86 Funds received Rs. 6,74,600. Date of completion 1991 March

1. Near-infrared reflectance spectroscopy analysis of hydrocarbon producing plant species from the arid lands of Andhra Pradesh. Sponsored by Dept. of Non-conventional Energy Sources, New Delhi.No.201/40/86-BM Dt. 16-2-86.Funds received Rs. 3, 64,936. Date of completion UH/ACAD/L-35/87/ 7382 Dt 6-4-90

Research guidance: Ph.D's awarded - 14

1) K. Seshagirirao - Latex sera biochemistry, biosystematics and biocrude aspects of the subtribe Euphorbiinae, Euphorbiaceae. -1992

2) G. Narender Reddy - Cadmium induced biochemical changes in *Scenedesmus quadricauda* and *Oryza sativa* L.- 1992

3) G. Vijaya Ranga Rao - *In vitro* organogenesis and plant regeneration of *Acacia auriculiformis* - Multipurpose tree legume -1994

4) S. Rama Devi - Physiological responses of maize (*Zea mays* L.) to exogenous ferulic acid -1995

5) T. Rama Kumar - Ferritin in *Vigna mungo* (L.) Hepper (Black gram): Some functional aspects. -1998

6) N. Nagalakshmi - Copper-induced oxidative damage in *Scenedesmus bijugatus*: Defense mechanisms and toxicity amelioration in nutrient- manipulated culture media- 2000

7) P. Aravind - Evidence for zinc, amino- and organic acids induced protection to cadmium exposed *Ceratphyllum demersum* L A free floating aquatic macrophyte-2004

8) K. Padmalatha *Ex - situ* conservation, molecular diversity of *Pterocarpus santalinus* L.f and *Rauvolfia serpentina* (L.) Benth. ex Kurz using RAPD markers: Endangered medicinal plants - 2005

9) K. Jayaram - Rapid *in vitro* multiplication of *Drosera indica* L., *D. burmanii* Vahl. and molecular diversity in *Oroxylum indicum* Vent. by RAPD analysis: Vulnerable medicinal plants –2005

10) N.L. Raju - *Ex-situ* conservation, molecular diversity of *Celastrus paniculatus* Willd. and *Decalepis hamiltonii* W. & A. using RAPD markers: Red listed medicinal plants – 2006

11) N. Nirupa. Overexpression of pea seed (*Pisum sativum* L.) ferritin cDNA in Indian mustard [*Brassica juncea* (L.) Czern] and evaluation of the transformants for metal tolerance - 2006

12) P. Sreenivasa Rao - Bioprospecting *Strychnos* L. (Strychnaceae) 2008

13) Saritha V Kuriakose – Cadmium-induced toxicity in *Sorghum bicolor* (L.) Moench. – alleviation by zinc and aggravation by phosphates. 2008

14) Hauhnar Lalhruaitluanga – Bioprospecting *Melocanna baccifera* (Roxb). Kurz. Phytotechnological approach. 2011

15) Mohammad Mansour Saleh Saif - Biochemical and nanoparticle characterization of *Strychnos potatorum* L. seed matrices and their application. 2013

16) Abhay Kumar Lead-induced toxicity and tolerance in *Talinum triangulare* (Jacq.) Willd. 2013.

M.Phil's awarded - 7

1) K. Seshagirirao - Enumeration and assessment of the University of Hyderabad campus plant resources 1986

2) G. Narender Reddy - Physicochemistry, seasonal nutrient status and phytoplankton of lake Banjara, Hyderabad 1987

3) J. Rajeswar - Productivity and phytomass characteristics of *Leucaena leucocephala* (Lam.) De Wit and *Sesbania bispinosa* (Jacq.) W.F.Wight - Multipurpose legume.1988

4) S. Rama Devi-Studies on tannins and related polyphenols from *Acacia.*1989

5) P. Subhashini - Near infrared reflectance spectroscopy analysis of *Leucaena leucocephala* (Lam.) De Wit. leaf mimosine and its effect on growth and enzymes of *Oryza sativa* L. seedlings.1993

6) J. Gautami Satyasree - Effect of ∝-naphthalene acetic acid on in vitro organogenesis, synthesis of anthocyanins, polyphenols and related enzymes of *Euphorbia heterophylla* L. seedling explants.1994

7) G. Sharada- Cadmium-induced oxidative stress in *Vigna radiata* L. seedlings 1997

a) Summary of academic contributions

Part 1 – Research and development

Made outstanding contributions to the field of "Plant-Metal interactions" from molecules to ecosystem. Recognized as world authority on cadmium toxicity and tolerance in plants (Prasad MNV, *Environmental and. Experimental Botany* 1995, 35: 525-545). Cadmium inducible proteins in *Scenedesmus quadricauda* were reported first time from India (Reddy GN and Prasad MNV, 1989, *Curr. Sci*. 58: 1380-1381). Also discovered cadmium- induced HSP cognate in maize (*Zea Mays* L.) seedlings and their chaperone function (Reddy GN and Prasad MNV, 1993, *Biochem. Arch*. 9: 25-32). These findings were widely acknowledged as potential mechanism of detoxification and tolerance of specific heavy metals (please see Hall, 2002, J Exp. Botany 52, 1-11). Neumann et al 1994 also confirmed the HSP induced heavy-metal tolerance in higher plants (Neumann et al, 1994, Planta, 194, 360-367). Publications on metal-binding complexes, toxicity reversal mechanisms, metal-ion interactions with micronutrients, impact of metal-ions on growth, photosynthesis and co-stress phenomena. Metal resistance mechanisms investigated in wide range of experimental systems such as green algae: *Scenedesmus quadricauda, S.bijugatus, Chlamydomonas reinhardtii;* crop plants*: Oryza sativa, Sorghum bicolor, Zea mays, Vigna radiata* and *Brassica juncea;* aquatic macrophytes: *Ceratophyllum demersum, Vallisneria americana* and *Lemna trisulca* have attracted global recognition.

Cadmium-induced toxicity alleviation by zinc, amino acids and organic acids in *Ceratophyllum demersum* L (coon tail).- A free floating freshwater macrophyte Bioaccumulation and mechanism of Zn, Cd uptake, Significance of Zn on Cd-induced Oxidative Stress, Zn-Cd interactions, influence on the redox pool, Ascorbate-Glutathione Cycle and Glutathione metabolism, Influence of Zn on Cd-induced protein oxidation and damage, Cd-impaired photosynthetic functions, Function of supplemented zinc on the Cd-induced DNA damage, and role of amino acids and organic acids in Cd toxicity reversal are some of the significant contributions.

Ferritin in *Vigna mungo* its functions on iron homeostasis, oxidative stress and heavy metal detoxification were investigated and published. Phytoremediation of metal polluted terrestrial and aquatic ecosystems, characterization of plant community tolerant to toxic trace metals, 216-223; *Biochemical Archives* 1992, 8: 101-106; 1993, 9: 25-32; 1994, 10: 185-188; *Bulletin of Environmental Contamination and Toxicology,* 1992, 49: 600-605; 1999, 60: 306-311; 1998, 61: 623-628; 62: 502-507; 2004, 72:1038-1045; 2004, 73:174-181; *Current Science* 1989, 58: 1380-1382; *Eectronic J. Biotechnology* 1999, 2:36-50; 2003, 6:285-312; *Environmental and. Experimental Botany* 1990, 30:251-264; 1995, 35:525-545; *Environmental Pollution* 2000, 110: 277-283; 2005, 135: 209-220; *International J. of Phytoremediation* 2001, 3: 289-300; *J Analytical Atomic Spectrophotometry* (RSC) 2004, 19: 52-57; *J Plant Physiology* 1992, 140: 156- 162; 1995, 145: 67-70; 1999; 155: 652-655; Photosynthetica 1995, 31: 635-640; *Plant Physiology and Biochemistry*, 2003, 41: 391-397; 2005, 43: 107-116; *Plant Science* 1998, 138: 157-165; 2001, 160: 291-299; 2001,161: 881-889; 2005, 169:245-254; *Russian J Plant Physiology* 2003; 50: 686-701, 2005, 51: 233-237; *Environmental International* 2004, 30: 65-72; *Chemosph*ere 2004, 54, 1625-1642; 2005, 61: 1720-1733, *Brazilian J Plant Physiology* 2005 17(1): 3-20, 53-64, 113-128; *European J Mineral Processing & Envir Protection* 2004, 4: 95-101, 136-143; *Journal of Geochemical Exploration* 2005, 85: 99-107. Terrestrial and Aquatic Ecotoxicology 2007 1: 70-77, *Transgenic Plant Journal* 2007 1(2): 384-392, *Plant growth regulation* (2008) 54, 143-156 *Aquatic Toxicology*, (2009) 95: 213–221; Agroforestry Systems (2009) (available on line); *Chemosphere* (2009) 77, 393-398; *The Asian and Australasian Journal of Plant Science Biotechnology*. (2009) 3(1), 1-6 ;*Current Science* (2009) 96, 1165-1166; *Bioremediation, Biodiversity and Bioavailability* (2009) 3(1), 6-14; *J. Hazardous Materials* (2009) 169, 991–997; *Critical Reviews in Biotechnology* (2009) 29(2), 120–130; *Colloids and Surfaces B: Biointerfaces* (2009) 71, 248–254; *Aquatic Toxicology* (2009) 91, 1-9; *Bull Envir Contam Toxicol*. (2009) 82: 627-632;; *J Trace Elements in Medicine and Biology* (2009) 23, 50–60;; *Current Science*(2010) 99 (5) 601-607; *Bioresource Technology* (2010) 101, 8907-8910; The Asian and Australasian Journal of Plant Science Biotechnology (2010) 4(1): 91-97; Journal of Hazardous Materials (2010) 181, 480-484; *Current S*cience (2010) 98, (12): 1566-1569; *Trends in Biotechnology* (2010) 28 (3): 142-149; *Protoplasma* (2010) 240:69–74; *Environmental Pollution* (2010) 158:18–23;J. Hazardous Materials (2010) 175: 311–318; Agroforestry Systems (2010) 79, 249-252; *Desalination* (2011) 271, 301–308; *Biotechnology Advances* (2011) 29, 248-258; *Colloids Surf. B: Biointerfaces* (2012) 94, 73-79*, Environmental and Experimental Botany* (2012) 75, 307–324; *Int. J. Phytoremediation* (2012) 14, 221–234

Prasad's long-standing research focuses the ecophysiological responses of plants to heavy metal toxicity; geobotanical and biogeochemical exploration; biomonitoring of heavy metal pollution; revegetation of metalliferous mine wastes; development of phytoremediation technology for metal-polluted soils and effluents. Prasad's research group adopts an integrated science/application-driven approach to develop sustainable biotechnologies for the prevention, management and remediation of environmental contamination. The above significant contributions have earned him worldwide reputation and secured working group membership (Only member from India) in COST 859, which is supported by European Science Foundation.

Conservation biotechnology of medicinal and aromatic plants of Deccan ecoregion is another areas of research of Prof MNV Prasad. He had established a botanic garden and field gene bank on the University of Hyderabad campus (Selected publications: *Bioresource Technology* 1991, 36: 189-192; 1993, 44: 251-254; *Biomass and Bioenergy*

1995, 8: 203-205; Current Science. 2005, 89 :447-448, *African Journal of Biotechnology* 2006, 5: 230-234; Medicinal and Aromatic Plant Science and Biotechnology 2007 1(2): 155-208 , 1(2): 263-273, 1(1): 118-123, 1(1): 133-137, Seed Science and Biotechnology 2007 1: 32-34, *The Asian and Australasian Journal of Plant Science and Biotechnology.* 2007, 1(1): 1-9, *Plant Biotechnol Rep* 2007 1: 79–84, *Functional Plant Science and Biotechnology* 2007, 1(1): 195-199; *BioDiCo*n (2009) 2(3) 29-33; *African J. Biotechnology* (2009) 8 (22): 6053-6062; Food and Chemical Toxicology (2009) 47, 283–288

Part 2 Teaching

Coordinated the Post Gratudate Diploma in Environmental Education and Management (PGDEM) program during 1995-2008 for the Centre for Distance Education. He had authored and also edited several lessons in the study material for the PGDEM.

Published 12 edited volumes of literature in the area of Plant Ecophysiology, plant metal interactions and abiotic stress, CRC Press, Boca Raton (Taylor and Francis Group); Springer-Verlag Heidelberg (4); Kluwer Academic Publishers, Dordrecht; Marcel Dekker Inc. New York; and John Wiley and Sons Inc. New York (2) and Narosa (New Delhi), and Fizlitmat, Moscow.

Coordinating the Post Gratudate Diploma in Environmental Education and Management (PGDEM) program since 1995 for the Centre for Distance Education. Authored and also edited several lessons in the study material for the PGDEM.

DEM 411 Concepts of ecosystem and environment: Deals with basic concepts of ecosystem and environment.

DEM 412 Natural Resources Management: Deals with the genesis of environmental problems in the wake of population pressures and stress on natural resources as well as need for conversion.

DEM 413 Chemical and Microbial technology for environmental monitoring: Covers Microbial technology and inorganic and organic pollutants and techniques for pollutant analysis.

DEM 414 Environment and Energy Management: Environmental and Energy Management issues

DEM 421 Atmospheric Pollution: Deals with issues related to Air pollution

DEM 422 Aquatic Pollution: Deals with water pollution treatment of waste water etc.

DEM 423 Environmental toxicology and human health concerns: It emphasizes principles of toxicology, mode of action of toxicants, assessment of toxicity, detoxification mechanisms, Environmental carcinogenesis and human health concerns.

DEM 424 Environmental biogeotechnology: Issues related to contemporary environmental biotechnology and geotechnology, bioresource management, Biodiversity conservation, Recycling of waste, Bioremediation of polluted ecosystems, Remote sensing, Geographic information systems, environmental protection act and regulatory agencies are covered.

Brief note of academics

Prof. M.N.V. Prasad made outstanding contributions to the field of “Plant-Metal interactions”, from molecular to ecosystem level (Phytoremediation). Bioresources, biomass energy sources, bioeconomy (including value chain and value addition products from plants used in phytoremediation) and bioremediation are his main areas of expertise. His work on Cadmium toxicity and tolerance in vascular plants (Prasad Environ. and Exp. Botany 1995, 35:

525-545) received global recognition. Cadmium inducible proteins in *Scenedesmus quadricauda* were reported for the first time (Reddy and Prasad 1989, Curr. Sci 58: 1380 1381). Discoveries include cadmium-induced HSP cognate in maize (*Zea mays* L.) highlighting their role as molecular chaperones (Reddy and Prasad 1993, Biochem. Arch 9: 25-32). This new concept was acknowledged as a potential metal detoxification mechanism for heavy metals (Neumann et al, 1994, Planta 194, 360-367).

Prof. M.N.V. Prasad was awarded the Pitamber Pant National Environment Fellowship by the Ministry of Environment and Forests (Government of India). He also served the Ministry of Environment and Forests in various advisory committees on biodiversity conservation, ecosystem services, pollution control and abatement, environmental information systems and bioremediation of contaminated sites. He was active as a visiting scientist in several foreign universities and research institutes in different parts of the globe.

He is the editor, co-editor, or author for 14 international books published by international publishers.