

**FACULTY PROFILE AND OTHER PROGRESS OF CENTRE FOR
ENVIRONEMNTAL SCIENCES**

(Established in July, 2012)



**Centre for Environmental Sciences
Central University of Jharkhand
Brambe-835205, Ranchi**

Centre for Environmental Sciences

Mission Statement: The Centre for Environmental Sciences seeks to understand the integrated behaviour of the soil-plant-atmosphere; sediment-benthos- phytoplankton-zooplankton systems as it affects the flow and partitioning of resources including carbon and water. The main mission of the Centre for Environmental Sciences is to carry out scientific research in thrust areas, including Biodiversity, the interaction between humans and the environment and the sustainable management of natural resources. The Centre aims at making an important contribution to the scientific understanding of social issues such as environmental pollution, food production, climate change, nature and landscape management, soil and water management, rural and urban development and exploitation of underground resources.

About the Centre: Centre for Environmental Sciences, started in July, 2012 under the aegis of School of Natural Resource Management with the support of four faculties viz. Dr. Amrita Daripa, Dr. Sushil Kr. Shukla, Dr. Purabi Saikia and Dr. Kavita Parmar. The Centre has diversified interest in various earth, atmospheric and biological processes. Linkages between Ecological and Social processes give an additional dimension to Centre's interest, making the work relevant. Therefore, the curriculum has components of multidisciplinary areas such as physical sciences, earth and atmospheric sciences, biology sciences, Chemical Sciences and environmental monitoring and management.

Main objective of Centre is to disseminating knowledge on current regional and global environmental issues. Our approach is to underpin our research with a strong theoretical framework that is firmly imbedded in leading edge experimentation and extension program. This helps facilitate the pipeline from world-leading basic science through application to the real-world problems.

1. FACULTY PROFILE

Profile of Dr. Manoj Kumar

1. Dr. MANOJ KUMAR

Associate Professor & Head, Centre for Environmental Sciences,

Email: msinha_09@rediffmail.com, manoj.kumar@cuja.ac.in Tel. No.-0651-2233044 (R), 09431901969 (Cell)

2. SKILLS AND INTERESTS

Land Surface processes studies, Role of land surface processes in climate using energy balance model, Relationships between climate variability and climate change, and crop yields.

3. EDUCATION

NET (2004)- Cleared National Eligibility Test (NET) in Agricultural Meteorology conducted by Agricultural Scientists Recruitment Board (ASRB) in year 2004.

Ph D (2002)- Department of Geophysics, Banaras Hindu University, INDIA

Thesis – Some studies in Agro-meteorology (Land surface processes)

MSc (Tech) (1991-94) - Department of Geophysics, Banaras Hindu University, INDIA
First Class -- 71% marks

Discipline -- Geophysics with Meteorology
Thesis - Dew Estimation, Distribution & Its Importance

BSc (1986-91) - Magadh University, INDIA
First Class 71% marks Discipline Physics, Chemistry, and Mathematics

I.Sc. (1986) – Magadh University, BodhGaya.
First Class 68% marks. Subjects taken: Physics, Chemistry, Mathematics, & 0% in PCM

Matriculation (1984) – Bihar School Examination Board
First Division 79% marks. Subjects taken: All compulsory subjects.

4. AWARDS AND RECOGNITION

1. **Fast Track Fellowship** under DST's SERC-Fast Track Fellowship for **Young Scientist** (July 2003 to November 13, 2005)
2. Research Associateship by Department of Science & technology, Government of India (August 1996-July 2003.)
3. UGC Merit-scholarship during M.Sc (Tech) program (1993-94)
4. Special State Merit-scholarship during High School (1984-89)

5. PROFESSIONAL COURSES IN INDIA

1. Certificate of Familiarization & Uses of PC from Computer Center, BHU, Varanasi.
2. Ph.D. degree in Agril. Meteorology (Submitted in January 2001 and awarded in year 2002)

6. PROFESSIONAL TRAININGS IN INDIA

1. Seven days training for the instrumentation, analysis of data and interpretation at NGRI, Hyderabad, IITM, India as a part of M.Sc.(Tech) program in year 1992.
2. Seven days training for the observation, analysis and interpretation of upper air observation from pilot balloon and radio-sonde observation at IMD, New Delhi, Sep 17-25, 1996.
3. One week training on Aerosol at University of Helsinki, Hyytiälä, Finland – 25-29 May, 2004 (With 5 European Credit)
4. SAC (ISRO) Ahmedabad in June 2008 for LSM model and data utilization of Radiation model
5. CAOS, Indian Institute of Science Bangalore – April 5-9, 2010 for CTCZ data analysis and sensor calibration
6. VSSC (ISRO), Trivandrum – December 1-5, 2010. Got training for the operation and working of Dr Pishoroty Radio Sonde System
7. BHU Varanasi – June 25-30, 2012, Training on Application of Crop Simulation Model and Decision Support System in Yield Forecasting.

7. PROFESSIONAL TRAINING IN ABROAD

8. Intensive Course on Measurement of atmospheric Aerosols: Aerosol physics, sampling and measurement techniques at University of Helsinki, Hyytiälä from May 22- 27, 2004.

8. PROFESSIONAL MEMBERSHIP

1. Life member and member of Executive Council of “Association of Agrometeorologists”
2. Life Member of India Meteorological Society, New Delhi (Ranchi Chapter)
3. Life Member of Indian Society for Technical Education (No. LM88094)
- 4.

9. RESEARCH/WORKING EXPERIENCE

S. No.	Post held	Employer	Period	Nature of work
1	Head & Associate Professor	CUJ, Ranchi	1 st July'13 to till date	Holding responsibility of Head of Centre, teaching & R&D
2	Lecturer (Sele. Grade)-Reader	VC, BIT Mesra, Ranchi	July 16, 2010 to 15.07.2013	R & D in Atmospheric Sciences, Agril. Meteorology, Land surface processes, To teach M.Sc. course, To guide Ph.D. students, formulating R & D projects, Soldired responsibility to establish new Centre of Excellence in Climatology at BIT. Formulated course structure for IPHD course
3	Scientific Officer-II	VC, BIT Mesra	April 1, 2009 to 15 July, 2010	Development and R &D in Atmospheric Sciences & Boundary layer Meteorology. Handling 5 research projects as a status of PI or Co-PI, Guiding 7 Ph.D. students as Guide or Co-Guide status.
4	Jr. Scientific Officer	Vice Chancellor, BIT, Ranchi	Nov 14, 05 to 30-3-2009	Working for the development of meteorological center at BIT. Developed LATAMOS in BIT
5	Principal Investigator	Director of Campus, Anand	July 1, 2003 to November 13, 2005	Handled DST's Fast Track Project for Young Scientist entitled " Hydrological modelling of land surface processes over Sabarmati river basin" funded by the DST, New Delhi (Rs. 8.34 Lakhs)
6	Research Associate	Director of Campus, Anand	April 16, 2000 to June 30, 2003	Worked in the ad-hoc project "Study of Land Surface Processes Experiment over wheat crop field" funded by the DST , New Delhi. The main work in this project was to study of different land surface parameters over wheat crop field during the LASPEX-97.
7	Against Research Asst.	Director of Campus, Anand	June 1, 1999 to April 16, 2000	Worked as Research Assistant during entire period. The main work was to preparation of Project Completion Report of LASPEX-97 project, data processing and analysis of LASPEX-97 data
8	Research Associate	Director of Campus, Anand	Aug. 21, 96 to March 31, 99	Worked in DST's project " LASPEX-97 over Sabarmati river Basin".

10. PROJECT (s) COMPLETED/ON-GOING /APPROVED (@Rs. 655.69 Lakhs)

Out of total 16 R & D projects funded or supported by different funding or R&D agencies, 13 have been completed, and 4 are on-going are on-going with total Rs. 449.3 Lakhs

Sl. No.	Title of Project	Sponsoring Agency	Project Duration		Total Budget (Rs. inLakhs)
			From	To	
1	Hydrological modelling of land surface processes over Sabarmati river basin (Young Scientist Project by DST)	DST. GOI	2002	2005	8.34

2	Development of forest fire forecasting system of Jharkhand state using statistical techniques and GIS (CI)	NRDMS, DST	2007	15.9.2010	29.0
3.	Observational study of land surface atmosphere interaction in the monsoon trough along its active eastern end (CI)	DST, GOI, New Delhi	2007	31.12.2010	66.0
4.	Training Course on “Basic concepts on micrometeorology, land surface processes: its observational techniques and analysis” (Course-Coordinator)	DST, GOI, New Delhi under CTCZ scheme	10.2.09	20.2.2009	7.35
5.	Short term oscillation study of surface boundary layer during total solar eclipse on 22 nd July, 2009 & 15 th Jan 2010	ISRO (HQ)	2009	2011	2.0
6.	Energy & Mass Exchange in Vegetative System (PI) Under Collaborative mode	SAC (ISRO), Ahmedabad	2008	2011	11.0 (Released so far)
8.	Monitoring and detection of lightning system (Co-Investigator) with EEE Dept.	Govt. of Jharkhand	March’08	March’13	75.0 Lakhs
	Training Prog. On Weather, “Climate, Meteorological Hazards & Disasters Over Jharkhand Region”	MoES, GOI	27.6.2013	29.6.2013	3.5 Lakhs
9.	An ARFI network observatory at BIT, Mesra, Ranchi	ISRO-GBP Programme 25.0 Lakhs+Instr.	November, 2009	30.6.2013	35.0Lakhs+ MWR(@1.0 Crore)
10.	ABLNC programme at BIT Ranchi	SPL, VSSC Trivandrum	April 2010	30.6.2013	60.0Lakhs+ Instruments
13.	Satellite Application in Land Surface Atmosphere coupled Study over Eastern Part of the Country	Space Application Centre, Ahmedabad	September, 2011	Upto 30.6.2013 & since Sept’13 at CUJ	13.0 Lakhs
14	Long-term study on aerosol monitoring system (<i>Dr. Manoj Kumar & Prof. N.C. Mahanti</i>) Under collaborative mode with IITM, Pune	Collaboration with IITM Pune	Aug-08	On-going (With ISRO Project)	Instrument @20.0 Lakhs
15	Establishment of PRWONAM station at BIT Mesra Ranchi	ISRO HQ	October 2010	Instruments will be supplied annually	Instruments are being <u>supplied@60.0 Lakhs</u>
16	Surface process observational studies coupled with atmospheric transfer interaction along eastern end of	MoES, GoI, New Delhi	July, 11		53.0 Lakhs

	monsoon trough				
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10.b. Ongoing

Sl. No.	Title of Project	Sponsoring Agency	Project Duration		Total Budget (Rs. in Lakhs)
			From	To	
1	INSAT-3D data utilization	SAC(Ahmedabad)	2013	continue	>10.0 Lakhs
2.	PRWONAM Programme at CUJ	ISRO HQ & SHAR, Gadanki	2014		Instruments mode
3.	Aerosol effect over varying vegetative fields and surfaces	DST, GOI, New Delhi	2014 (Defended and awaited for Sanction Letter		50.0 Lakhs

11. TEACHING EXPERIENCE (14 years)

Total 8 years teaching experience at Post Graduate Level in Gujarat Agril. University since year 2000. I taught papers on General Meteorology, Agricultural Meteorology and Land surface processes from year 2000-2005. From 2007 batch, involved in teaching at BIT also followed by at CUJ, Ranchi since 1st July, 2013.

12. RESEARCH GUIDANCE

a) Details of PhD thesis – Completed- 6nos.

S.No.	Name of the Student	Title of the thesis/Project
1.	Ms. Swati Pandey	Statistical modelling of drought in Jharkhand state (Awarded)
2.	Mr. Anil Kumar	Study of land surface and Micrometeorological processes over trough axis along its extreme eastern end of India (Awarded)
3.	Mr. Ripunjay Shukla	On statistical modeling to develop forest fire forecasting system (Awarded)
4.	Ms. Jyotsna	Study of solar radiation trend over different climate types in India and its impact on vegetation in perspective of climate change (Awarded)
5.	Mr. Abhay Srivastava	Some investigation on lightning phenomenon using Monte Carlo Techniques (Awarded)
6.	Mrs. R. Latha	Effect of aerosols on evapotranspiration – observations and model (Awarded)

b) Details of PhD thesis – On-going: 4 nos.

S.No.	Name of the Student	Title of the thesis/Project
7.	Mr. Arun K. Dwivedi	Effect of lightning over satellite communications (Co-Guide)-Will submit by December'14
8.	Kumari Lipi	Aerosol radiative forcings over Indo-Gangetic plain of India (Will submit by December'14)
9.	Ms. Smriti Priya	Land surface parameterization and aerosol
10.	Ms. Poulumi Chakraborty	Got admitted in August'14

13. SYMPOSIA/SEMINAR/CONFERENCES ATTENDED

I. In India

1. INTROPMET – International Conference on Tropical Meteorology held at New Delhi during Dec 2-5, 1997.
2. National seminar on "Advance Physical... Sustainable Crop production" March 23-25, 1998, IARI, Delhi, India.
3. National Seminar on Ground Water Resources (GWR-98), July 23-24,1998, BHU, Varanasi, India.
4. National workshop on “LASPEX-97” at GAU, Anand during 18-20 November,1999.
5. National Seminar on “Agrometeorological research for sustainable agricultural production” at GAU, Anand held at September 27-28 2001.
6. National Seminar on “Emerging trends in Agricultural Physics” at IARI, New Delhi during April 22-24, 2003.
7. National Seminar on “*Agrometeorology in the new millennium-Prospectives and challenges*” during October 29-31, 2003 at PAU, Ludhiana
8. National Seminar on “Water Resources Management & people’s participation” at Water Resources Engg. & Management Instt., Samiala, December 10-11, 2004.
9. National Seminar on “Monsoon-2005: Ancient & Modern Techniques” organized by AAU, Anand & Govt. of Gujarat held at MGLI, Ahmedabad on June 20-21, 2005.
10. *Brainstorming Seminar on CTCZ*-organized by DST, Govt. of India, at Ranchi, India, June 28-30, 2005.
11. National Seminar on “Current trends in mathematics and computations” organized by BIT, Noida, December 1, 2005.
12. International Conference on “Mesoscale processes in atmosphere, ocean and environmental systems (IMPA)” a IIT Delhi from February 14-17, 2006.
13. National Conference on New and renewable energy-Prospects and challenges held at BIT Mesra on December 17-18, 2007.
14. 2nd NDIMC conducted by NIDM, New Delhi MoES, GOI, 4-6 November, 2009
15. Workshop on CTCZ-PILOT: Initial Results, conducted by Dept. of Science & Technology, GoI in IITM Pune from April 28-30, 2010.
16. National Workshop on NOWROSE (TSE) at VSSC, Trivandrum on 27-28 January, 2011.
17. STORM Workshop at IIT Kharagpur conducted by the MoES, GOI on 15th May, 2011.
18. SAARC-STORM Workshop at Kathmandu, Nepal conducted by the SAARC-STORM, Bangladesh from 21-23 Dec, 2011.

II. In Abroad

19. International Conference on Water and Flood Management (ICWFM), at BUET Dhaka, Bangladesh from March 12-14, 2007.
20. Attended and presented paper in SAARC-STORM Workshop at Kathmandu, Nepal from December 23-25, 2011.

14. ANY OTHER RECOGNITION

- i. **Adjudged best paper presentation award** for paper entitled “Boundary Layer Behavior over Eastern and Western regions of India-A Case Study” authored by Manoj Kumar, Chinmay Mallik, and N.C.Mahanti presented in **National Conference** on Scientific and Legal Challenges of Global Warming by Mr. Chinmay Mallik held in Kanpur on February 25-26, 2008.

15. PARTICIPATION IN NATIONAL FIELD PROGRAMME & COLLABORATIONS/ LINKAGE WITH OTHER R & D ORGANIZATIONS IN NATIONAL LEVEL

Established Land Surface Atmosphere and Micrometeorological Observational System (LATMOS) in the Institute under Dept. of Science & Technology, GoI’s mega field campaign for CTCZ and STORM Scheme. This system was established

with the Scientific support of CORAL IIT Kharagpur. After establishment of the system, actively participated in DST's (Now MoES) STORM field campaign and working with CORAL IIT Kharagpur and CAS IIT Delhi by sharing the STORM and CTCZ data and research collaboration. Other collaborative institutes are as follows:

- DST/MoES's STORM and CTCZ field programme
- ISRO's GBP programme – Out of 8 ISRO-GBP programme, involved in its 5 programme
- Involved in the state level field campaign on Lightning protection system
- DST/MoES, ISRO HQ. Bangalore, SPL VSSC Thiruvananthapuram, SAC Ahmedabad under project mode
- IISC Bangalore under R & D Activity
- IITM Pune under collaborative project mode
- SAC Ahmedabad under R & D activity as well as Ph.D., M.Tech. research moe
- Birsa Agril. University under R & D mode
- NCMRWF, IIT Delhi, IIT Kharagpur, BHU Varanasi under R & D and project modes
- Collaboration with CMFRI, Dhanbad under research mode
- Inter-Departmental collaboration with other linkage Departments like Civil Engg., Dept. of Environmental and Remote Sensing, Polymer etc. under M.Tech. programme or data sharing basis
- Also established meteorological instruments for temperature (dry, wet, maximum and minimum), soil temperature (at different depths), bright sunshine hours, wind speed & direction, pressure, evaporation, rain gauge for rainfall etc.
- Installed Sky Radiometer to study aerosol and ozone depth with help of IITM Pune
- Started ARFI network Station at BIT Ranchi to monitor aerosol and black carbon for eastern India using Athalometer (Aerosol Optical Depth, Black Carbon, etc.) and Sun Photometer (AOD & AOT)
- Have started observations on upper air with ISRO based GPS-Sonde System for RS/RW system to study thunderstorm activity and Planetary Boundary Layer study under SPL's ABLN&C programme & under ISRO's PRWONAM scheme.
- Will install SODAR to study turbulence, MRR, MWR for temp profiling upto 30 km soon.
- Completed 3 R &D projects successfully in Atmospheric Science & Technology and 7 are in operational.
- Produced 3 Ph.D. and 6 are perusing.
- Published more than 50 research papers & 15 Proceed. during last five years
- Centre is involved in ISRO's satellite programme also. Conducted special experiment on Atmospheric Science at BIT during successful launches of
- PSLV-C17 launched GSAT - 12 on July 15, 2011 (Successful)
- PSLV-C16 launched RESOURCESAT - 2, YOUTHSAT and X-SAT on April 20, 2011 (Successful) and will participate INSAT-3D data utilizations and also will participate in PSLV-C18 launch which is scheduled for launch with Megha-Tropiques on 25th September, 2011 from SHAR, Gadanki under ISRO's PRWONAM field campaign.

16. RESEARCH PAPERS

i. Total Research Paper	: 170
ii. In Referred International Journals (Published/Under review)	: 47
iii. In National Referred Journal	: 15
iv. Popular Article	: 01
v. Proceedings in International Conf./Seminar/Symposium	: 02
vi. Proceedings in National Conf./Seminar/Symposium	: 09
vii. Book Chapters	: 03

- viii. Scientific Report : 02
 ix. Paper presented in International Conf./Sem./Symp. : 10
 x. Paper presented in National Conf./Sem./Symp. : 81

Sr. No.	Author List	Year	Title of the Paper	Full Journal Name	Vol. No. Page No./ DOI No.
1	Kumar, Manoj, B.R.D. Gupta, Vyas Pandey, A.M. Shekh and R.S. Parmar	2001	Roughness length and drag coefficients at Anand,	J.Agrometeorol	Vol.3 :(1 & 2), 133-142.
2	Kumar, Manoj, B.R.D. Gupta, A.M. Shekh, Vyas Pandey and H.R. Patel	2001	Assessment of surface radiation components at LASPEX sites.	J.Agrometeorol	Vol.3:(1 & 2), 79-88.
3	Pandey, Vyas, Manoj Kumar, and A.M. Shekh	2001	Agroclimatic features of LASPEX sites..	J.Agrometeorol	Vol.3:(1 & 2), 39-56.
4	Shekh, A.M., Manoj Kumar, Vyas Pandey and M.B. Savani	2001	Diurnal variations in soil temperature, momentum and sensible heat fluxes at Anand during LASPEX-97.	J.Agrometeorol.	Vol.3:(1 & 2), 97-106.
5	Shekh,A.M., Manoj Kumar, Vyas Pandey and R.B. Gajjar	2001	Radiation and energy budget components over cropped surface and bare soil surface.	J.Agrometeorol.	Vol.3:(1 & 2), 57-66.
6	Kumar Manoj, A. M. Shekh, Vyas Pandey, and H.R. Patel	2002	Energy budget study over a wheat (<i>Triticum aestivum</i>) crop field during LASPEX-97.	Ind. J. Agric. Sciences	72 (12):731-33, December 2002.
7	Kumar Manoj and A.M. Shekh	2004	An agroclimatic method of estimating NPP of natural vegetation at semi-arid region of India. (Sp.Vol.),.	J.Agrometeorol.	Vol.6:(Sp.Vol.), 177-185
8	Chaudhari, G. B., A.M. Shekh, K.I. Patel and Manoj Kumar	2004	Relationship Between pigeonpealeaf area index and actual evapotranspiration	J. Agrometeorol.	Vol.6:(Sp.Vol.), 33-37.
9	Shekh, A.M., Manoj Kumar, and R.S. Parmar	2004	surface processes and hydrological cycle over Sabarmati river catchment area.	J. Appl. Hydrology	Vol.XVII (4), Oct./Dec, 36-51.
10	Kumar Manoj, Vyas Pandey, and Shekh,A. M	2007	layer simulation of semi arid region of India using LASPEX-97 data.	J. Agrometeorol.	Vol.9 (1).

11	Mahanti, N.C. and Manoj Kumar	2007	Role of Mathematical Science in Meteorology and Work is being done in BIT.	BIT Magazine Magnum Opus	P.63-64
12	Pandey, Swati, Manoj Kumar and N C Mahanti	2008	Evaluating interrelationship of meteorological parameters using regression model: A case study from Ranchi, Jharkhand state, INDIA,	Ind. J. Soil Conservation	December 2008Vol.36 (3), 136-143.
13	Trivedi, Manish, Manoj Kumar, and K.N. Mishra	2009	Land Use / Land Cover Dynamics In A Coal Mining Area In Jharkhand State,.	Madhya Bharti, Journal of Physical and Natural Sciences,	Vol.55, 100- 111
14	Kumar Manoj and Vyas Pandey	2008	Validation of different Evapotranspiration models over semi arid region of India,	Int. J. IJMMSA, Korea	1 (2), 175- 186
15	Ripunjay Shukla, J.S. Patel, S. K. Dixit, Manish Trivedi and Manoj Kumar	2008	Efficient statistical modeling of area , production and productivity of groundnut (Arachis hypogaea, L) in semi arid region of India.,	Int J. IJMMSA, Korea	1(3), 321- 327.
16	Mallik Chinmay, Manoj Kumar, Anil Kumar, N.C. Mahanti and S. Chaudhari	2008	Pattern during South-West Monsoon period over the Indian region - A Statistical Approach.	Int. J. IJMMSA, Korea	1(4).
17	Kumar, Anil, V. Pandey, Manoj Kumar and A.M. Shekh	2008	Production Study in Soybean (Glycine max. [L] Merrill) with Response to Prevailing Weather Parameter, Agro-meteorological Indices to Seed and Stover Yield at Anand.	American Eurasian J. of Agronomy	1(2):31-33, 2008
18	Kumar, Anil, V. Pandey, A.M. Shekh, S.K. Dixit and Manoj Kumar	2008	Simulation of CROPGRO-Soybean (Glycine max. [L] Merrill) Model under Varying Environment Condition.	American Eurasian J. of Agronomy	1 (2): 34-40, 2008
19	Kumar, Anil, V. Pandey, and Manoj Kumar	2008	Water Use Efficiency and Weather Parameter Influence During Life Cycle of Soybean (Glycine max. [L] Merrill) Production as Well Accumulation of Dry Matter.	American- Eurasian Journal of Agronomy	1 (2): 41-44, 2008.
20	Kumar, Anil, V. Pandey, A.M. Shekh and Manoj Kumar	2008	Water and Yield Response of Soybean (Glycine max L.) In Relation to Temperature, Photoperiod and Sunshine Duration at Anand, Gujarat, India.,	American Eurasian J. of Agronomy	1(2): 45-50, 2008.
21	Trivedi, Manish, Manoj Kumar, and R.K. Shukla	2009	Weather Parameters to Develop Forest Fire Forecasting System,	Korean J. of Applied Statistics,	Volume25 22(1), February 2009, pp. 221-235

22	Trivedi, Manish, Manoj Kumar, and R.K. Shukla		series models for smoothing and forecasting weather parameters influencing forest fires,	Statistics in Transition	December 2008, pp 389-408
23	Pandey, Swati, Manoj Kumar, S. Chakravorthy, and N.C. Mahanti	2009	Statistical Approach to Examine the Impact of Various Meteorological Parameters on Pan Evaporation,	Korean J. of Applied Statistics (KJAS)	June, 2009 (Vol. 22 No. 3), pp.515-530
24	Kumar, Manoj, Vyas Pandey, and A.M. Shekh	2009	On resistance, leaf conductance, stomatal conductance and sensible heat flux in wheat crop as influenced by water stress at different plant growth stages,	World J. of Applied Sciences (IF:0.234)	6(6): 793-801
25	Kumar, Manoj, Anil Kumar, N.C. Mahanti, Chinmay Mallik and Ripunjay K Shukla	2009	Heat flux modelling using ARIMA technique in humid subtropical monsoon area. Published online in,	J. Atmos. & Solar Terrestrial Physics (IF: 1.99)	Vol. 71, 1293-1298.
26	Trivedi, M., Manoj Kumar and Ripunjai Shukla	2009	Statistical Modelling On Weather Parameters To Develop Forest Fire Forecasting System, Volume	Korean Journal of Applied Statistics (IF: 0.193)	22(1), February 2009, pp. 221-235
27	Trivedi, M., Manoj Kumar and Ripunjai Shukla	2009	Stochastic Approach For Smoothing And Modelling Rainfall In Humid Sub-tropical Monsoon Region,	Interstat.statjournal	August 2009, #2, pp. 1-16,
28	Kumar, Manoj, Chinmay Mallik, Anil Kumar, and N.C. Mahanti	2009	Evaluation of the boundary layer depth in semi arid region of India. Published online in	J. of Dynamics of Atmospheres and Oceans (IF: 2.17)	Volume 49, Issues 2-3, page.97-104.
29	Shukla, Ripunjai, M. Trivedi and Manoj Kumar	2010	On the proficient use of GEV distribution: a case study of subtropical monsoon region in India,	Anale. Seria Informatics (IF: 1.338)	pp 81-92. Vol. VIII fasc. I – 2010
30	Trivedi, M., Manoj Kumar and Ripunjai Shukla	2010	Extreme Value Modelling of Maximum Temperature: A case study In Humid Subtropical Monsoon Region In India, ,	Statistics in Transition	Vol. 11, No. 2, 91-104, August 2010
31	Kumar, Manoj, Anil Kumar, Chinmay Mallik, N.C. Mahanti and A M Shekh	2010	Daytime Boundary Layer Behavior over eastern region (perhumid climate) and Western regions (semi arid climate) of India-A Case Study,	J. Meteorology and Atmospheric Physics (IF: 1.37)	Vol.111 (1-2), 55-64

32					
33	Kumar, Manoj, A.M. Shekh and Vyas Pandey.	2011	Study of land surface processes over different soil surfaces over Semi arid region of India,	Nava Gavesana, An International Research Journal	2011
34	Manoj Kumar, Kumari Lipi, S Sureshbabu, N C Mahanti and A Wadood	2011	Aerosol Properties over Ranchi measured from Aethalometer,	ACS, Scientific Research Publ., USA	2011 (1), 91-94
35	Pandey, Swati, Manoj Kumar, S. Chakraborty, and N C Mahanti	2011	Analyzing the variability of rainfall for drought in Jharkhand state: A statistical approach. Published online in Wiley Online Library,	J. Irrigation & Drainage (IF: 1.13)	Vol.60(4),p. 556-566
36	Singh, Jyotsna, Bimal K Bhattacharya, Manoj Kumar and K. Mallik	2011	Modeling Monthly Diffuse Solar Radiation Fraction and its Validity over Indian Sub-Tropics.	J. of Climatology, Wiley Publication (IF: 2.886)	Published Online 2011 DOI: 10.1002/joc.3408
37	Singh, Jyotsna Bimal K. Bhattacharya and M. Kumar.	2012	Solar Radiation and Evaporation Trend over India	Journal of Earth Science and Engineering	April, 2012
38	Singh, Jyotsna M. Kumar and Bimal K. Bhattacharya.	2012	Global Radiation, Transmissivity and Bright Sunshine Hour trend over Nagpur,	Atmospheric and Climate Sciences, Scientific Research Publishing, USA. (IF: 0.20)	Volume 2, Number 3, March 2012, 160-165
39	Swati Pandey, A. C. Pandey, M. S. Nathawat, Manoj Kuma and NC Mahanti. 2012	2012	Drought hazard assessment using geoinformatics over parts of Chotanagpur plateau region, Jharkhand, India,	Nat Hazards DOI 10.1007/s11069-012-0093-9 (IF: 1.639)	September 2012, Volume 63, <u>Issue 2</u> , pp 279-303
40	Bhishma Tyagi ¹ , A.N.V. Satyanarayana, Manoj Kumar, N.C. Mahanti	2012	Surface energy and radiation budget over a tropical station: An observational approach study November 2012	<u>Asia-Pacific Journal of Atmospheric Sciences</u> (IF: 0.869)	Volume 48, <u>Issue 4</u> , pp 411-421
41	Abhay Srivastava, Manoj Kumar, and Arun K.	2012	Studies of Atmospheric Parameters during SW Monsoon Period Associated with Severe	ISRN Meteorology,	vol. 2012, Article ID 975790, 3

	Dwivedi		Cyclone Aila and Lightning Occurrence over Ranchi Region, 2012		pages. doi:10.5402 /2012/9757 90
42	Manoj Kumar	2013	Short-period oscillations in the earth's atmospheric parameters during a total solar eclipse on July 22, 2009 & annular solar eclipse on January 15, 2010 in India, 2012	IJEP, Academic Publication	
43	R. Latha, B.S. Murthy, Manoj Kumar, S. Jyotsna, K. Lipi	2013	Aerosol radiative forcing controls: Results from an Indian table-top mining region, 2013	Atmospheric Environment (IF-3.787)	81 (2013) 687-694
44	R. Latha, B.S. Murthy, Manoj Kumar, S. Jyotsna, K. Lipi, G. Pandithurai, N.C. Mahanti	2013	Aerosol Optical Properties and Composition over a Table Top Complex Mining Area in the Monsoon trough Region, 2013	<i>Aerosol and Air Quality Research</i> , (IF-2.83)	x: 1-12, xxxx
45	B.S. Murthy, R. Latha, Manoj Kumar	2013	Influence of tropical cyclone 'AILA' on atmospheric surface layer turbulence and fluxes at Ranchi during its landfall	<i>Atmospheric Science Letters</i> (IF-1.75), Royal Met Soc.	11/2013; DOI:10.1002 /asl2.474
46	Kumari Lipi and Manoj Kumar	2013	Aerosol behaviour over Ranchi, 2013	European Scientific Journal	December 2013 edition vol.9, No.36 (Print)
47	Kumari Lipi and Manoj Kumar	2013	Study of Aerosol black carbon and Aerosol optical Depth over Ranchi during winter in Northern India, October - 2013	International Journal of Engineering Research & Technology (IJERT)	Vol. 2 Issue 10,
48	M. N. Patil, Manoj Kumar, R. T. Waghmare, T.	2013	Evaluation of Noah-LSM for soil hydrology parameters in the	Theor Appl	DOI 10.1007/s00

	Dharmaraj , N. C. Mahanty		Indian summer monsoon conditions, 2013	Climatol (IF-1.8)	704-013-1046-2,
49	Priyanka Jha,Manoj Kumar, PD Meena,HC Lal	2013	Dynamics and management of Iternaria blight disease of Indian mustard, 2013	Journal of Oilseed Brassica, 4	Vol 4(2), 66-77
50	C. K. Unnikrishnan, M. Rajeevan, S. Vijaya Bhaskara Rao, Manoj Kumar	2013	Development of a high resolution land surface dataset for the South Asian monsoon region, 2013	Current Science, (IF: 1.0)	VOL. 105, NO. 9, 10 NOVEMBER 2013
51	Tripta Narayan & Manoj Kumar	2013	Statistical Analysis Of Land Surface Processes And Role Of Convection In The Variation Of Tropopause Height Above Ranchi Region, 2013	Mathematical Sciences International Research Journal	Vol.1(4)
52	<u>Anil Kumar</u> , Manoj Kumar, N. C. Mahanti L.D. Saraswat, V. Pandey and A. Wadood	2013	Long term trend analysis on precipitation and temperature along eastern end of monsoon trough of Ranchi, Jharkhand India, 2013	<i>Int. J. Envi. Sci. Tech.</i>	2(2): 1-10
53	<u>Anil Kumar</u> , Manoj Kumar, L. D. Saraswat and N. C. Mahanti	2013	The mesoscale measurement of surface energy (land surface) during the summer monsoon and thunderstorm period in per humid climate condition	<i>Int. J. Environ. Sci. Tec.,</i>	Vol. 2(1): 56-69
54	<u>Anil Kumar</u> , Manoj Kumar, L. D. Saraswat and N. C. Mahanti	2013	The comparative computation of Net radiation and PET using slow response sensor data over per humid climatic condition Ranchi Jharkhand	<i>Int. J. Environ. Sci. Tec.,</i>	Vol. 2(1): 48-55
55	Swati Pandey, Manoj Kumar, Soubhik Chakraborty and N.C.	2014	A Statistical Comparison of Reference Evapotranspiration Methods: A Case Study from Jharkhand State of India, 2014	International Journal of Innovative Research in	Vol.3(1): 8765-8777

	Mahanti			Science, Engineering and Technology,	
56	Swati Pandey, Manoj Kumar and N C Mahanti	2014	Assessment of drought severity in various regions of Jharkhand state of India, 2014	ISCA-IRJEvS	
57	Kumari Lipi and Manoj Kumar	2014	Aerosol and Black Carbon Over Indo-Gangetic Basin During Lighting Festival (Diwali) Period Using Aethalometer and Back Trajectory Datasets, 2014	International Journal of Engineering Research & Technology (IJERT)	Vol. 3 Issue 1,

**DR. PURABI SAIKIA**

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Centre for Environmental Sciences
School of Natural Resource Management
Central University of Jharkhand
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EDUCATIONAL QUALIFICATIONS:

Post Doctoral Research in Environmental Sciences (Tezpur University, Assam) sponsored by Department of Biotechnology, Govt. of India, New Delhi

Ph. D. in Forestry (NERIST, Deemed University, Arunachal Pradesh)

M. Sc. in Botany with Plant Ecology specialization (Gauhati University, Assam)

B. Sc. in Botany (Hons.) (Dibrugarh University, Assam)

FIELDS OF INTEREST

- Plant Ecology
- Plant Systematics
- Biodiversity Conservation
- Soil Sciences

COURSES TEACH

- Environment and Ecology (ES 3200)
- Field Practices (FR 2251)
- Environmental Studies (EVS 110060)
- Principles of Environmental Sciences and Ecology (ENV 111040)
- Environmental Chemistry (ENV 121050)
- Environmental Biology (ENV 211010)
- Fundamentals of Soil Science (ENV 221010)
- Environmental Biology/Ecology (BIO 221040)
- Systematics and Biodiversity of Plants (BIO 221010)
- Forestry and Wildlife Management (ENV 315040)
- Ecology Lab (ENV 112070)
- Environmental Biology Lab (ENV 212060)
- Soil Science Lab (ENV 222060)

Dr. Saikia is presently working as an Assistant Professor in the Centre for Environmental Sciences, Central University of Jharkhand, Ranchi. She is basically an ecologist working in the broad areas of plant ecology including population and regeneration ecology, biodiversity conservation, systematic botany, agronomy, forestry and conservation of endangered species. She is well acquainted with the methods of ecology, diversity, vegetation sampling, development of conservation strategies and regeneration study. Recently, she has received UGC-Start-Up grant of Rs. 06.00 lakhs to initiate a project 'Phytosociological analysis of forests of Ranchi, Jharkhand, India'. She is recipient of DBT Research Associateship under Department of Biotechnology, Govt. of India, New Delhi and completed one year one month of her post-doctoral research on the topic 'Comparative study on regeneration pattern and population status of cultivated variants of *Aquilaria malaccensis*: a critically endangered tree species of India' in the Department of Environmental Sciences, Tezpur University, Assam. She had completed her Ph. D. in Forestry from NERIST (Deemed University), Arunachal Pradesh on the thesis title 'Population structure and conservation practices of *Aquilaria*

malaccensis Lam. in homegardens of upper Assam and its prospects in socio-economic development'. She had also worked as JRF (two years) and SRF (one year two months) in a DBT, Govt. of India sponsored research project entitled 'Mapping and Quantitative Assessment of Geographic Distribution and Population Status of Plant Resources of Eastern Himalayan Region' in the Department of Forestry, NERIST (Deemed University), Arunachal Pradesh. She has published eight International refereed articles in different reputed SCI journals, three national refereed articles, one proceeding paper in the field of plant ecology, conservation biology, agronomy and plant systematics. She has also been participated with oral presentations in seven different international (abroad as well as in country), national and regional symposium, seminar and conference.

RESEARCH GRANT

- Recipient of UGC Start-Up grant of Rs. 6.00 lakhs for the project 'Phytosociological analysis of forests of Ranchi, Jharkhand, India' in 2014.

FELLOWSHIP/AWARD

- Recipient of DBT-Research Associateship under Department of Biotechnology, Govt. of India, New Delhi in 2011.

EXPERIENCES

- Working as an Asst. Professor in Centre for Environmental Sciences, Central University of Jharkhand, Ranchi since 30-05-2013.
- Worked as an Asst. Professor (on contract) in Centre for Environmental Sciences, Central University of Jharkhand, Ranchi from 06-08-2012 to 28-05-2013.
- Worked as a DBT-Research Associate under DBT, Govt. of India, New Delhi in Department of Environmental Science, Tezpur University, Assam from 01-07-2011 to 31-07-2012.
- Worked as a Guest Lecturer in Department of Forestry, NERIST (Deemed University), Arunachal Pradesh from 06-01-2011 to 31-05-2011 (One Semester).
- Worked as a Senior Research Fellow in a DBT, Govt. of India sponsored research project entitled "Mapping and Quantitative Assessment of Geographic Distribution and Population Status of Plant Resources of Eastern Himalayan Region" in Department of Forestry, NERIST (Deemed University), Arunachal Pradesh from 01-04-2009 to 31-05-2010.
- Worked as a Junior Research Fellow in the same above mentioned research project from 02-04-2007 to 31-03-2009.

DETAILS OF RESEARCH PUBLICATIONS

- Published research articles: 13
- Under revision: 02
- Abstracts: 08

Research articles published/ accepted in Referred Journals

1. **P. Saikia** and M.L. Khan (2014) On farm conservation of Agarwood (*Aquilaria malaccensis* Lam.) in Indian homegardens. *International Journal of Biodiversity Science, Ecosystem Services & Management* (in press). ISSN: 2151-3732 (Print); 2151-3740 (Online); Taylor & Francis.
2. **P. Saikia** and M.L. Khan (2014) Status, distribution and socio-cultural uses of some selected homegarden plants of upper Assam, Northeast India. *Bharatiya Samajik Chintan (ISSA)* 13(3) (in press).

3. **P. Saikia** and M.L. Khan (2014) Ecological features of cultivated stands of *Aquilariamalaccensis* Lam. (Thymelaeaceae)- a vulnerable tropical tree species in Assamese homegardens. *International Journal of Forestry Research* **2014**: 1-16. **ISSN: 1687-9368 (Print), 1687-9376 (Online); Hindawi Publishing Corporation.**
4. **P. Saikia** and M.L. Khan (2013) Population structure and regeneration status of *Aquilaria malaccensis* Lam. in homegardens of upper Assam, NE India. *Tropical Ecology* **54**(1): 1-13. **ISSN: 0564-3295; Impact Factor: 0.551; Citation: 3**
5. **P. Saikia**, B.I. Choudhury and M.L. Khan (2012) Floristic composition and plant utilization pattern in homegardens of Upper Assam, India. *Tropical Ecology* **53**(1): 105-118. **ISSN: 0564-3295; IF: 0.551; Citation: 7**
6. **P. Saikia** and M.L. Khan (2012) *Aquilaria malaccensis* Lam., a Red-listed and highly exploited tree species in Assamese home garden. *Current Science* **102**(4): 546-547. **ISSN: 0011-3891; IF: 0.833; Citation: 2**
7. **P. Saikia** and M.L. Khan (2012) Agar (*Aquilaria malaccensis* Lam.): a promising crop in the homegardens of Upper Assam, northeastern India. *Journal of Tropical Agriculture* **50**: 8-14. **ISSN: 0971-636X (Print); 0973-5399 (Online) Citation: 3**
8. **P. Saikia** and M.L. Khan (2012) Seedling survival and growth of *Aquilaria malaccensis* Lam. in different microclimatic conditions of northeast India. *Journal of Forestry Research* **23**(4): 569-574. **ISSN: 1007-662X (Print); 1993-0607 (Electronic); Springer Publication.**
9. S. Bharali, J. Deka, **P. Saikia**, M.L.Khan, A. Paul, O.P. Tripathi, L.B. Singha and Uma Shankar (2012) *Pinus merkusii* Jungh et de Vries - a vulnerable gymnosperm needs conservation. *NeBIO* **3**(1): 94-95. **ISSN: 0976-3597 (Print); Citation: 1**
10. **P. Saikia** and M.L. Khan (2012) Phenology, seed biology and seedling survival and growth of *Aquilaria malaccensis*: A highly exploited and red listed tree species of Northeast India. *The Indian Forester* **138**(3): 289-295. **ISSN: 0019-4816**
11. L. Zimik, **P. Saikia** and M.L. Khan (2012) Comparative study on homegardens of Assam and Arunachal Pradesh in terms of species diversity and plant utilization pattern. *Research Journal of Agricultural Sciences (An International Journal)* **3**(3): 611-618. **ISSN: 0976-1675; Citation: 1**
12. **P. Saikia** and M.L. Khan (2011) Diversity of medicinal plants and their uses in homegardens of upper Assam, Northeast India. *Asian Journal of Pharmaceutical and Biological Research* **1**(3): 296-309. **ISSN: 2231-2218 (Online); Citation: 1**
13. **P. Saikia** and M.L. Khan (2009) Conservation and diversity of medicinal plant in homegardens of Teok area of Jorhat district, Assam. In: B. Singh, P. Rethy and P.R. Gajurel (eds). *Proceedings of national seminar on Agroforestry for Socioeconomic Development of North Eastern Region*. Department of Forestry, NERIST (Deemed University), Arunachal Pradesh, pp. 152-161.

Abstract published/accepted in proceedings and abstract volume for oral presentation

1. **P. Saikia**, J. Deka, S. Bharali, O.P. Tripathi and M.L. Khan (2014) Inventory on population status and diversity of tree species of West Kameng district of Arunachal Pradesh, Eastern Himalaya using Geoinformatics Technology. **Paper accepted** for oral presentation in an International event ‘**Tropical Ecology Congress, 2014**’ to be held at JNU, New Delhi during 10th to 12th December, 2014.
2. **P. Saikia** and M. L. Khan (2013) Cultivation of *Agaru* (*Aquilaria malaccensis* Lam.) in homegardens of upper Assam, Northeast India and its prospect in socioeconomic development. **Paper presented** and abstract published in page 42 of the abstract volume of the 1ST **International Scientific Symposium** on Agarwood (ISSA) on ‘*Agarwood in the New Era*’ organized by Faculty of Forestry, Universiti Putra Malaysia, Malaysia.

3. **P. Saikia** and Ashalata Devi (2012) Cultivation and prospects of energy crop in homegardens of upper Assam, northeast India. **Paper presented** and abstract published in page 210 in the *Proceedings of the International Seminar and Workshop on 'Energy, sustainability and development (ISWESD) with special focus on nanoscience and nanotechnology'* organized by Department of Physics, Sibsagar College, Joysagar, Assam in collaboration with CSIR-NEIST, Jorhat, Assam, India.
4. **P. Saikia** (2012) Population status of *Aquilaria malaccensis* Lam.: a critically endangered tree species of India in Assamese homegardens. **Paper presented** and abstract published in page 31 in the *Proceedings of the International Conference on 'Biodiversity and sustainable energy development'* organized by OMICS Publishing Group at **HICC, Hyderabad, India.**
5. **P. Saikia** and M.L. Khan (2011) Homegarden: An approach for on farm conservation of *Aquilaria malaccensis* Lam. **Paper presented** and abstract published in pages 6-7 in the *Abstract volume of the National Seminar on Present environment and strategy for biodiversity conservation* organized by Department of Economics, Dhemaji Commerce College, Dhemaji, Assam in collaboration with Dhemaji-Dhakuakhana zone, ACTA.
6. **P. Saikia** and M.L. Khan (2011) Conservation and management practices of plant genetic resources in homegardens of Teok area of Jorhat district, Assam. **Paper presented** and abstract published in page 84 in the *Abstracts of the papers of the National Seminar on Plant resource management and conservation strategies in NE region* organized by Department of Botany, Cotton College, Guwahati, Assam in collaboration with Assam Science Technology and Environment Council, Guwahati, Assam.
7. **P. Saikia** and M.L. Khan (2009) Diversity and Prospects of Biodiesel producing species in NE India. **Paper presented** and abstract published in page 138 in the *Proceedings of Regional Seminar on Biofuels in North East India: Issues and Prospects* organized by Department of Mechanical Engineering, NERIST (Deemed University), Arunachal Pradesh.
8. **P. Saikia** and M.L. Khan (2009) Conservation of *Aquilaria malaccensis* Lam. in homegardens of upper Assam, NE India. **Paper presented** and abstract published in page 43 in the *Abstracts of papers of the National Seminar on Exploration, Utilization and Strategy Action Plan for Sustainable Management of Plant Resources* organized by Department of Botany, Gauhati University, Guwahati, Assam.

Seminar/Workshop/Conference Participation/ Organized

- Program organized: 03
- International in Abroad: 01 (with paper)
- International in India: 03 (with papers)
- National: 03 (with papers); 02 (without papers)
- Regional: 01 (with paper); 02 (without papers)
- Workshop/Training Program: 01 (more than one week); 06 (less than one week)
- Orientation Program: 01 (four weeks)

Program Organized

- Centre for Environmental Sciences celebrated **World Ozone Day** on 18th September, 2013 at Central University of Jharkhand, Brambe, Ranchi.
- Centre for Environmental Sciences & Centre for Water Engineering and Management jointly celebrated **World Water Day** on 21st and 22nd March, 2013 at Central University of Jharkhand, Brambe, Ranchi.

- Centre for Environmental Sciences & Centre for Land Resource Management jointly celebrated *World Ozone Day* on 16th September, 2012 at Central University of Jharkhand, Brambe, Ranchi.

Participation in Orientation/Training Program

- Attended and successfully completed a **Four weeks (Twenty eight days)** UGC sponsored **Orientation Program** organized by UGC-Academic Staff College, Ranchi University, Ranchi from 14th July to 10th August, 2014 and obtained **A Grade**.
- Attended and successfully completed a **ten days Workshop cum Training Program** on “Taxonomy, ecology and conservation” organized by Centre for Environmental Management of Degraded Ecosystems (CEMDE), University of Delhi, New Delhi from 29th December, 2009 to 07th January, 2010.

CV of Dr. Bhaskar Singh

Present Designation

Assistant Professor
Centre for Environmental Sciences
School for Natural Resources Management
Central University of Jharkhand, Ranchi

Areas of Specialization

Biodiesel
Renewable Energy
Rainwater harvesting & groundwater recharge
Wastewater treatment

Dr. Bhaskar Singh is presently working as Assistant Professor in the Centre for Environmental Sciences at Central University of Jharkhand. Bhaskar Singh holds Ph. D. from Indian Institute of Technology (BHU) (2010) and M. Phil. from Pondicherry (Central) University, India with a gold medal (2006). Dr. Singh is the recipient of the prestigious fellowships from UGC and CSIR for Junior Research Fellowship, Senior Research Fellowship and Research Associateship. Bhaskar Singh has qualified UGC NET in Environmental Sciences. Bhaskar Singh did his post doctoral research from Durban University of Technology, Durban, South Africa. His past experience includes working as Assistant Professor in Department of Environmental Science at Central University of Rajasthan. Dr. Singh worked on rainwater harvesting during his M. Phil. His Ph. D research work lead to investigation of non-edible seeds of plants of Indian origin as feedstocks for the synthesis of biodiesel. Dr. Singh has also worked on adsorption techniques for the removal of metals and dyes from the simulated wastewater. His current interests lie in the application of algal biomass for biodiesel synthesis and development of heterogeneous catalysts. Dr. Singh also has keen interest in rainwater harvesting and ground water recharge which could be adopted in Ranchi where the average annual rainfall is 1530 mm.

Research Papers in peer reviewed International Journals

1. Sharma YC, **Singh B**, Agrawal A, Weng CH. (2008) Removal of Chromium by riverbed sand from water and wastewater: Effect of important parameters. *J Hazard Mater.* **151** 789-793. Elsevier. **ISSN:** 0304-3894, Cited By in Scopus (17)
2. Sharma YC, **Singh B**. (2008) Development of biodiesel from karanja, a tree found in rural India. *Fuel* **87** 1740-1742. Elsevier. **ISSN:** 0016-2361, Cited By in Scopus (74)
3. Sharma YC, **Singh B**, Uma. (2009) Fast Removal of Malachite Green by Adsorption on Rice Husk Activated Carbon. *The Open Environmental Pollution & Toxicology Journal.* **1** 74-78. Benthamscience. **ISSN:** 1876-3979
4. Response to the comments on “Advancements in development and characterization of biodiesel: A review”. Sharma YC, Singh B, Upadhyay SN. *Fuel* 2008;87:2355–73 by Clifford Jones. *Fuel* **88** 768-769. 2009 Impact Factor 2.536. **ISSN:** 0016-2361, Cited By in Scopus (2)
5. Sharma YC, **Singh B**. (2010) An ideal feedstock, kusum (*Schleichera triguga*) for preparation of biodiesel: Optimization of parameters. *Fuel* **89** 1470-1474. Elsevier. **ISSN:** 0016-2361, Cited By in Scopus (12)
6. Sharma YC, **Singh B**, Korstad J. (2010) High yield and conversion of biodiesel from a non-edible feedstock (*Pongamia pinnata*) *J Agr Food Chem.* **58** 242-247. ACS Publications. **ISSN:** 0021-8561, Cited By in Scopus (11)
7. Sharma YC, **Singh B**, Korstad J. (2010) Application of an efficient nonconventional heterogeneous catalyst for biodiesel synthesis from *Pongamia pinnata* oil *Energ Fuel.* **24** 3223-3231. ACS Publications. **ISSN:** 0887-0624, Cited By in Scopus (23)
8. Sharma YC, **Singh B**. (2010) A Hybrid feedstock for a very efficient preparation of biodiesel *Fuel Process Technol.* **91** 1267-1273. ACS Publications. **ISSN:** 0378-3820, Cited By in Scopus (3)

9. **Singh B**, Bux F, Sharma YC. (2011) Comparison of homogeneous and heterogeneous catalysis for synthesis of biodiesel from *M. indica* oil *Chem Ind Chem Eng Q.* **17** 117-124. **ISSN:** 1451-9372, KoBSON [Cited By in Scopus \(1\)](#)
10. Birla A, **Singh B**, Sharma YC, Upadhyay SN. (2012) Kinetics studies of synthesis of biodiesel from waste frying oil using a heterogeneous catalyst derived from Snail shell *Bioresourc Technol.* **106** 95-100. **ISSN:** 0960-8524, Elsevier. [Cited By in Scopus \(7\)](#)
11. Sharma YC, Agrawal S, **Singh B**, Frometa AEN. (2012) Synthesis of economically viable biodiesel from waste frying oils (WFO). *The Cana J of Chem Eng.* **90** 483-488, **ISSN:** 1939-019X, Wiley Online Library.
12. Agrawal S, **Singh B**, Sharma YC (2011) Exoskeleton of a mollusk (*Pila globosa*) as a heterogeneous catalyst for synthesis of biodiesel using used frying oil. *Ind. Eng. Chem. Res.* DOI: 10.1021/ie202404r, **ISSN:** 0888-5885, ACS Publications. [Cited By in Scopus \(2\)](#)
13. Sharma YC, **Singh B**, Agrawal S. (2012) A low cost synthesis of biodiesel at room temperature and purification of by-product- glycerol for reuse. *Biomass Conv Bioref.* **2** 63-71. **ISSN:** 2190-6815, Springer
14. Nair P, **Singh B**, Sharma YC, Upadhyay SN. (2012) Synthesis of biodiesel from waste frying oil using calcium oxide derived from *Mereterix mereterix* as a heterogeneous catalyst. *J. Clean. Prod.* **29-30** 82-90, **ISSN:** 0959-6526, Elsevier. [Cited By in Scopus \(4\)](#)
15. **Singh B**, Birla A, Upadhyay SN, Sharma YC (2012) Synthesis of biodiesel using a new heterogenous catalyst, potassium fluoride (KF) supported by hydrotalcite and process optimization by Box–Behnken design. *Biomass Conv Bioref.* **2** 317-325. **ISSN:** 2190-6815, Springer
16. Agrawal S, **Singh B**, Frometa AEN, Sharma YC Commercial- and whitewashing-grade limestone as a heterogeneous catalyst for synthesis of fatty acid methyl esters from used frying oil (UFO). *Biomass Conv. Bioref.* DOI 10.1007/s13399-012-0052-4. **ISSN:** 2190-6815, Springer
17. Sharma YC, **Singh B**, Upadhyay SN. (2008) Advancements in development and characterization of biodiesel: A review *Fuel* **87** 2355-2373. Elsevier. **ISSN:** 0016-2361, [Cited By in Scopus \(319\)](#)
18. Sharma YC, **Singh B**. Development of biodiesel: Current scenario (2009) *Renew Sust Energ Rev.* **13** 1646-1651. Elsevier. **ISSN:** 1364-0321, [Cited By in Scopus \(103\)](#)
19. Sharma YC, **Singh B**, Korstad J. (2011) Latest developments on application of heterogenous basic catalysts for an efficient and eco friendly synthesis of biodiesel: A review *Fuel*, **90** 1309-1324. Elsevier. **ISSN:** 0016-2361, [Cited By in Scopus \(37\)](#)
20. Sharma YC, **Singh B**, Korstad J. (2011) Advancements in solid acid catalysts for ecofriendly and economically viable synthesis of biodiesel *Biofuel Bioprod Bior* **5** 69-92. Society of Chemical Industry (SCI) and John Wiley & Sons Ltd. **ISSN:** 1932-1031, [Cited By in Scopus \(28\)](#)
21. Sharma YC, **Singh B**, Korstad J. (2011) A critical review of recent methods used for economically viable and eco-friendly development of microalgae as a potential feedstock for synthesis of biodiesel. *Green Chemistry* **13** 2993-3006. Royal Society of Chemistry (RSC) Publishing. **ISSN:** 1463-9262 [Cited By in Scopus \(11\)](#)
22. **Singh B**, Korstad J, Sharma YC. (2012) A critical review on corrosion of compression ignition (C.I.) engine parts by biodiesel and biodiesel blends and its inhibition. *Renew Sust Energ Rev.* **16** 3401-3408. Elsevier. **ISSN:** 1364-0321 [Cited By in Scopus \(4\)](#)
23. **Singh B**, Guldhe A, Rawat I, Bux F. (2014) Towards a sustainable approach for development of biodiesel from plant and microalgae. *Renew Sust Energ Rev.* **29** 216-245. Elsevier.

Chapters in a Book

24. Prospects of heterogeneous catalysts in biodiesel development. Sharma YC, **Singh B**,

Upadhyay SN. Handbook of Sustainable Energy (Energy Science, Engineering and Technology Series). Editor: W.H. Lee and V.G. Cho. **Nova Science. Publishers, Inc., Hauppauge, NY, 2010**. 11788. USA. ISBN:978-1-60876-263-7, Chapter # 12, pp: 487-520.

25. Emergence of base catalyst for synthesis of biodiesel. **Singh B**, Upadhyay SN, Mohan D, Sharma YC. Green Chemistry for Environmental Remediation, Editor: Rashmi Sangha, Vandana Singh. **Scrivener Publishing LLC, USA, 2011** ISBN: 9780470943083, Chapter # 9, pp: 251-289.
26. Synthesis of biodiesel/bio-oil from microalgae. Singh B, Liu Y, Sharma YC. Biotechnological Applications of Microalgae: Biodiesel and value-added products, Editor: Faizal Bux. **CRC Press (Taylor & Francis Group), USA, 2013** ISBN: ISBN:978-1-4665-1529-1, Chapter # 8, pp: 99-112.

Paper in National Seminar

27. Roof top rainwater harvesting for artificial recharge to groundwater: an urgent need of present century. Singh PK, **Singh B**, Tiwary BK. Proc: National Seminar on Rainwater Harvesting and Water Management, **2006**, Institution of Engineers, Nagpur. (Full Paper published in Proceeding).

Dr. Kuldeep Bauddh

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Dr. Kuldeep Bauddh is presently working as an Assistant Professor of Center for Environmental Sciences at Central University of Jharkhand, Ranchi (India). Dr. completed his Graduation (B.Sc.) in Biological Sciences from University of Lucknow, Lucknow and Masters (M.Sc.) in Environmental Science from Babasaheb Bhimrao Ambedkar University (A Central University), Lucknow. He completed his Ph.D. in Environmental Science at Babasaheb Bhimrao Ambedkar University on the topic “A comparative study on tolerance mechanism and phytoremediation potential of Indian mustard (*Brassica juncea* L.) and castor (*Ricinus communis* L.) in nickel and cadmium contaminated soil”.

Dr. Bauddh published 6 general articles in reputed magazines, 3 book chapters and 23 original research papers in various International and National research journals. He is working as Assistant Editor of Journals “Climate Change and Environmental Sustainability” (www.indianjournals.com). He is also working as Joint Secretary of the society “The Society for Science of Climate Change and Sustainable Environment (www.ssceindia.org)” and Executive Member of the society “Professor H.S. Srivastava Foundation for Science and society (www.phssfoundation.org.in)”. He is working as reviewer of some reputed international journals like Ecological Engineering, Chemosphere, Clean; Soil, Air and Water, Bulletin of Environmental Contamination and Toxicology, International Journal of Phytoremediation and Bioremediation Journal.

Dr. Bauddh completed three months training on “Management and Utilization of Distillery Waste (Effluent Treatment Plant)” at Mohan Meakin Limited (Distillery), Lucknow, India. He completed a short term training program on Vermicompost-Biofertilizer, conducted by Biotechnology Park, Lucknow, India and six month research work on toxic effects of heavy metals of early seedlings growth of the plants during masters program.

Area of Specialization

- Remediation of inorganic soil contaminants.
- Industrial waste water treatment and its possible utilization in agricultural sector.
- Sustainable agriculture.

Working as Reviewer of International Journals

Journal Name	Publisher	Impact Factor
1. Chemosphere	Elsevier	3.499
2. Ecological Engineering	Elsevier	3.041
3. Sustainability of Water Quality and Ecology	Elsevier	-----
4. International Journal of Phytoremediation	Taylor and Francis	1.466
5. Clean Soil, Air and Water	Wiley	1.834
6. Bulletin of Environmental Contamination & Toxicology	Springer	1.216

Project Awarded: Awarded UGC Start-up Grant (Rs. 6.0 Lacks)

Publications

Book Chapters

- [1] **Bauddh, K.**, Sainger, M., Kumar, S., Sainger, P. A., Singh, R.P. Biotechnological approaches to mitigate adverse effects of extreme climatic factors on plant productivity (In Press)

Articles in Magazines

- [1] **Bauddh K.** *Ricinus communis* a multipurpose crop for sustainable environment. **Dream-2047. 16, 11-12.**
- [2] Singh, M. and **Bauddh, K.** (2014) Application of Scientific information in commercial advertisements. **Science Reporter, August, 2014, 18-19.**

Research Papers

- [1] **Bauddh, K.** and Singh R.P. Studies on bio-accumulation and partitioning of Cd in *Brassica juncea* and *Ricinus communis* in presence of vermicompost, chemical fertilizers, biofertilizers and customized fertilizers. Ecological Engineering (2014). DOI: 10.1016/j.ecoleng.2014.10.022 [Impact Factor: ISI=3.041].
- [2] Kumar, S., **Bauddh, K.**, Barman, S.C., Singh, R.P. Amendments of microbial biofertilizers and organic substances reduces requirement of urea and DAP with enhanced nutrient availability and productivity of wheat (*Triticum aestivum* L.). Ecological Engineering, 71(2014): 432-437. [Impact Factor: ISI=3.041]
- [3] **Bauddh, K.** and Rana P. Singh. Comparative potential of castor bean (*Ricinus communis* L.) and Indian mustard (*Brassica juncea* L.) for tolerance and phytoremediation of nickel from nickel containing soil. Bioremediation Journal (2014; In Press). [Impact Factor: ISI=0.728].
- [4] Sainger M., Sharma A., **Bauddh K.**, Sainger P. A. and Singh R. P. Remediation of nickel contamination from the sub-tropical soil of northern India using Indian mustard (*Brassica juncea* l.) and effect of the metal on growth, nitrate assimilation, diamine metabolism and proline accumulation in the plant. Bioremediation Journal, (2014) 18, 100-110. [Impact Factor: ISI=0.728].
- [5] Kumar, S., **Bauddh, K.**, Barman S.C., and Singh R.P. Organic Matrix Entrapped Bio-Fertilizers Increase Growth, Productivity and Yield of *Triticum aestivum* L. and Mobilization of NO_3^- , NO_2^- , NH_4^+ and PO_4^{3-} from Soil to Plant Leaves. Journal of Agricultural Sciences and Technology (2014) 16, 315-329. [Impact Factor: ISI=0.426]
- [6] Kumar M., **Bauddh K.**, Sainger M., Sainger P. A. and Singh R. P. Increase in growth, productivity and nutritional status of wheat (*Triticum aestivum* L.) and enrichment in soil microbial population applied with biofertilizers entrapped with organic matrix. *Journal of Plant Nutrition* (2014). <http://dx.doi.org/10.1080/01904167.2014.957391>. [Impact Factor: ISI=0.526].
- [7] Kumar N., Kumar S., **Bauddh, K.**, Dwivedi, N., Singh, D.P. and Barman, S.C. Toxicity assessment of flash light manufacturing industry effluent by bioassays. Journal of Environmental Biology (2014). (In Press) [Impact Factor: ISI=0.64].
- [8] Kumar N., Kumar S., **Bauddh, K.**, Dwivedi, N., Singh, D.P. and Barman, S.C. Toxicity assessment and accumulation of metals in radish irrigated with battery manufacturing industry effluent. International Journal of Vegetable Science (2014) 10.1080/19315260.2014.880771.
- [9] Kumar N., **Bauddh, K.**, Kumar S., Dwivedi N., Singh, D.P. and Barman, S.C. Heavy metal uptake by plants naturally grown on industrially contaminated soil and their phytoremediation potential. Ecological Engineering (2013) 61, 491–495. [Impact Factor: ISI=3.041]
- [10] Kumar, S., **Bauddh, K.**, Barman S.C., and Singh R.P. Evaluation of conventional and Organic matrix entrapped urea and diammonium phosphate for growth and productivity of *Triticum aestivum* L. and mobilization of NO_3^- , NO_2^- , NH_4^+ and PO_4^{3-} from soil to plant leaves. International Journal of Agronomy and Plant Production. (2013). 4 (6), 1357-1368 [Impact Factor: ISI=0.426].

Attended and Presented Paper in Conference

- [1] **Bauddh, K.** and Rana P. Singh, 2014. Participated and **presented** a paper entitled “Studies on bio-accumulation and partitioning of Cd in *Brassica juncea* and *Ricinus communis* in presence of vermicompost, chemical fertilizers, biofertilizers and customized fertilizers” during "**International Conference- Environmental Technology and Sustainable Development -Challenges & Remedies**" to be held on 21-23 Feb 2014, organized by Department of Environmental Science, BBA University, Lucknow, U.P., India.

Profile of Dr. Kavita Parmar

Dr. KAVITA PARMAR
Assistant Professor (On Contract)
Centre for Environmental Sciences,
Central University of Jharkhand,
Brambe, Ranchi, India.
Contact No. +91 9279340613, +91 8877036752
E mail: kavitanitj@gmail.com,

Academic/other Experience

Teaching: 1 year 6 Months, Jamshedpur Women's College, Jamshedpur
13 Months, Central University of Jharkhand, Brambe, Ranchi

Research: 6 Years, CSIR-NML (3years excluding Ph.D)

Academic Profile

Ph.D (January 2013)	:	Bengal Engineering & Science University, Shibpur, Howrah, as CSIR-NML Senior research Fellow
NET Environmental Science (2005)		University Grant Commission
M.Sc. Environmental Science, (2005)	:	A. N. College, Patna, Magadh University, First class first, 75.5 %
BSc. Env. & WaterMgt., (2001)	:	Jamshedpur Women's College, Jamshedpur, Ranchi University, 72%

Details of Research Publications:

International Refereed: 04 (**Total Impact Factor, 2012- Approx. 10**)

International open access: 04

National Refereed: 02

Book: 01

Conference Proceeding: 01

Non-Refereed/ Magazines: 02

Achievements:

- First class first in Environmental Science in M.Sc.
- Awarded Senior Research Fellow by CSIR.
- Best oral presentation award in International Conference, GTER 2012.
- Three M.Sc Thesis supervised

Other Educational milestones:

- Post Graduate Diploma in NGO Management
- Diploma in computer Application

Seminar/Conference/Workshop participation

- International: 02 (**One in Leiden University, Netherland**)
- National : 06

Publications:

- **Kavita Parmar**, Durbadal Chongder, Nil Ratan Bandyopadhyaya, Santanu Bhattacharjee, (2012), Synthesis and characterization of Fe(II)-silicate precipitation tube (Fe^{II}SPT) as a heavy metal adsorbent and its comparison with Fe(III)-silicate

precipitation tube (Fe^{III}SPT), **Journal of Metallurgy and Materials Science**, Vol. 54, No.-3, pp. 269-277

- **K. Parmar**, D. Chongder, S. Bhattacharjee and N. R. Bandyopadhyaya,(2012), Removal of Pb(II) from aqueous solution using cobalt silicate precipitation tube (CoSPT) as adsorbent, Accepted in **International Journal of Current Chemistry**
- **Kavita Parmar**, Nil R Bandyopadhyaya, Durbadal Chongder, Santanu Bhattacharjee, (2012), Detailed characterization of calcium silicate precipitation tube (CaSPT) as a multi-cation adsorbent in aqueous medium, **Materials Research Bulletin** Volume 47, Pages 677-682, (**Impact Factor- 2.2**)
- **K. Parmar**, D. Chongder, N. R. Bandyopadhyaya, S. Bhattacharjee, (2011), Investigation on Cu(II) adsorption on cobalt silicate precipitation tube (CSPT) in aqueous medium, **Journal of Hazardous Materials**, Volume 185, Pages 1326–1331, (**Impact Factor- 4.2**)
- **Kavita Parmar** & Smriti Priya, (2011) Evaluation of ground water quality of Jamshedpur city in Jharkhand, **International Journal of Environmental Sciences**, Volume 1, No7
- **Kavita Parmar**, A K Pramanik, N R Bandyopadhyaya, and S Bhattacharjee, (2010) Synthesis and characterization of Fe(III)-silicate precipitation tubes, **Materials Research Bulletin**, Volume 45, Issue 9, Pages 1283-1287, (**Impact Factor- 2.2**)
- **Kavita Parmar**, Hema T. Chaturvedi, Md Wasi Akhtar, Sanchita Chakravarty, Swapan K. Das, Ashit Pramanik, Mainak Ghosh, Ashish K. Panda, Nilratan Bandyopadhyaya and Santanu Bhattacharjee,(2009) Characterization of cobalt precipitation tube synthesized through “silica garden” route, **Materials Characterization**, Volume 60, Issue 8, Pages 863-868, (**Impact Factor- 1.4**)
- Mala Mandhyan, **Kavita Parmar** and A.K. Mandhyan, (2007) Eco-friendly inhibition of mild steel in acidic media, **Journal of Metallurgy and Materials Science**, Vol. 49, No.2, pp. 123-128
- **Kavita Parmar** & Vineeta Parmar (2010), Evaluation of water quality index for drinking purposes of river Subarnarekha in Singhbhum District, **International Journal of Environmental Sciences**, Volume 1, No1

Research papers in International Conference/Workshop

- **Kavita Parmar** (2012), Exploring Calcium silicate precipitation tubes (CaSPT) synthesized by “chemical garden” route as an adsorbent for removal of Cr(III) in aqueous medium Paper Presented at International Workshop on Chemical garden **Held at Lorentz Center of Leiden University, Leiden, Netherland, from 07th – 11th May, 2012.**
- D. Chongder, **K. Parmar***, S. Bhattacharjee and N. R. Bandyopadhyaya (2012) Removal of Pb(II) from aqueous solution using cobalt silicate precipitation tube (CoSPT) as adsorbent (abstract) Paper Presented at International Conference: Green Technology for Environmental Remediation(GTER) Held at FET, Gurukul Kangari University, Haridwar , from 11th – 13th February, 2012. (**Best Oral presentation Award**)

BRIEF CV OF Dr. SUSHIL KUMAR SHUKLA

M.Sc., Ph.D IIT (BHU) (Environmental Science)

Assistant Professor (on contact),

Center for Environmental Sciences,

Central University of Jharkhand, Ranchi

E-mail : shuklask2000@yahoo.co.in, shuklask2000@gmail.com

Contact No., 09454061220, 0542-2208093

Teaching/Research Interests:

- Biological treatment of waste water
 - Fermentation and microbial engineering
-

Environmental Chemistry

Environmental Earth Science

Natural Resource management

Air pollution monitoring and abatement

Present Status:

- Working as Assistant Professor in Centre for Environmental Sciences, Central University of Jharkhand, Ranchi, India since 06.08.12.

Administrative Post:

- Working as a Coordinator, Center for Environmental Science, Central University of Jharkhand, Ranchi, India since 18th February, 2013 to 18th July 2013.

Achievements:

- Awarded of UGC Research Fellowship From 01.01.2007 to 10.03.2008
- Awarded of UGC SRF from 11.03.2008 to 10.03.2011.
- Award of UGC RFSMS fellowship in 2008.
- Cleared the UGC NET Exam, held on 24 June 2007

Publications:

- Shukla S.K, Mishra P.K, Srivastava K.K, & Srivastava P (2010), Treatment of Anaerobically Digested Distillery Effluent by *Aspergillus niger*, The IUP J Chemical Engineering, Vol II, No. 2, pp 7-18.
- Singh N.L, Mishra P.K, Shukla S.K (2010) "Alcoholis Fermentation Techniques in Early Indian Perspective". Indian Journal of History of Sciences, 45.2, 163-173.
- Gupta Kamal, Shukla S.K, Mishra P.K. (2012) "Effect of anatase/rutile TiO₂ phase composition on Arsenic adsorption" in, Journal of Dispersion Science and Technology, 34:1043–1052, 2013 .
- Shukla S.K, Mishra P.K, Srivastava K.K, & Gupta Kamal "Optimization of the Parameters for Decolorization by *Phanerochaete chrysosporium* of Biodigested Distillery Effluent Pretreated by PAP" Communicate in Journal of Water Science and Technology in 2012.
- Shukla S.K, Mishra P.K, & Singh N.L "Treatment Techniques for Molasses based distilleries for COD and colour removal: A Review" Communicate in Journal of Environmental Management in 2012.
- Shukla S.K, Mishra P.K, Upadhyay S.N, & Singh N.L "Treatment of Anaerobically Digested Distillery Effluent by *Phanerochaete chrysosporium* in Internal loop Airlift Bioreactor" Communicate in Journal of Bioresource Technology in 2013.

Presentations in Conferences / Seminars:

- Shukla S.K, Mishra P.K, Srivastava K.K, & Srivastava P "Decolorization of distillery effluent by *Aspergillus niger*" Present a poster in the international conference on Water Crisis-Challenges & opportunities held at NEERI, Nagpur during 28-29, Feb-2008.
- Shukla S.K, Mishra P.K, Srivastava K.K, & Srivastava P "Optimization of medium and process parameters for the decolourization of biodigested distillery effluent" published in

proceeding of National conference RAWM-09 held at dept. of chemical engineering, IT, BHU during Feb 20-21, 2009.

- Shukla S.K, Mishra P.K, Srivastava K.K, & Srivastava P “Optimization of process parameters for biodegradation of anaerobically digested distillery effluent in Internal loop Airlift bioreactor” Present a poster in the National conference EPBE-09 held at School of Biochemical Engineering, IT, BHU during Oct. 09-10, 2009.
- Shukla S.K, Mishra P.K, Srivastava K.K “Decolourization of anaerobically digested distillery effluent by *Phanerochaete chrysosporium*” published in proceeding of ICSP-09, held at Dept. of chemical engineering, IT, BHU, Oct. 20-22, 2009.
- Shukla S.K, Mishra P.K, Srivastava K.K, & Srivastava P “Decolourization of anaerobically digested distillery effluent by *Aspergillus niger*” published in proceeding of the International conference on entitled “Issues and challenges in Energy conversion and management”, held at Dept. of Mechanical Engineering, IT, BHU, during 18-20 December, 2009.
- Shukla S.K, Singh R.K “Green Army: Cleaning Ganga Bank Through Participatory Methods” Present a Paper in the National Seminar Plains of The Ganga : Problems and Prospects, sponsored by UGC SAP DRS program in Dept. of Geography, BHU, 28-30 January-2013.

Program Organized:

- Organized a one day Seminar and Poster Exhibition on the eve of World Ozone Day on 16th September, 2012 by the Centre for Environmental Sciences & Centre for Land Resource Management at the Central University of Jharkhand, Brambe, Ranchi.
- Organized a two days Seminar and Poster Exhibition on the eve of World Water Day on 21-22 March, 2013 by the Centre for Environmental Sciences & Centre Water Engineering & Management at the Central University of Jharkhand, Brambe, Ranchi.

Membership:

- Senior member (No. 200964) in Asia-pacific Chemical, Biological & Environmental Engineering Society (APCBEEES).
- Life Member in Prof. H.S Srivastava Foundation for Science and Society, Lucknow, UP from 09 August 2013..

Education:

Ph.D. – Environmental Science, 2011, Department of Chemical Engineering, Indian Institute of Technology, Banaras Hindu University, India on topic “**Treatment of anaerobically digested distillery effluent**”.

M.Sc. – Environmental Science, 2004, First Division, University of Allahabad, Allahabad, UP, India.

B.Sc. – Chemistry, Botany, Zoology; First Division 2000, Udai Pratap Autonomous College, Varanasi India.

Intermediate – Government Queen's Inter College, U. P Board- First Division in 1996.

High School – Government Queen's Inter College, U.P Board– First Division in 1994.

Diploma – Diploma in Industrial Safety, 2009, First Division, AIIMS, Chennai.

2. R & D PROJECTS

Sanctioned/Ongoing Research Projects of the Centre in various spheres of Knowledge in details

1. **Dr. Manoj Kumar** has received a R&D Project from **Space Application Centre (ISRO)**, Ahmedabad under its INSAT 3D Data utilization scheme with a total outlay of Rs. 30.00 Lakhs.
2. **Dr. Manoj Kumar** has received a R&D Project from **Indian Space Research Organisation (ISRO)**, Bangalore for GPS upper Air observational Studies for which instruments and sensors being supplied from SCL, Chandigarh of Rs. 46.00 Lakhs.
3. **Dr. Manoj Kumar** has received another project from **ISRO HQ** under its PRWONAM Scheme for which one 15m MBLM tower based instrumentation system will be transferred to CUJ. Total estimated budget would be more than 1.0 Crore.
4. **Dr. Manoj Kumar** has defended one R&D project @Rs. 50.0 Lakhs entitled *Aerosol radiative forcings over varying vegetative fields and surfaces* before Steering Committee of DST (GOI) for funding and Sanction Order is awaited
5. **Dr. Purabi Saikia** has received **UGC start up grant** of Rs. 6.00 lakhs for two years for the project entitled 'Phytosociological analysis of forests of Ranchi, Jharkhand, India' for two years.
6. **Dr. Bhashkar Singh** has received **UGC start up grant** of Rs. 6.00 lakhs for two years for the project entitled 'Transesterification of biodiesel from *Millettia pinnata* oil from nano-CaO loaded compounds'.
7. **Dr. Kuldeep Baudh** has received **UGC start up grant** of Rs. 6.00 lakhs for two years for the project entitled 'Effects of cadmium (Cd) on the yield and quality of *Ricinus communis* seeds and oil'.
8. **Dr. Kavita Parmar** has received **DST Fast Track Fellowship** of Young Scientist Scheme a grant of Rs. 23.00 lakhs for three years for the project entitled 'Biomass burning and black carbon effect over paddy field'.

3. PUBLICATIONS

1. Arun K. Dwivedi, Sagarika Chandra, **M. Kumar**, Sanjay Kumar, N.V.P. Kiran Kumar (2014) Atmospheric surface layer responses to the extreme lightning day in plateau region in India. *Journal of Atmospheric and Terrestrial Physics* (<http://dx.doi.org/10.1016/j.jastp.2014.08.003i>). **Elsevier publication.**
2. Arun K. Dwivedi, Sagarika Chandra, **M. Kumar**, Sanjay Kumar, N.V.P. Kiran Kumar (2014) Spectral Analysis of Wind and Temperature Components during Lightning in Pre-Monsoon Season over Ranchi. *Meteorology & atmospheric Physics* (DOI: 10.1007/s00703-014-0346-0). **Springer Publication.**
3. Sagarika Chandra, Arun K Dwivedi, and **Manoj Kumar**. 2014. Characterization of the atmospheric boundary layer from radiosonde observations along eastern end of monsoon trough of India, *J. Earth Syst. Sci.* 123, No. 6, August 2014, pp. 1233–1240 (Elsevier)
4. Abhay Srivastava, Mrinal Mishra, and **Manoj Kumar**. 2014. Lightning alarm system using stochastic modelling. *Nat Hazards*, DOI 10.1007/s11069-014-1247-8 (Elsevier)
5. R. Latha, B.S. Murthy, L. Kaundilya, **M. Kumar**, S.K. Das and N.C. Mahanti (2014) Temporal variation of 'solar dimming' induced by composite and carbonaceous aerosols: observations from mineral rich eastern Indian region. *Journal of Geophysical Research-An American Geophysical Union Publication* **2014**: 1-13. DOI:10.1002/2014JD021483
6. S. Pandey, **M. Kumar**, S. Chakraborty and N.C. Mahanti (2014) A Statistical Comparison of Reference Evapotranspiration Methods: A Case Study from Jharkhand

State of India. *International Journal of Innovative Research in Science, Engineering and Technology* **3**(1): 8765-8777.

7. S. Pandey, **M. Kumar** and N.C. Mahanti (2014) Assessment of drought severity in various regions of Jharkhand state of India. *ISCA-IRJEvS* **3**(2): 8-14.
8. K. Lipi and **M. Kumar** (2014) Aerosol and Black Carbon over Indo-Gangetic Basin during Lighting Festival (Diwali) Period Using Aethalometer and Back trajectory Datasets. *International Journal of Engineering Research & Technology* **3**(1): 666-676.
9. B.S. Murthy, R. Latha, **M. Kumar** and N.C. Mahanti (2014) Effect of aerosols on evapo-transpiration. *Atmospheric Environment* **89**: 109-118.
10. R. Latha, B.S. Murthy, **M. Kumar**, S. Jyotsna, K. Lipi, G. Pandithurai and N.C. Mahant (2014) Aerosol Optical Properties and Composition over a Table Top Complex Mining Area in the Monsoon trough Region. *Aerosol and Air Quality Research* **14**: 806–817.
11. K. Lipi and **M. Kumar** (2014) Aerosol and Black Carbon over Indo-Gangetic Basin during Lighting Festival (Diwali) Period Using Aethalometer and Back trajectory Datasets. *International Journal of Engineering Research & Technology* **3**(1): 666-676.
12. Sagarika Chandra, Arun K. Dwivedi and **M. Kumar** (2014) Characterization of the atmospheric boundary layer from radiosonde observations along eastern end of monsoon trough of India. *J. Earth Syst. Sci.* **123**(6): 1233-1240.
13. R. Latha, B.S. Murthy, **M. Kumar**, S. Jyotsna and K. Lipi (2013) Aerosol radiative forcing controls: Results from an Indian table-top mining region. *Atmospheric Environment* **81**: 687-694.
14. B.S. Murthy, R. Latha and **M. Kumar** (2013) Influence of tropical cyclone ‘AILA’ on atmospheric surface layer turbulence and fluxes at Ranchi during its landfall. *Atmospheric Science Letters, Royal Met Soc. Atmos. Sci. Let.* **15**: 72-78.
15. K. Lipi and **M. Kumar** (2013) Aerosol behaviour over Ranchi. *European Scientific Journal* **9**(36): 211-221.
16. P. Jha, **M. Kumar**, P.D. Meena and H.C. Lal (2013) Dynamics and management of Iternaria blight disease of Indian mustard. *Journal of Oilseed Brassica* **4**(2): 66-77.
17. C.K. Unnikrishnan, M. Rajeevan, S.V. Bhaskara Rao and **M. Kumar** (2013) Development of a high resolution land surface dataset for the South Asian monsoon region. *Current Science* **105**(9): 1235-1246.
18. A. Kumar, **M. Kumar**, N.C. Mahanti, L.D. Saraswat, V. Pandey and A. Wadood (2013) Long term trend analysis on precipitation and temperature along eastern end of monsoon trough of Ranchi, Jharkhand India. *Int. J. Envi. Sci. Tech.* **2**(2): 1-10
19. A. Kumar, **M. Kumar**, L.D. Saraswat and N.C. Mahanti (2013) The mesoscale measurement of surface energy (land surface) during the summer monsoon and thunderstorm period in per humid climate condition. *Int. J. Environ. Sci. Tec.* **2**(1): 56-69.
20. A. Kumar, **M. Kumar**, L.D. Saraswat and N.C. Mahanti (2013) The comparative computation of Net radiation and PET using slow response sensor data over per humid climatic condition Ranchi Jharkhand. *Int. J. Environ. Sci. Tec.* **2**(1): 48-55.
21. K. Lipi and **M. Kumar** (2013) Study of Aerosol black carbon and Aerosol optical Depth over Ranchi during winter in Northern India. *International Journal of Engineering Research & Technology* **2**(10): 3189-3195.
22. Jyotsna Singh, Bimal K. Bhattacharya, **M. Kumar** and K. Mallik (2013) Modeling Monthly Diffuse Solar Radiation Fraction and its Validity over Indian Sub-Tropic. *Int. J. of Climatology* **33**(1): 77-86. **Wiley Publication**
23. M.N. Patil, **M. Kumar**, R.T. Waghmare, T. Dharmaraj and N.C. Mahanty (2013) Evaluation of Noah-LSM for soil hydrology parameters in the Indian summer monsoon conditions. *Theor. Appl. Climatol.*, DOI 10.1007/s00704-013-1046-2.

24. Bhashma Tyagi, A.N.V. Satyanarayana, **M. Kumar**, N.C. Mahanti. 2013. Surface energy and radiation budget over a tropical station: An observational study. *Asia-pacific Journal of Atmospheric Science*, **48(4)**: 411-421
25. **P. Saikia** and M.L. Khan (2014) Ecological features of cultivated stands of *Aquilaria malaccensis* Lam. (Thymelaeaceae) - a vulnerable tropical tree species in Assamese homegardens. *International Journal of Forestry Research* **2014**: 1-16. ISSN: **1687-9368 (Print)**, **1687-9376 (Online)**; **Hindawi Publishing Corporation**.
26. **P. Saikia** and M.L. Khan (2014) Status, distribution and socio-cultural uses of some selected homegarden plants of upper Assam, Northeast India. *Bharatiya Samajik Chintan (ISSA)* 13(3) (in press).
27. **P. Saikia** and M.L. Khan (2013) Population structure and regeneration status of *Aquilaria malaccensis* Lam. in homegardens of upper Assam, NE India. *Tropical Ecology* **54(1)**: 1-13. ISSN: **0564-3295**; **Impact Factor: 0.768**; **Citation: 2**
28. **P. Saikia**, B.I. Choudhury and M.L. Khan (2012) Floristic composition and plant utilization pattern in homegardens of Upper Assam, India. *Tropical Ecology* **53(1)**: 105-118. ISSN: **0564-3295**; **IF: 0.768**; **Citation: 6**
29. **P. Saikia** and M.L. Khan (2012) *Aquilaria malaccensis* Lam., a Red-listed and highly exploited tree species in Assamese home garden. *Current Science* **102(4)**: 546-547. ISSN: **0011-3891**; **IF: 0.935**; **Citation: 2**
30. **P. Saikia** and M.L. Khan (2012) Agar (*Aquilaria malaccensis* Lam.): a promising crop in the homegardens of Upper Assam, northeastern India. *Journal of Tropical Agriculture* **50**: 8-14. ISSN: **0971-636X (Print)**; **0973-5399 (Online)** **Citation: 2**
31. **P. Saikia** and M.L. Khan (2012) Seedling survival and growth of *Aquilaria malaccensis* Lam. in different microclimatic conditions of northeast India. *Journal of Forestry Research* **23(4)**: 569-574. ISSN: **1007-662X (Print)**; **1993-0607 (Electronic)**; **Springer Publication**.
32. S. Bharali, J. Deka, **P. Saikia**, M.L. Khan, A. Paul, O.P. Tripathi, L.B. Singha and Uma Shankar (2012) *Pinus merkusii* Jungh et de Vries - a vulnerable gymnosperm needs conservation. *NeBIO* **3(1)**: 94-95. ISSN: **0976-3597 (Print)**; **Citation: 1**
33. **P. Saikia** and M.L. Khan (2012) Phenology, seed biology and seedling survival and growth of *Aquilaria malaccensis*: A highly exploited and red listed tree species of Northeast India. *The Indian Forester* **138(3)**: 289-295. ISSN: **0019-4816**
34. L. Zimik, **P. Saikia** and M.L. Khan (2012) Comparative study on homegardens of Assam and Arunachal Pradesh in terms of species diversity and plant utilization pattern. *Research Journal of Agricultural Sciences (An International Journal)* **3(3)**: 611-618. ISSN: **0976-1675**; **Citation: 1**
35. **B. Singh**, A. Guldhe, I. Rawat and F. Bux (2014) Towards a sustainable approach for development of biodiesel from plant and microalgae. *Renew Sust Energ Rev.* **29**: 216-245. Elsevier. ISSN: 1364-0321, **Cited By in Scopus (6)**
36. A. Guldhe, **B. Singh**, I. Rawat, K. Ramluckhan and F. Bux (2014) Efficacy of drying and cell disruption techniques on lipid recovery from microalgae for biodiesel production. *Fuel* **128**: 46-52.
37. A. Guldhe, **B. Singh**, I. Rawat and F. Bux (2014) Synthesis of biodiesel from *Scenedesmus* sp. By microwave and ultrasound assisted in-situ transesterification using tungstated zirconia as a solid acid catalyst. *Chemical Engineering Research and Design* **92**: 1503-1511.
38. D. Madhu, **B. Singh** and Y.C. Sharma (2014) Studies on application of fish waste for synthesis of high quality biodiesel. *RSC Advances* **4**: 31462-31468.
39. Y.C. Sharma, **B. Singh**, D. Madhu, Y. Liu and Z. Yaakob (2014) Fast Synthesis of High Quality Biodiesel from 'Waste Fish Oil' by Single Step Transesterification. *Biofuel Research Journal* **2**:70-76

40. **Bauddh, K.** and Singh R.P. Studies on bio-accumulation and partitioning of Cd in *Brassica juncea* and *Ricinus communis* in presence of vermicompost, chemical fertilizers, biofertilizers and customized fertilizers. *Ecological Engineering*. DOI: 10.1016/j.ecoleng.2014.10.022 [Impact Factor: ISI=3.041].
41. Kumar, S., **Bauddh, K.**, Barman, S.C., Singh, R.P. 2014. Amendments of microbial biofertilizers and organic substances reduces requirement of urea and DAP with enhanced nutrient availability and productivity of wheat (*Triticum aestivum* L.). *Ecological Engineering*, 71 432-437. 007 [Impact Factor: ISI=3.041]
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59. **K. Parmar** and Santanu Bhattacharjee (2014) Study on Pb(II) and Cd(II) adsorption by Fe(II) and Fe(III) silicate precipitation tubes in aqueous medium. *Journal of Metallurgy and Materials Science* (Accepted)
60. **K. Parmar** (2013) Removal of cadmium from aqueous solution using cobalt silicate precipitation tube (CoSPT) as adsorbent. *International Journal of Science Inventions Today* 2(3): 204-15.
61. **K. Parmar** and S. Priya (2013) Evaluation of ground water quality of Jamshedpur city in Jharkhand. *International Journal of Innovations in Bio-Sciences* 3(3): 81-86.
62. **K. Parmar**, Durbadal Chongder, Nil Ratan Bandyopadhyaya, Santanu Bhattacharjee (2012) Synthesis and characterization of Fe(II)-silicate precipitation tube (Fe^{II}SPT) as a heavy metal adsorbent and its comparison with Fe(III)-silicate precipitation tube (Fe^{III}SPT). *Journal of Metallurgy and Materials Science* 54(3): 269-277.
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64. **K. Parmar**, Nil R Bandyopadhyaya, Durbadal Chongder and Santanu Bhattacharjee (2012) Detailed characterization of calcium silicate precipitation tube (CaSPT) as a multi-cation adsorbent in aqueous medium. *Materials Research Bulletin* 47: 677-682

Book Chapters

1. **B. Singh**, Y. Liu and Y.C. Sharma (2013) Synthesis of biodiesel/bio-oil from microalgae. In: *Biotechnological Applications of Microalgae: Biodiesel and value-added products*; Faizal Bux (ed.). CRC Press (Taylor & Francis Group), USA, Chapter # 8, pp: 99-112. ISBN:978-1-4665-1529-1
2. **K. Bauddh**, M .Sainger, S. Kumar, P.A. Sainger and R.P. Singh (2014) Biotechnological approaches to mitigate adverse effects of extreme climatic factors on plant productivity (In Press).

3. **S.K. Shukla** (2014) Cost-benefit analysis of wastewater reuse in micro irrigation. *Book Series-08: Research Advances in Sustainable Micro Irrigation*. Apple Academic Press, Toronto-2014 (accepted).
4. **Vineeta Parmar and Kavita Parmar. 2012.** Water Quality Index Of River Ganga, Edition: 2012-09-18, Publisher: LAP LAMBERT Academic Publishing, Germany, ISBN: 978-3-659-20792-1
5. **S K Shukla. 2014. “Cost-benefit analysis of wastewater reuse in micro irrigation”:** **Book Series: Research Advances in Sustainable Micro Irrigation, Accepted** in Apple Academic Press, Toronto-2014.

Seminar/Orientation Program Participation since the date of Joining

1. **P. Saikia**, J. Deka, S. Bharali, O.P. Tripathi and M.L. Khan (2014) Inventory on population status and diversity of tree species of West Kameng district of Arunachal Pradesh, Eastern Himalaya using Geoinformatics Technology. **Paper accepted** for oral presentation in an International event ‘**Tropical Ecology Congress, 2014**’ to be held at JNU, New Delhi during 10th to 12th December, 2014.
2. **P. Saikia** attended and successfully completed a **Four weeks (Twenty eight days)** UGC sponsored **Orientation Program** organized by UGC-Academic Staff College, Ranchi University, Ranchi from 14th July to 10th August, 2014 and obtained **A Grade**.
3. **P. Saikia** and M. L. Khan (2013) Cultivation of *Agaru (Aquilaria malaccensis Lam.)* in homegardens of upper Assam, Northeast India and its prospect in socioeconomic development. **Paper presented** and abstract published in page 42 of the abstract volume of the 1ST**International Scientific Symposium** on Agarwood (ISSA) on ‘*Agarwood in the New Era*’ organized by Faculty of Forestry, Universiti Putra Malaysia, Malaysia.
4. **P. Saikia** and Ashalata Devi (2012) Cultivation and prospects of energy crop in homegardens of upper Assam, northeast India. **Paper presented** and abstract published in page 210 in the *Proceedings of the International Seminar and Workshop on ‘Energy, sustainability and development (ISWESD) with special focus on nanoscience and nanotechnology’* organized by Department of Physics, Sibsagar College, Joysagar, Assam in collaboration with CSIR-NEIST, Jorhat, Assam, India.
5. **P. Saikia** (2012) Population status of *Aquilaria malaccensis Lam.*: a critically endangered tree species of India in Assamese homegardens. **Paper presented** and abstract published in page 31 in the *Proceedings of the International Conference on ‘Biodiversity and sustainable energy development’* organized by OMICS Publishing Group at **HICC, Hyderabad, India**.
6. **Bhaskar Singh**, Y.C. Sharma. Characterization of CaO used as a heterogeneous catalyst for synthesis of biodiesel. International Conference on Recent Advances in Analytical Sciences (RAAS-2014) Organized by Indian Society of Analytical Scientists (ISAS) Varanasi Chapter & Department of Chemistry, IIT (Banaras Hindu University), Varanasi March 27-29, 2014
7. Production of biodiesel from *Chlorella vulgaris* lipids using a solid acid catalyst. Guldhe A, Singh B, Rawat I, Bux F. National Conference on “Frontiers in Algology and Algal Biotechnology”, Visva-Bharati (A Central University), Santiniketan, West Bengal, India. 15-17 November 2013.
8. **Bauidh, K.** and Rana P. Singh, 2014. Participated and **presented** a paper entitled “Studies on bio-accumulation and partitioning of Cd in *Brassica juncea* and *Ricinus communis* in presence of vermicompost, chemical fertilizers, biofertilizers and customized fertilizers” during "International Conference- Environmental Technology and Sustainable Development -Challenges & Remedies" to be held on 21-23 Feb 2014, organized by Department of Environmental Science, BBA University, Lucknow, U.P., India.

9. **Bauddh, K.** and Rana P. Singh, 2013. Comparative potential of castor bean and Indian mustard for tolerance and phytoremediation of Ni from Ni contaminated soil. 1st Lucknow Science Congress (LUSCON-2013). Innovations in Science for Better Tomorrow, Organized by Babasaheb Bhimrao Ambedkar University, Lucknow, on 20-21 March, 2013. **(Best Paper Award)**
10. **Kavita Parmar** (2012), Removal of Cadmium from aqueous solution using cobalt silicate precipitation tube (CoSPT) as adsorbent, Paper Presented at International Conference: Anthropogenic Impact on Environment and Conservation Strategy, November 2-4, 2012 at Ranchi
11. **Kavita Parmar** (2012), Exploring Calcium silicate precipitation tubes (CaSPT) synthesized by “chemical garden” route as an adsorbent for removal of Cr(III) in aqueous medium Paper Presented at International Workshop on Chemical garden **Held at Lorentz Center of Leiden University, Leiden, Netherland, from 07th – 11th May, 2012.**
12. D. Chongder, **K. Parmar***, S. Bhattacharjee and N. R. Bandyopadhyaya (2012). Removal of Pb(II) from aqueous solution using cobalt silicate precipitation tube (CoSPT) as adsorbent (abstract) Paper Presented at International Conference: Green Technology for Environmental Remediation(GTER) Held at FET, Gurukul Kangari University, Haridwar , from 11th – 13th February, 2012. **(Best Oral presentation Award)**
- 13.

6. VACANCY POSITIONS OF CENTRE FOR ENVIRONMENTAL SCIENCES

Position	No. of Sanctioned post	No. of posts filled up	No. of vacant position
Professor	1	00	01
Associate Professor	02 (UR-01, SC-01)	01 (UR)	01 (SC)
Assistant Professor	04 (UR-01, OBC-01, SC-01, ST-01)	03 (UR-01, OBC-01, SC-01)	01 (ST)

7. CALENDAR OF ACTIVITIES OF CENTRE FOR ENVIRONMENTAL SCIENCES

- **Present class load: Total 71 hours per week (Theory)**
Total 12 hours per week (Laboratory)
- Integrated M. Sc. Semester I: Theory: 03 hours per week (Core course)
Theory: 12 hours per week (Common course for total 09 Branches)
Practical: 04 hours per week (Core course)
- Integrated M. Sc. Semester III: Theory: 16 hours per week
Practical: 08 hours per week
- Integrated M. Sc. Semester III: Theory: 20 hours per week
- Ph.D. Semester I: Theory: 08 hours per week
- Ph.D. Semester II: Theory: 12 hours per week
- Centre for Environmental Sciences celebrated **World Ozone Day** on 18th September, 2013 at Central University of Jharkhand, Brambe, Ranchi.

- Centre for Environmental Sciences & Centre for Water Engineering and Management jointly celebrated ***World Water Day*** on 21st and 22nd March, 2013 at Central University of Jharkhand, Brambe, Ranchi.
- Centre for Environmental Sciences & Centre for Land Resource Management jointly celebrated ***World Ozone Day*** on 16th September, 2012 at Central University of Jharkhand, Brambe, Ranchi.
- Besides, Dr. Manoj Kumar (Head, CEVS) is also the Coordinator of Centre for Education