





### WELCOME

TO

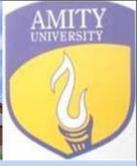
### WORLD ENVIRONMENT DAY 2018

TANU JINDAL (PROFESSOR AND DIRECTOR)

AMITY INSTITUTE OF ENVIRONMENTAL SCIENCE, AMITY INSTITUTE OF ENVIRONMENTAL TOXICOLOGY, SAFETY AND MANAGEMENT, AMITY INSTITUTE OF WATER TECHNOLOGY AND MANAGEMENT, AMITY CENTER FOR ANTARCTICA RESEARCH AND STUDIES, AMITY INSTITUTE OF MARINE SCIENCES, AMITY UNIVERSITY UTTAR PRADESH, SECTOR 125, NOIDA 201313





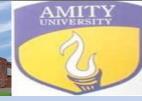


## **Environmental Institutes at Amity University, Noida**

- Amity Institute of Environmental Toxicology, Safety and Management
- Amity Institute of Environmental Sciences
- Amity Institute of Natural Resources and Sustainable Development
- Amity Institute of Geo-Informatics and Remote-Sensing
- Amity Institute of Global Warming and Ecological Studies
- Amity Institute of Wildlife Sciences
- Amity Institute of Green Technology Research & Studies
- Amity Institute of Water Technology and Management
- Amity Centre for Antarctica Research and Studies
- Amity Centre for Environmental Health and Science







### **Environmental Courses**

- PhD. Environmental Sciences (Full Time, Part time)
- PhD. Geo-Informatics and Remote-Sensing (Full Time, Part time)
- M.Sc. Environmental Sciences
- B.Sc. Environmental Sciences
- M Tech. Environmental Engineering
- M Tech. Geo-Informatics and Remote-Sensing
- MBA Natural Resource and Management
- Ph.D. Natural Resource and Management
- UGC Environmental Science course credits to all undergraduate students (approx. 5,000) in two semesters
  New Environmental Courses
- M.Sc. Environmental Health Science & Management
- ➤M. Tech. Water Technology & Management
- >PG Diploma in Environmental Impact Assessment & Auditing
- ➤ PG Diploma in Climate Change, Adaptation & Mitigation
- ➤ PG Diploma in Disaster Management

## **Environmental Courses (Gurugram)**

- >M.Sc. Environmental Sciences and Management
- >M. Tech. Atmospheric Technology and Climate Management
- >PhD. Environmental Sciences
- ➤ PhD. Environmental Sciences (Part Time)

# Master of Science (Environmental Health Sciences & Management) 2017

### **FIRST SEMESTER**

| ~           |   |           |           |           |         | Γ_   |
|-------------|---|-----------|-----------|-----------|---------|------|
| Course      |   | Lectures  | Tutorial  | Practical | Total   | Page |
| Code        | Course Title                                      | (L) Hours | (L) Hours | (L) Hours | Credits | No.  |
|             |   | per week  | per week  | per week  |         |      |
|             | <b>Principle of Environmental Health Sciences</b> | 4         | -         | -         | 4       |      |
|             | Principle of Environmental Management             | 4         | -         | -         | 4       |      |
|             | Environmental Health Impact Analysis              | 4         | 1         | -         | 5       |      |
| ESCM70<br>1 | Environmental Toxicology                          | 3         | -         | -         | 3       |      |
|             | <b>Environmental Chemistry, Biochemistry</b>      | 4         | 0         | 2         | 5       |      |
|             | and Microbiology Principles: Applicable to        |           |           |           |         |      |
|             | Environmental Health Science                      |           |           |           |         |      |
|             | Communication Skills - I                          | 1         | _         | _         | 1       |      |
|             | Behavioural Science – I                           | 1         | -         | -         | 1       |      |
|             | Language / Foreign Language - I                   | 2         | -         | -         | 2       |      |
|             | French  |           |           |           |         |      |
|             | German  |           |           |           |         |      |
|             | Spanish   |           |           |           |         |      |
|             | Japanese  |           |           |           |         |      |
|             | Chinese   |           |           |           |         |      |
|             | Russian   |           |           |           |         |      |
|             | Arabic  |           |           |           |         |      |
|             | Sanskrit  |           |           |           |         |      |
|             |   |           |           |           |         |      |
|             | Seminar   | -         | -         | -         | 2       |      |
|             | TOTAL   |           |           |           | 27      |      |

### **SECOND SEMESTER**

|         | Environmental Carcinogenesis:             | 4    | - | - | 4   |  |
|---------|---|------|---|---|-----|--|
|         | Assessment and Preventive Mechanism       |      |   |   |     |  |
|         | Industrial Hygiene and Occupational       | 4    | - | - | 4   |  |
|         | <b>Exposure Assessment and Management</b> |      |   |   |     |  |
|         | Models applicable for Environmental       | 3    | - | _ | 3   |  |
|         | Health Management                         |      |   |   |     |  |
|         | EHS Framework for Industrial              | 3    | - | _ | 3   |  |
|         | Sustainability                            |      |   |   |     |  |
| STAT663 | Statistical Method for Data Analysis      | 4    | _ | - | 4   |  |
|         | Communication Skills - II                 | 1    | - | - | 1   |  |
|         | Behavioral Science – II                   | 1    | - | - | 1   |  |
|         | Language / Foreign Language - II          | 2    | - | - | 2   |  |
|         | French                                    |      |   |   |     |  |
|         | German                                    |      |   |   |     |  |
|         | Spanish                                   |      |   |   |     |  |
|         | Japanese                                  |      |   |   |     |  |
|         | Chinese                                   |      |   |   |     |  |
|         | Russian                                   |      |   |   |     |  |
|         | Arabic                                    |      |   |   |     |  |
|         | Sanskrit                                  |      |   |   |     |  |
|         | Specialized Elective (Select Any one)     | 3-4  |   |   | 3-4 |  |
|         |   | 3    | 0 | 0 | 3   |  |
| ESCM713 | •Environmental Hazards, Risk Assessment   |      |   |   |     |  |
|         | And Disaster Management (3)               |      |   |   |     |  |
|         | • Environmental Epidemiology Hazard-      | 4    | 0 | 0 | 4   |  |
|         | Related Exposure (4)                      |      |   |   |     |  |
|         | • Environmental Change and Infectious     | 4    | 0 | 0 | 4   |  |
|         | Disease: Issues, Policies, and            |      |   |   |     |  |
|         | Controversies(4)                          |      |   |   |     |  |
|         | Report writing for Planning & Design of   | NTCC | - | - | 2   |  |
|         | <b>Environmental Risk Management</b>      |      |   |   |     |  |
|         | TOTAL                                     |      |   |   | 27  |  |

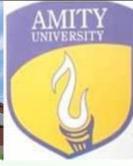
### **THIRD SEMESTER**

| Environmental Health: Law and Regulatory     | 3 | 1 |   | 4   |  |
|--|---|---|---|-----|--|
| Framework                                    |   |   |   |     |  |
| Food & Water Born Diseases, Surveillance and | 3 | 1 | - | 4   |  |
| Preventive Measures                          |   |   |   |     |  |
| Communication Skills - III                   | 1 | ı | - | 1   |  |
| Behavioral Science – III                     | 1 | - | - | 1   |  |
| Language / Foreign Language - III            | 2 | - | - | 2   |  |
| French                                       |   |   |   |     |  |
| German                                       |   |   |   |     |  |
| Spanish                                      |   |   |   |     |  |
| Japanese                                     |   |   |   |     |  |
| Chinese                                      |   |   |   |     |  |
| Russian                                      |   |   |   |     |  |
| Arabic                                       |   |   |   |     |  |
| Sanskrit                                     |   |   |   |     |  |
| Specialized Elective (Select any Two)        | 3 | 1 | - | 4   |  |
|  |   |   |   |     |  |
| Genomics, Proteomics and                     |   |   |   |     |  |
| Metabolomics in Environment                  |   |   |   |     |  |
| Climate Change Phenomena and Public          |   |   |   |     |  |
| Health Impacts                               |   |   |   |     |  |
| Case Study on Human Health                   |   |   |   |     |  |
| Epidemiology, Prevention Strategies          |   |   |   |     |  |
| Toxic, Hazardous & Solid Waste               |   |   |   |     |  |
| Management                                   |   |   |   |     |  |
| Summer Training (Evaluation)                 | - | - | - | 3   |  |
| Domain Elective                              |   |   |   | 3-5 |  |
| Open Elective                                |   |   |   | 0-2 |  |
| TOTAL  |   |   |   | 28  |  |

### **FOURTH SEMESTER**

| Dissertation - Industry Based | - | - | - | 19 |  |
|-------------------------------|---|---|---|----|--|
| TOTAL                         |   |   |   | 19 |  |
| TOTAL CREDITS- 101            |   |   |   |    |  |





### **ONGOING PROJECTS**

34th and 35th India Scientific Expedition to Antarctica as part of the NCAOR programme on environmental monitoring









### 10th Indian Scientific Expedition to Southern Ocean

Screening of Microorganism

From Indian Sector of Southern

Ocean for Antimicrobial activity

with their molecular

Characterization





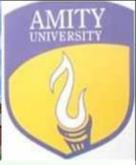
Sediment traps – measuring what falls down to the ocean bed over one year







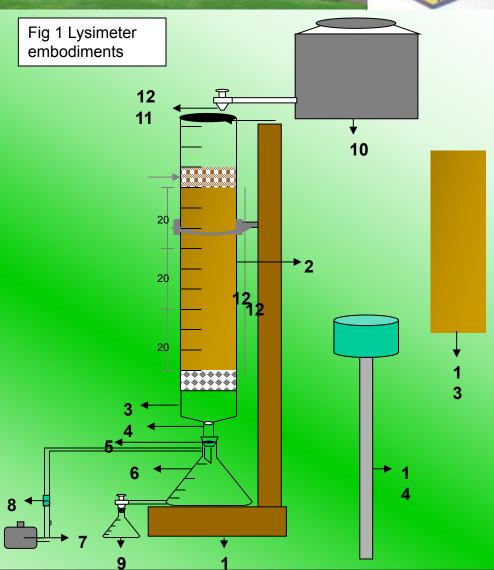




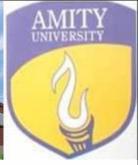
## Department of Science and Technology

- Development of a cost effective lysimeter and method for leaching studies to estimate risk assessment of groundwater contamination
- Duration: 3 Years

Total Cost: Rs. 3415280/-







## Department of Science and Technology

- Mobile phone and tower exposure measurement and biological correlations
- Duration: 2.5 Years

Total Cost: Rs. 5453400/-





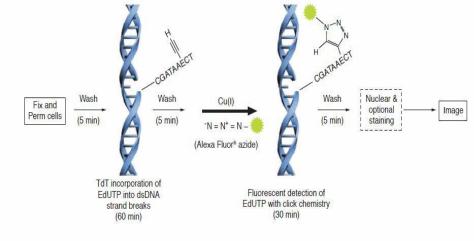
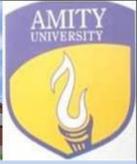


Figure 3. Detection of apoptosis with the Click-IT® TUNEL imaging assay.







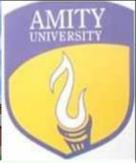


## Installation of Air Pollution Monitoring Equipment at Amity Campus from Uttar Pradesh Pollution Control Board









### **Completed Project**

**Ministry of Environment and Forest** 

Analysis of surface and groundwater contamination through indiscriminate use of Agrochemicals (pesticides) use in the region of crops of maximum pesticide usage (Rice, cotton and vegetables)

**Duration: 3 Years** 

Sanctioned Fund: 36,86,408/-





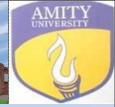


| Crops      | Surfacewater | Groundwater                          |
|------------|--------------|--------------------------------------|
| Vegetables | Yamuna River | Yamuna Khaddar<br>(8 farm tubewells) |
| Rice       | Hindon River | Badoli Banger<br>(8 farm tubewells)  |
| Cotton     | Ghaggar      | Punjuwan<br>(8 farm tubewells)       |

| Pesticides  | Gr        | Groundwater Surface |        | Surfacewater |              |               |
|---|-----------|---------------------|--------|--------------|--------------|---------------|
|   | Vegetable | Rice                | Cotton | Yamuna River | Hindon River | Ghaggar River |
| Organochlorine Pesticide ( $\alpha$ -HCH, $\beta$ -HCH, $\gamma$ -HCH, $\delta$ -HCH, Endosulfan-I, Endosulfansulfate, Dicofol, p, p'DDE and p,p' DDT ) | 31.3%     | 24%                 | 59%    | 45%          | 52%          | 38.6%         |
| Organophosphate Pesticide (Phorate, Dimethoate, Phosphamedion, Methyl Parathion, Malathion, Chlorpyriphos, Quinalaphos, Profenophos and Ethion          | 19.4%     | 23.4%               | 45.3%  | 25%          | 25%          | 50%           |
| Synthetic Pyrethroids (Beta cyfluthrin, fenpropathrin, lemda cyhalothrin, Alpha cypermethrin, deltamethrin, fenvelerate)                                | BDL       | 20.8%               | 29.2%  | BDL          | 12.5%        | 10.5%         |

### **Amity Institute of Environmental** Toxicology, **Safety and Management**





### **Department of Science and Technology** Groundwater contamination through Chlorpyrifos leaching

Pest controllers in buildings for termite control 1 L/M<sup>2</sup> of 20% EC formulation

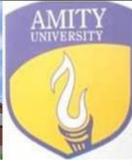
 Farmers and pest controllers use higher dosages of Chlorpyrifos out of their ignorance or due to adulterated pesticide available

Duration: 3Years

Sanctioned Fund: Rs. 37,97,000/-

| Days after<br>treatment | Neutral Soil             |                          | Alka                     | Alkali Soil              |                          | ic Soil                  |
|-------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|                         | Single dose<br>treatment | Double dose<br>treatment | Single dose<br>treatment | Double dose<br>treatment | Single dose<br>treatment | Double dose<br>treatment |
| 30                      | 9.78 <u>+</u> 0.98       | 12.43±1.21               | 8.59±0.89                | 21.2±0.12                | 11.57±1.98               | 26.22±1.25               |
| 60                      | 7.19±0.74                | 9.54±0.87                | 6.72±0.63                | 15.66±0.79               | 9.83±0.78                | 18.02±0.91               |
| 90                      | 5.67±0.62                | 7.78±0.57                | 6.11±0.68                | 13.01±0.78               | 7.54±0.69                | 14.06±0.62               |
| 120                     | 4.29±0.92                | 5.84±0.72                | 4.23±0.44                | 9.82±0.53                | 6.19±0.98                | 11.97±0.81               |
| 150                     | 4.03±0.54                | 7.02±0.97                | 3.56±0.97                | 6.07±0.65                | 5.27±0.62                | 7.69±1.01                |
| 180                     | 3.77±0.73                | 5.24±0.85                | 3.13±1.13                | 4.19±0.48                | 4.33±0.81                | 5.98±0.92                |
| 360                     | 3.01±0.56                | 4.37±1.02                | 2.97±1.08                | 3.78±0.88                | 6.79±0.61                | 7.21±1.98                |
| Total (%)               | 37.74                    | 85.16                    | 51.52                    | 91.15                    | 35.31                    | 73.73                    |





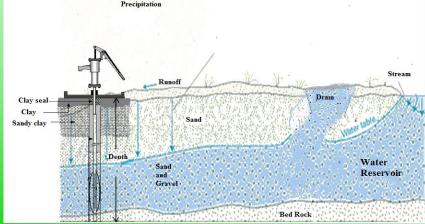
### **Ministry of Earth Sciences**

### Impact of Drains in Delhi on groundwater

keeping in view the problem of groundwater contamination in Indian context through unlined drains which are over loaded, with sewage waste from huge urban population and also waste from industries, Lysimetric studies are important to know the possible sources and types of groundwater contamination through leaching

Duration: 3Years

Sanctioned Fund: Rs. 56,31,900/-









MAHARANI BAGH DRAIN

**DELHI GATE DRAIN** 

SHAHDARA DRAIN



KALKAJI DRAIN



NAZAFGARH DRAIN



BARAPULLA DRAIN



**MORI GATE DRAIN** 

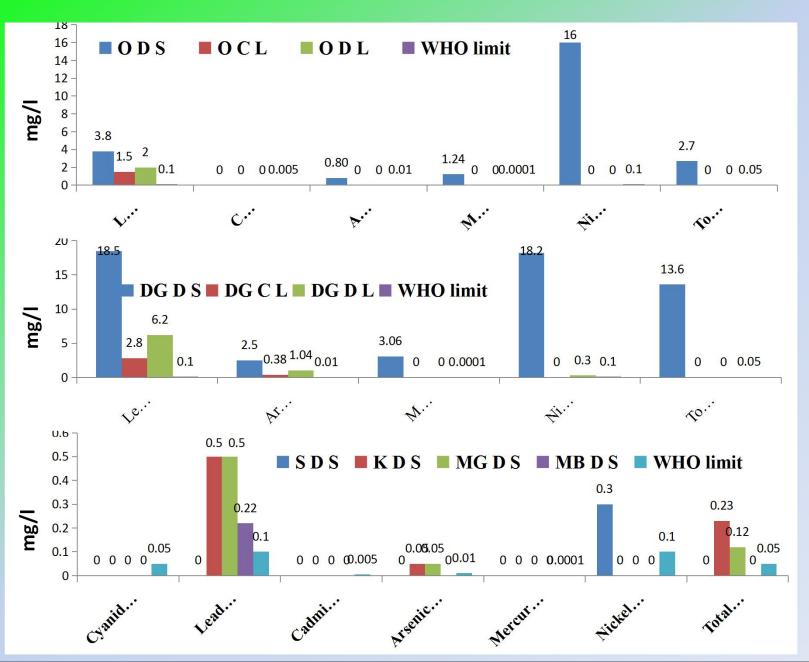


OKHLA DRAIN

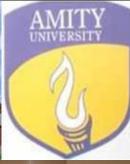


KHYBER PASS DRAI

## Heavy metals detected







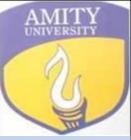
## Department of Science and Technology

"Leaching Behavior Of Currently Used Pesticides In Different Types Of Soil" has received "New investigator Award" at American Chemical Society meeting, 17-21 August, 08









### **OTHER ONGOING PROJECTS**

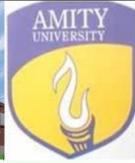
| Projects   | Principal Investigator   | Funding agency  | Total amount<br>(Rs) |
|--|--|---|----------------------|
| Development and Application of Diatom Indices for the Ecological Assessment of the Chambal River System                  |  | Department of Science and Technology(Young Scientist) | 20, 50,000           |
| Performance Evaluation of Forward Osmosis Membrane System for Applications within the Agriculture and Textile Industries |  | Department of Science and Technology(Young Scientist) | 31,56,290            |
| Assessment of Toxicity on vegetative Crops by Application of Municipal Solid Waste Compost (MSWC)                        | the state of the s | Department of Science and Technology                  | Approx 34 Lakh       |

### COMPLETED PROJECT

| Projects   | Principal Investigator | Funding agency  | Total amount<br>(Rs) |
|--|------------------------|---|----------------------|
| Estimation in- stream nitrogen removal process and its role in nitrogen budget of Yamuna River |                        | Department of Science and Technology(Young Scientist) |                      |







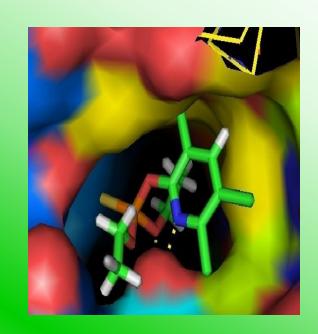
### **Research Work:**

### Title:

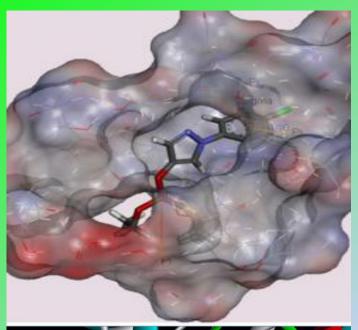
Physico and biochemical Assay of Organophosphorous pesticides for Human risk assessment.

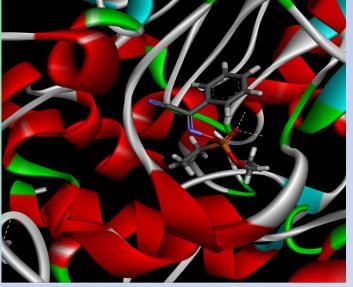
### This work includes:

3D Model of Organophosphorous Pesticide molecules and enzyme acetyl cholinesterase(AChE)
Docking of each molecules of organophosphorous pesticide with enzyme Acetylcholinesterase for inhibitory potential of such pesticides using suitable software( Discovery studio, argus lab, auto dock etc.) Structure activity analysis: Quantitative structure-activity relationship (QSAR) for enzyme activity Enzyme assays of most commonly used and most toxic organophosphorous pesticides



## PHYSICO-CHEMICAL AND BIOCHEMICAL ASSAY OF ORGANOPHOSPHORUS PESTICIDES FOR HUMAN RISK ASSESSMENT





### Salient features:

- In-silico studies on Organophosphate (OPs) mediated inhibition of human acetylcholinesterase (AChE).
- Toxicodynamics of OP with human AChE
- Molecular dynamic simulation of OP compound with human AChE
- Site directed mutagenesis to study the importance of binding site residues on AChE

### **Achievement:**

- 4 publications
- American Chemical society Agroeducation award 2016
- Best presentation award, Society of toxicology, India 2016

## Natural pesticide development from plants with acetylcholinesterase inhibitory activity

### Salient features

- Use of weeds and abundant plants with acetylcholinesterase inhibitory activity for pest control
- Eco-friendly and sustainable effort towards integrated pest management
- Easy, safe and non-toxic to non target organisms including human
- Non persistent organic compounds
- Free from threat of environment pollution, persistence and bioaccumulations
- Easy preparations and cheap availability of plants

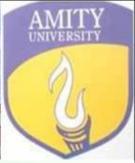
### **Achievements:**

- Two publications
- One patent







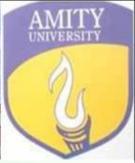


### **Research** and Publications

| S.NO. | Type Research / Publications  | Numbers       |
|-------|---|---------------|
| 1     | Research papers in Journals   | 92            |
| 2     | Research Papers in Seminars / Conferences                           | 215           |
| 3     | Other Publications  • Books:  •Articles in:  —Newspaper  —Magazines | 7<br>14<br>07 |
| 4     | Research Scholars   | 40            |







### **Patent**

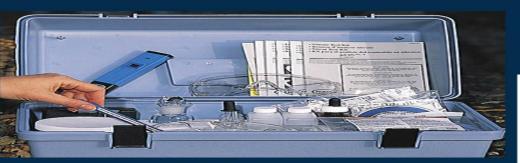
- Jindal, Tanu. 2016. An exposure system for dosimetric application of microwaves to small insects, Provisional draft of CRN 1948, Filed July 22, 2016
- •Jindal, Tanu. 2013. Simple Lab/Field Lysimeter. 353/DEL/2009, Filed February 25, 2009, and issued February 8, 2013
- Jindal, Tanu. 2013. Photochemical method for degradation of persistence pesticide. 592/DEL/2013, Filed February 28, 2013
- Jindal, Tanu. 2012. Low Cost Water Testing Kit. 2912/DEL/2012, Filed August 7, 2012.
- Jindal, Tanu. 2012. Development of natural pesticides from plants with acetyl cholinesterase inhibitory activity. 3963/DEL/2012, Filed December 20, 2012.
- Jindal, Tanu. 2011. Assembly to measure volatilization and mineralization of xenobiotics. 1908/DEL/2009, Filed September 15, 2009, and issued March 8, 2011.





## LOW COST WATER TESTING KIT





### INTRODUCTION

The present invention provides a water test kit to determine the inorganic contaminants which is based on physiological parameters and their correlations with the help of statistical analysis. Fifteen different parameters of water quality can be analyzed by using a single test kit.

### **ADVANTAGES**

- Fifteen significant water quality parameters in a single kit.
- Gives information on suitability of water for drinking.
- Easy to use simple steps following the manual.
- Cost effective 25 samples, 15 parameters can be tested

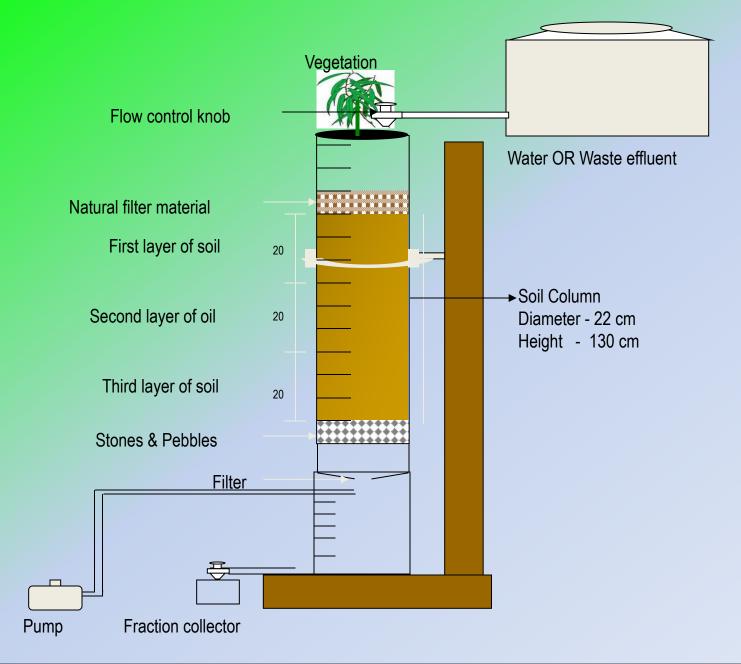
### **USERS AND MARKET**

**School and College students:** Students learning about water qualities in schools and colleges will be the primary users of our proposed water testing kit

**Research scholars:** Researcher working on water quality analysis would be benefited saving lot of time and being cost effective

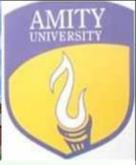
**House hold and other:** House hold users will be beneficial to monitor drinking water quality in low cost with easy

### **Cost Effective Lysimetric Design**







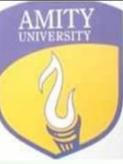


### **Awards and Honors**

- Scientist of the Year Award-2015 by National Environmental Sciences Academy (NESA)
- •Environmentalist of the Year Award-2014 by National Environmental Sciences Academy (NESA)
- Young Scientist Project from Department of Science and Technology (DST), New Delhi 2004-2007
- •Junior Research Fellowship 1996-98 and Senior Research Fellowship 1998-99 from UGC through Graduate Aptitude Test for Engineering (GATE)
- Best paper presentation award in "Environment III" Symposium 10 12
   December 1996, held at National Chemical Laboratory, Pune
- •Travel grants: Indian National Science Academy (INSA), Centre for Scientific and Industrial Research, Delhi and Department of Science & Technology, Delhi for USA, to present paper at American Chemical Society (ACS) Meetings in 1997, 2003, 2006, 2008, 2013, 2014 and 2015





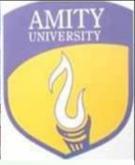


## **Training Courses**

- •One day workshop on "Air Pollution Monitoring: Next Generation Instrumentations and Techniques", May 04, 2016, Civil Engineering Department, IIT Delhi, India
- •International Workshop for Research on the possible impact of EMF radiation exposure from mobile towers and handsets, April 8-9, 2016, IIT Delhi, India
- "Integrative Science and Interdisciplinary Engineering", June 5, 2015, Amity University, Haryana
- Workshop on "Research opportunities in Hydrology and water resources under climate change", IIT Guwahati, April 3, 2015
- •"Issues involved in man-animal conflict-strategies for mitigation" organized by Amity Institute of Wildlife Sciences, January 16-17, 2015, Amity University, Noida
- •Training programme on "Monitoring of PM<sub>2.5</sub> and other notified air pollutants as per revised NAAQS", January 19-23, 2015 organized by CSIR-NEERI, Delhi
- International workshop on "Green Initiatives in Energy, Environment and Health", December 2-3, 2013, Hotel Maidens, Delhi
- •Preclinical GLP Study Director's Workshop, Veterinary College, Bangalore, 8-10 October, 2012





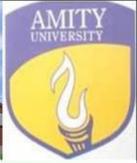


### **PROFESSIONAL MEMBERSHIPS**

- 1. Indian Association of Microbiologists (AMI)-Life Member
- 2. Society of Pesticide Science, India- Life Member
- 3. Agrochemicals Division, American Chemical Society, USA
- 4. Society of Toxicology (STOX), Life Member
- 5. Indian Science Congress (ISC), Life Member
- 6. Executive Member, Indian Network of Soil Contamination Research (INSCR)

# AMITY





## **MOU between Amity Institute of Environmental, Toxicology,** Safety and Management and Toxicology Centre University of Saskatchewan





### Memorandum of Understanding (MOU) Between

Amity Institute of Environmental Toxicology, Safety and Management, Amity University Uttar Pradesh And

### Toxicology Centre, University of Saskatchewan

The Amity Institute of Environmental Toxicology, Safety and Management, Amity University Utter Pradeah (nerein after referred as "Aller ESM") situated at Sec-125, Nolid (U.P.), India of the FIRST PART registered office at 44 Campus Drivally of Saskatchewan femerin after referred as TCUS) having its registered office at 44 Campus Drivally of Saskatchewan femerin after referred as TCUS) having its PART, collectively referred to as Parties and individually referred as Party, are pleased to enter the production of the Party of the

- a) Joint development and/or teaching of courses, especially short courses and compressed format courses, and of other short-term student training programs (e.g., summer programs).
   b) Collage area (essembly projects in the areas of environmental and biomedical toxicology).
- Joint application for new collaborative research funding
- Exchange of students, both graduate and undergraduate, for short-term research and/or training opportunities;
- e) Training of faculty members and scientists in new techniques and approaches;
- Training or faculty memoers also scientists in new teamingues and approximate,
  j Jointy supervised Ph.D. Students and associated dissertation work;
   Jointy supervised Ph.D. Students and international conferences, symposia and seminars;
   Jointy supervised Ph.D. Students and seminars;
   Jointy Jointy Jointy Jointy Students and Student

- a) The MOU shall come into effect from the date of last signing and shall remain valid for five years. It may be further renewed by mutual agreement in writing.
  b) Amendments and additions may be made to the MOU subject to the written consent of both parties. The MOU can be terminated by either party with a minimum of 90 days prior notice in writing to the other party.
- The MOU does not imply any financial obligations or legal binding on either party.
- The model does not many any internal ourganisms or regal british on either party.

  The model does not many any internal or any programs and exchanges shall be discussed and acted upon by the parties through earlier through earlier through the parties shall respect the confidentiality and intellectual ownership of information shared between them for academic co-operation.
- between them for academic co-operation.

  Fach party shall respect the image and reputation of other party and consult other party before any publicity or external reference to this MCU is made. Any publications that may arise from the both parties to accentan quality or the appropriate and such publications.

  In the event of any dispute arising oul of this MCU, such dispute shall be settled mutually in a smicable manner.
- h) Both parties hereby agree, under this MOU, to indemnify and hold each other harmings

Notices and Contacts

### In case of AIETSM:

Prof. Tanu Jindal Prof. 1 and Union Director Amity Institute of Environmental Toxicology, Safety and Management Amity University Uttar Pradesh Sector – 125, Noida-201313 Uttar Pradesh

### In case of TCUS

Prof. Karsten Liber Director
Toxicology Centre
University of Saskatchewan
44 Campus Drive
Saskatoon, Saskatchewan S7N SB3

b) Each Party will appoint a contact person and inform the other Party. Initially, those individuals will be Prof. Tanu Jindal (AIETSM) and Prof. Karsten Liber (TCUS). Should there be any change in the contact person, the concerned Party shall inform the other Party immediately.

This MOU is prepared in English language and two original copies signed. Each party will receive one

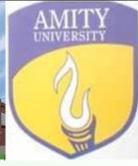
| Signature: 33.05:15                                      | Signature: K. Lille.                  |
|--|---------------------------------------|
| Name of Official: Dr. B.L. Arybegistrar AMITY UNIVERSITY | Name of Official: Prof. Karsten Liber |
| Designation: Registrar, AUUPR PRADESH                    | Designation: Director, TCUS           |
| PARTY OF THE FIRST PART                                  | PARTY OF THE SECOND PART              |
| Date:  | Date: Sept. 23, 2015                  |
| In presence of: 1. A (1am mode)  2. Grandan  2. Grandan  | In presence of: 1. Advantage .        |

### Dr. TAND HNDAL

Director (AIETSM) mity Institute of Environ





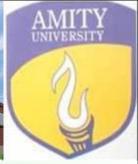


Meeting with Kent University Delegates with Dr. Atul Chauhan
On Belongingness Day Celebration 2018
14 May, 2018









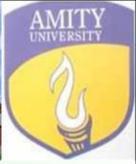
# World Earth Day 2018 "SAVE EARTH, TO BRING WORTH, FOR THE NEW BIRTH" April 20, 2018











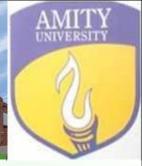
### **World Water Day 2018**

"Nature for Water"-Exploring Nature Based Solutions to the Water Challenges
In association with
Central Water Commission
March 22, 2018









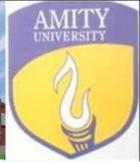
### 4th Conference

Science and Geopolitics of Himalaya-Arctic- Antarctic (SaGAA IV), November 30 – December 1st, 2017









AIR POLLUTION MITIGATION STRATEGY BY AWARENES

CAMPAIGN; EXHIBITION; RADIO PROGRAM And WORKSHOP FOR

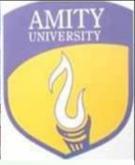
"SAY NO TO CRACKERS"









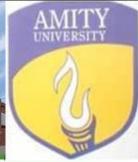


## WORLD OZONE DAY & WORLD ENVIRONMENT HEALTH DAY 2017 September 25th, 2017









World Environment Day 2017

Air Pollution Sources and Mitigation strategies

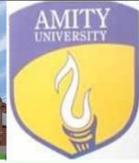
May 15, 2017







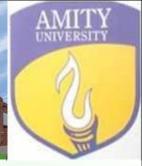




# World Water Day 2017 "EMBRACE THE WATER, SUSTAINABLE SOLUTIONS FOR THE FUTURE" March 21, 2017







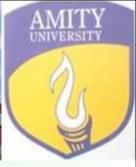
# Training Programme On Fire Safety











### Workshop

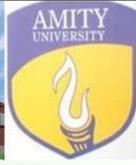
Air, Water and Soil: Pollution Prevention Paradigm-2016
In association with
Southern Federal University, Russia







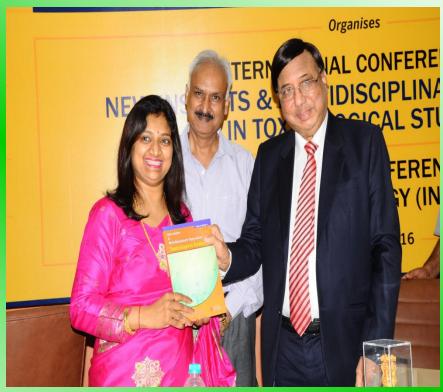




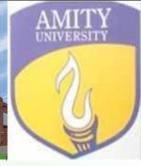
#### **International Conference**

New Insights & Multidisciplinary Approaches in Toxicological Studies" 36th Annual Conference of Society of Toxicology (India) 2016







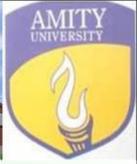


#### **World Environment Day-2016**









#### **3rd International IUPAC Conference**

Agrochemicals protecting crops, health and natural environment

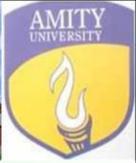
 New Chemistries for Phytomedicines and Crop Protection Chemicals April 6-9<sup>th</sup>, 2016







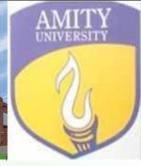




#### National Water Summit, March 22, 2016- PHD CHAMBER





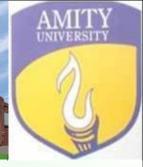


# Water, Sanitation and Hygiene (WASH) ASSOCHAM, December 2, 2015









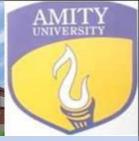
# International Conference Science and Geopolitics of Arctic and Antarctic Regions (SaGAA III), September 29-30, 2015









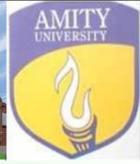


#### **World Environment Day-2015**







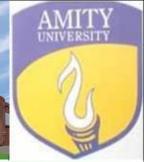


# Earth Day-2015







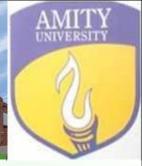


## **World Water Day- 2015**









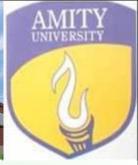
# **World Ozone Day-2014**











#### **National Conference**

Earth and Environment: Pollution and Prevention Ministry of Earth Science, January 28-30, 2014

# Preserving the planet

With the presentation of 88 papers and 9 lectures, the national conference on environment initiated discussions on pertinent issues affecting our earth

#### Marie San

What: National conference on 'Earth and Environment: Pollution and Prevention-2014'

When: January 28-30, 2014 Where: Amity University, Noida

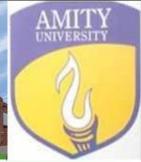
national conference on the pressing problem of environment pollution, was organised by Amity Institute of Environmental Toxicology, Safety and Management (AIETSM) in association with Ministry of Earth Sciences. Convener of the conference, Prof Tanu Jindal, director, AIETSM, highlighted the themes of the conference as land use and soil health, ocean and water resources and air quality, atmosphere and climate change.



The conference was inaugurated by a galaxy of experts including Dr John Dunham, deputy chief, environment, science and technology affairs, US Embassy; Dr Vinod Babu, incharge, Hazardous Waste Management Division, CPCB; Dr RK Khandal, VC, UP Tech University; Dr Sanjay Bajpai, director/scientist 'F', Technology Mission Cell, Water & Solar Energy, DST. Dr Ashok K. Chauhan, Founder President, Amity Universe, conveyed his best wishes for the success of the conference and wished all the participants good luck.

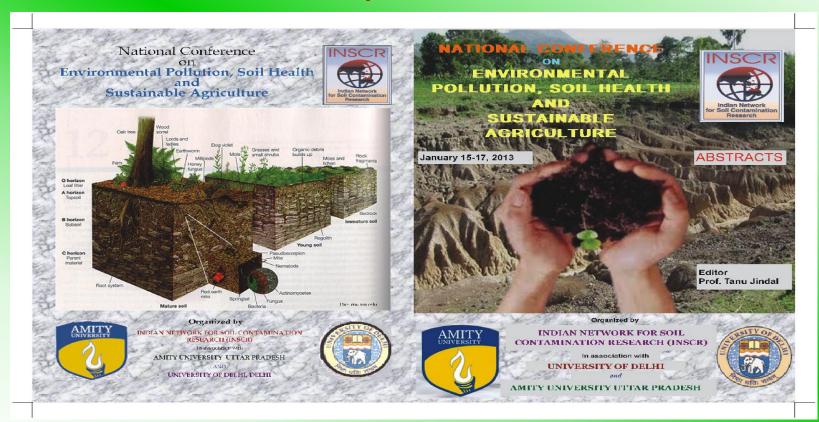
A total of 88 papers and 9 lectures were presented during the conference, which served as a platform to sensitise the masses about the grave implications environmental deterioration. Among the eminent guests who delivered talks were Prof RK Singh, CSIR, Lucknow; Prof. Neera Kapoor, IGNOU, New Delhi; Dr RS Antil, HAU, Hisar; Dr Chirashree Ghosh, DU; Dr J Behari, professor (retd), Jawaharlal Nehru University; Dr RB Lal, deputy director, Impact Assessment Division, Ministry of Environment and Forests and Prof Rasik Ravindra, Earth System Science Organisation, Ministry of Earth Sciences, New Delhi. GE



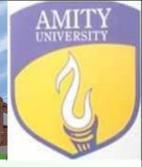


#### **National Conference**

**Environmental Pollution**, Soil Health and Sustainable Agriculture, **Indian Network for Soil Contamination Research and Delhi University**, **January 15-17**, 2013



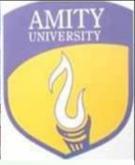




National Workshop
Pollution Prevention Paradigm
Ministry of Earth Sciences, May 11, 2012







#### Workshop

**Use Bicycles for Healthy Youth and Green Environment Ministry of Environment and Forests, March 12, 2010** 

# Going the bicycle way...



In an Awareness Campaign for Students and Youth, Amity Institute of Environment Toxicology Safety and Management organized a workshop on promoting the use of bicycle as a modest means of transport.

The Indian Environment Society (IES) under National Environment Awareness Campaign (NEAC) and

the Ministry of Environment and Forests (MOFF) lent all the support possible to the program. Dr. Tanu Jindal, Director, Amity Institute of Environment Toxicology Safety and Management urged students to bicycle as cycling not only conserves energy but is also a great exercise that promotes good health. Besides, it is cost effective because it requires less maintenance and uses up no fael; Cycling can also prove effective in dealing with the environmental threat of Global Warming as it emits no toxic Moreover. causes no sound pollution. Just like developed countries like USA, Japan, Australia have.

India must go the bicycle way too. So, what you waiting for? Pick up that bicycle from the garage- save the world while refreshing your childhood memories!

If I were a bird, I would be the peacock, the national hird of our country. It is the most beautiful





#### **GAS CHROMATOGRAPHY**

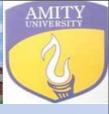














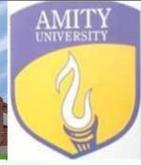






# AMITY UNIVERSITY









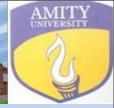








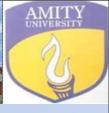




#### **WET LABORATORY**





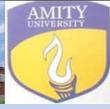










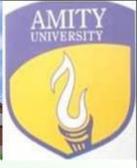


#### **Fume hood for Toxicological Analysis**



# AMITY UNIVERSITY

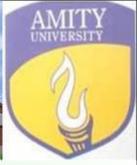










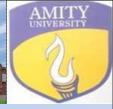


#### **Respirable Dust Sampler (PM<sub>10</sub>)**









#### **Microbial Laboratory**

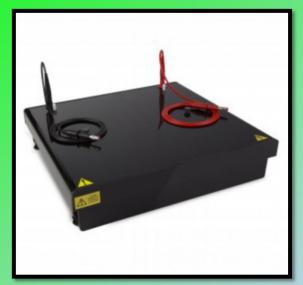








#### **Molecular Toxicology Laboratory**



**Comet Assay** 



**Fluorescent Microscopy** 



**DNA Gel Electrophosis** 



**SDS PAGE** 



**Gel UV illuminator** 



Amity Centre for Ocean-Atmospheric Science and Technology (Amity COAST)

8

**Amity Centre for Environmental Science and Health (ACESH)** 

Amity University Haryana, Amity Education Valley, Gurugram (Manesar-Panchgaon)









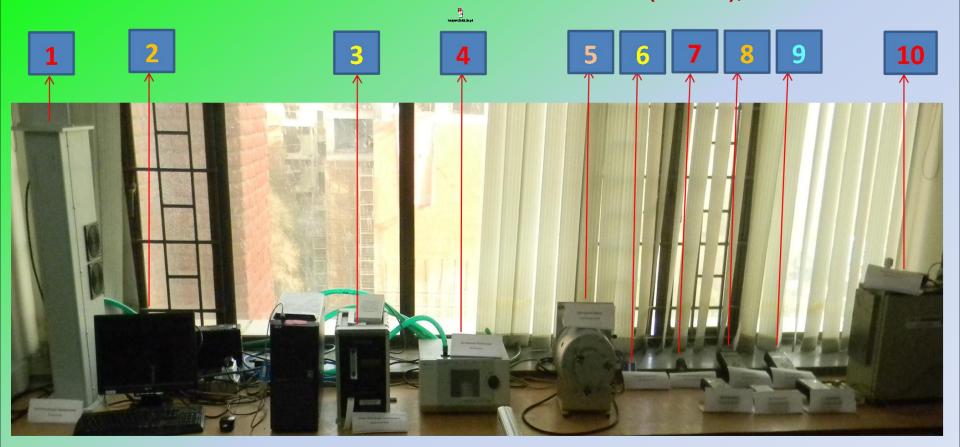
#### **Vision and Mission**

- \*Academic Curriculum for UG and PG Students (Besides the on-going Open Elective courses, a 2-year M. Tech. in Atmospheric Technology and Climate Management (ATCM) is being introduced very soon)
- \*Advanced Climate Research Laboratory (CRL) established
- \*Physicochemical and Transport Characteristics of Aerosols
- \* Radioactive and Hydrological Aspects of Anthropogenic Aerosols
- \*Regional Air Quality Diagnostics and Associated Human Health Effects

#### **Recent and On-going Studies**

- \*Organized a National Workshop on "Role of Aerosols in Air Quality, Weather and Climate" at AUH on 08 January 2015.
- \*Black Carbon and Particulate Matter Characterization during Diwali 2015 Festival Episode
- \*Road-Space-Rationing (Odd-Even) Scheme of Delhi Government 1st phase (01 15 January 2016)
- \*Road-Rationing Scheme of Delhi Government 2nd Phase (15 30 April 2016)

Climate Research Laboratory has been established in collaboration with (i) (Indian Institute of Tropical Meteorology –New Delhi Unit (IITM-DU) and (ii) Aryabhatta Research Institute for Observational Sciences (ARIES), Nainital.



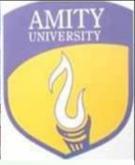
#### Figure: Climate Research Laboratory (CRL) at AUH, Panchgaon

(1) Three-Wavelength Nephelometer, (2) Dedicated Computer for On-line Parameter-Setting and Data Display, (3) Seven-Wavelength Aethalometer, (4) Aerodynamic Particle Sizer, (5) High Volume Sampler, (6) Micro-Aethalometer, (7) Portable Weather and Environmental Meter, (8) Multi-Wavelength Sun-

Photometer, (9) Multi-Wavelength Ozonoe and Water Vapor Monitor, and (10) Aerosol Particle Counter

### AMITY UNIVERSITY ITTAR PRADESH







Prof (Dr.) Tanu Jindal (Director) Qualification: Ph.D.

Area of Research: Environmental Toxicology, Environmental health and safety, waste treatment, environmental pollution monitoring and abatement, environmental impact

assessment etc.



Prof (Dr.) J. Behari (Emeritus Professor) Qualifications- Ph.D , PGD . **Area of interest-**Significantly contributed towards soil moisture measurement, waste water treatment, bioelectromagnetics etc.



**Prof A.L. Agarwal (Emeritus Professor)** 

Qualification: Ph.D.

Area of Research: Air monitoring, **Environmental Toxicology**, **Environmental** 

health and safety



**Dr. Ambrina Sardar Khan** (Assistant Professor) Qualifications: Ph.D.

Area of Specialization: Air & Water monitoring, Sustainable Urban Development & Nutrition

Science



Ms. Shivangi Somvanshi (Assistant

Professor)

Qualifications: M.Tech

Area of Specialization: Remote Sensing and GIS, Water and Wastewater

Engineering



Dr. Renu Dhupper (Assistant Professor)

Qualifications: Ph. D.

Area of Specialization: Environmental Science, Ecology, Desert Ecology, Stress

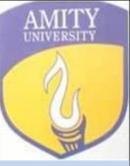
Physiology



Ms. Richa Dave (Assistant Professor) Qualifications: Ph.D. (Pursuing), UGC-NET Area of Specialization: Heavy metal contamination, Bio-remediation, Environmental statistics, Biochemistry and **Eco-toxicology** 

# AMITY UNIVERSITY







**Dr. Prateek Srivastava** (Assistant Professor)

**Qualifications:** CSIR-UGC-NET, D. Phil. **Area of Specialization:** Limnology, freshwater ecology, riverine ecosystems



**Dr. Manju Rawat Ranjan** (Associate Professor)

Qualifications: Ph.D

**Area of Specialization**: Environmental Chemistry, Solid Waste Management, Heavy Metals Pollution from Small Scale Industries, EIA), GHGs Emission from Landfill Areas, Ground Water Pollution.



**Dr. Ashutosh Tripathi** (Assistant Professor)

Qualifications: Ph.D. Diploma in

Industrial Safety, UGC-NET

Area of Specialization: Bioremediation, Industrial waste water treatment, Air and water monitoring, Sustainable management tools



**Dr. Manoj Chandra Garg** (Assistant Professor)

Qualifications: Ph.D.

**Area of Specialization**: Environmental Engineering (Membrane Water Filtration)



**Dr. Abhishek Chauhan** (Senior Scientist)

Qualification: Ph.D.

Area of Specialization: Environmental Microbiology, Bioactive compounds, Algal, Fungi and bacterial identification, NABL ISO, GLP and FSMS



**Dr. Amita Sinha** (Assistant Professor-I)

**Qualification:** Ph.D.

Area of Specialization: Water pollution,

Biomonitoring, Algal diversity







#### **Research Scholars**



Name: Dr. Shalini Thakur (Research Scientist) Qualifications: Ph.D (Environment Sciences) Ph.D Topic: Contamination of Water Bodies through Pesticide Usage in Major Crops



Name: Dr. Khushbu Gulati (Research Scientist) Qualifications: Ph.D (Environment Sciences) Ph.D Topic: Lysimetric Studies To Access The Risk Of Soil And Groundwater Contamination By Chlorpyrifos In Sandy Loam Soils With Different pH



Name: Dr. Anuj Ranjan (Scientific Assistant) Qualifications: Ph.D (Environment Sciences) Ph.D Topic: Physico-chemical and biochemical Assay of Organophosphorus pesticides for Human risk assessment



Qualifications: Ph.D (Environment Sciences) Ph.D Topic: Study of contamination of Earth (soil and groundwater) through leaching of sewage waste from heavily loaded unlined drains in Delhi

Qualifications: Ph.D (Environment Sciences)

Ph.D Topic: Development of cost effective

Lysimeter and Method for Leaching

studies to estimate the risk assessment



Name: Laxmikant Bhardwaj (Scientific Assistant) Qualifications: Ph.D (Environment Sciences)

Pursuing

Ph.D Topic: Anthropogenic Activities in Antarctica and its impact on Environment



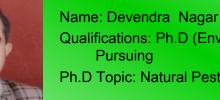
of Groundwater contamination

Name: Neha Singh (JRF)

Qualifications: Ph.D (Environment

Sciences) Pursuing

Ph.D Topic: Biological Correlation and EMF



Pursuing

Qualifications: Ph.D (Environment Sciences)

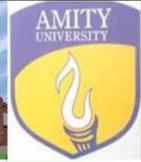
Pursuing

Name: Dr. Ashwani Kumar

Name: Anuj Suresh (JRF)

Ph.D Topic: Natural Pesticides





#### **Staff**



Name: Naresh Kumar

**Designation: Technical Assistant** 

**Qualification: BCA** 



Name: Vikas Juneja

**Designation: Office Assistant** 

Qualification: B.com



Name: Mariamma Joseph

**Designation: Secretary** 

**Qualification: Higher secondary** 



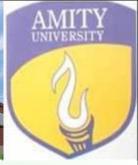
Name: Vikram Kaushik

**Designation: Office Assistant** 

**Qualification: MBA** 







# M.Sc. 2013-2015











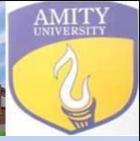
Earth, sky, water, air and fire
Constitutes our body, existence and attire
We must bow, appreciate and admire
Love of our mother earth
Do not pollute with endless dearth
Let's awake and bring back its worth
Restore, rejuvenate and give rebirth
To our wounded and exhausted Earth











# THANK YOU



"Save earth

to bring worth for the new birth"