

PROFILE OF THE SCHOOL OF ENERGY, ENVIRONMENT AND NATURAL RESOURCES (SEEN)



The School of Energy, Environment and Natural Resources (SEEN) was established in 1981 by Prof. S. Krishnaswamy and Prof. A. Gnanam with a vision to establish a scientific department of the highest calibre where teaching and education are totally integrated with state-of-the-art research in the field of energy and environment and that has grown rapidly to become a multidisciplinary school. The School includes five departments *viz.*, Solar Energy, Bioenergy, Environment, Natural Resources and Waste Recycling, Marine & Coastal Studies along with the Centers such as Centre for Biodiversity and Solar Testing Centre. SEEN has developed excellent facilities for the academic and research activities with the support of University Grants Commission (UGC), Department of Science and Technology (DST) and Ministry of New and Renewable Energy (MNRE). The school has received research grants under SAP (Special Assistance Programme) from UGC to encourage the infrastructure facilities for

the researchers. Every year ENERGY FEST is organised to motivate the students and researchers to address the societal applications. The School has sophisticated and advanced analytical infrastructure facilities to provide high-quality research. Many research equipments designed for the School connecting the motto of the lab to land have been established for the betterment of the society. The faculty members from the school have received recognitions from various National and International organizations based on their research and teaching activities. Over 350 PG and M.Phil., students and 150 research scholars have completed their academic and research degrees from the School. The research articles with high impact factor have been published from the SEEN which scored to more than 1000 research papers. Most significant achievements include three eminent Professors of our School who have occupied the Vice-Chancellors positions in the State universities of Tamil Nadu.

FACULTY PROFILE

1. **Dr. S. KANNAN**

Chairperson

Professor and Head

Department of Environmental Studies

Specialized area of Research

i) Hydrobiology

ii) Environmental Health

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2. **Dr. C. GOPINATHAN**

Professor and Head

Department of Solar Energy

Specialized area of Research

i) Solar Energy

ii) Physics of solar Photovoltaic Materials

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3. **Dr. C.M. RAMAKRITINAN**

Assistant Professor & Head

Department of Marine and Coastal Studies

Marine Ecotoxicology and Pollution

Specialized area of Research

i). Marine Ecotoxicology and Pollution

ii). Marine Molecular Taxonomy

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4. **Dr. M. ANAND**

Assistant Professor

Dept. of Marine and Coastal Studies

Specialized area of Research

i). Marine Natural products and Nano sciences

ii). Climate Change and Ocean Acidification

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5. **Dr. B. VIJAY BHASKAR**

Assistant Professor

Department of Bioenergy

Specialized area of Research

i) Atmospheric particles Measurements and Modelling

ii) Biomass gasification

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6. **Dr. S. SELVAKUMAR**

Assistant Professor & Head
Department of Natural Resources and Waste Recycling

Specialized area of Research :

i). Environmental Toxicology

ii). Bio-fuel studies.

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COURSES OFFERED

The School adheres to the road of both teaching and research activities; it makes an effort to create harmonious interpersonal relationships in the academic innovation and research space in the field of Energy and Environment. The School provides ample of opportunities for the students to acquire basic knowledge in their respective subjects.

S. No.	Courses Offered	Subject	Essential Qualifications
1	Master of Science	Environmental Science	B.Sc., Degree in Physical & Chemical Science and life sciences
2	Master of Science	Marine Biology	B.Sc., in any branch of Life Science
3	Master of Philosophy	Environmental Science	Master's Degree in Environmental Science and other Life Sciences
4	Master of Philosophy	Marine Environmental Studies	Master's Degree in Marine Biologys and other Life Science Degree
5	*Doctor of Philosophy	Interdisciplinary research in Energy, Environment, Biodiversity, Marine Biology	Master's Degree in respective field

*Like interdisciplinary areas of teaching, the School is offering Ph.D program in each department with specialization of Solar Energy, Bioenergy, Environment, Natural Resources & Waste recycling and Marine Biology.

ONGOING PROJECTS

Sl. No	Title of the Project	Funding Agency	Duration & Amount ` in lakhs	Thrust Area
1.	Research, Design and Development of Solar Thermal Technologies	Ministry of New and Renewable Energy, Govt. of India.	2016-2017 9.11/year	Solar Energy

2.	Molecular Diversity of Coral Zooxanthellae of Palk Bay Coast, India	Department of Biotechnology (DBT),	2014-2018 48.90	Environmental Biotechnology
3.	Toxicological impact of dredged marine sediment of Krishnapatnam Port”	ESSO-NIOT, MoES,	2017 8.30	Marine Ecotoxicology
4.	Investigation of Marine Seaweed Pigments as Sensitizer in Solar Cells	Science and Engineering Research Board	2013-2017 40.88	Marine
5.	An investigation on black carbon measurements and its impacts on meteorology in different climatic regions.	Science and Engineering Research Board	2013-2017 44.30	Bioenergy

MAJOR EVENTS

The School of Energy, Environment and Natural resources (SEEN) has conducted many conferences and seminars. In the last ten years, the School has organized more than 25 National and International conferences and seminars.



International Conference on Ocean Research- 2015



National Conference cum Acidification workshop on solar Energy 2017



RAMETOX-2015



SCUBA Diving Programme

INFRASTRUCTURAL FACILITIES

The aim of this interdisciplinary school is to develop state-of-the-art research infrastructure in various areas of Energy, Environment and Marine Science. The available facilities are rapidly expanding as the school grows.

Regional Test Centre (Solar Thermal)

The Regional Test Centre (Solar Thermal) was established during the year 1992 by the Ministry of New and Renewable Energy, Govt. of India. The Centre provides test and referral

facilities to the manufacturer's / state nodal agencies / R&D organizations for Testing Solar Thermal Systems. It also acts as the testing centre for Bureau of Indian Standards (BIS) for solar collectors and solar cookers. The Centre inspects, monitors and tests various solar devices on-site on behalf of MNRE to ensure the quality of products. It also organizes training programmes, business meets and offer technical back-up for potential users of solar thermal devices. The Centre is accredited with ISO 17025: 2005 by National Accreditation Board for Testing and Calibration Laboratories (NABL) and is recognized by Bureau of Indian Standards and Ministry of New and Renewable Energy, Government of India.



*Regional Test Centre
(Solar Thermal), MKU*



*Test beds at Regional Solar
Energy Testing Centre*



Time constant test



Incident angle modifier test

Biomass Gasification Centre

Ministry of New and Renewable Energy sanctioned to develop an extensive biomass gasification centre called Gasification Action Research Project (GARP) along with IITs. From this research centre, many studies have been carried out and the results were implemented in industrial applications. Long stick Gasifier was one of the new technology that was developed in the Centre. The Centre has a full setup to design any type of gasifiers with welding machine, generators and other related equipments.



Biomass gasification for conversion of waste to energy

Centre for Biodiversity and Forest studies



From the Bioenergy department, Centre for Biodiversity and Forest Studies was established during April 2000 with the support of Ministry of Environment and Forests, Govt. of India, New Delhi & Madurai Kamaraj University. The aim of this centre is to study biodiversity resources with reference to behavior, ecology of important economic of the threatened & endemic species.



Greenhouse setup in the Centre for Biodiversity and Forest Studies

Department of Marine and Coastal Studies at Pudumadam



DMCS at Pudumadam

Automated Continuous Flow through Unit

Fluorescence Microscope



Teachers and Students underwent Diving Training

A Centre for Marine and Coastal Studies (CMCS) was instituted in 1998 for the establishment of a Marine Field Research facility at Pudumadam, a coastal village in Ramnad District. The university has received 6 acres of coastal Patta land by way of donation and One acre Seven cents by way of purchase from the local people to establish this centre. The Centre was upgraded to the Department of Marine and Coastal Studies from October 2009. Through MoES-ICMAM funding, the department established a Marine Ecotoxicology Research Laboratory at Pudumadam during X Plan period as a National Research Facility for carrying out the Marine Ecotoxicological Studies for the Derivation of Seawater Quality Criteria. The Department is well equipped with Marine Underwater (SCUBA) Diving facility.

Classroom and seminar hall

The School has two smart classrooms and a common seminar hall with video facility like LCD projector, speakers, white board and computers with internet facility etc. was established.

Library facility

The School has a separate library facility with more than 2500 books in different subject areas and receives more than 15 periodicals regularly.

Other instrumental facilities

The School is having all basic necessary equipment for research in Energy, Environment and Marine Studies. Each department has separate laboratory facilities. Some unique instruments like Solar Simulator, Aethalometer and Weather Station are also available in the School. Some of the instruments are listed here



Solar Simulator



Aethalometer -AE 31



Atomic Absorption Spectrophotometer (AAS)



HPLC



Flame Photometer



Automatic Tissue Processing Unit



Underwater Remotely Operated Vehicle (UWROV)



Photomicroscope for Cancer research



Growth Chamber for RET studies

AWARDS AND ACHIEVEMENTS

School

The School of Energy, Environment and Natural resources (SEEN) has many achievements and many awards. The school has received research grants under **SAP** (Special Assistance Programme) from UGC to encourage the infrastructure facilities. Ministry of New and Renewable Energy, Govt. of India has recognized the school by establishing a Regional Test Centre (Solar Thermal). Department of Science and Technology (**DST- PURSE**) is also one more recognition to the School. The School has been recognized by its work and has been supported by international organizations such as IOC/UNESCO, UNDP, WHO, IFS, GCRMN and by national organizations such as the MoES (DOD), MoEF, ISRO, ICMR, DBT, CSIR, Planning Commission and the UGC. The GEF/UNDP has also identified and included this centre (now department) as a member institution to carry out research activities in the Gulf of Mannar Marine Biosphere Reserve to protect and conserve the coral reefs.

Faculty members

The faculty members of the School have received recognition from various national and International agencies in terms of awards. Some of them are listed here: Lifetime Achievement Award by UN – ECOSOC, DPI, UNESCO, UNICEF, Fellow, International Energy Foundation (FIEF) Canada, The International Union for Conservation of Nature and Natural Resources [IUCN], Merit of Excellence award in the field of Medicinal Plants Conservation at International level by University of Colombo, Prof. S. Kannaiyan Memorial Award 2017 by NABS, India, Best Vice-Chancellor Award, Lifetime Achievement Award by Nature and Geo Society, Lifetime Achievers Award by International Institute of Food and Nutritional Sciences (IIFANS), Merit of Excellence award in the field of Plant Sciences, Best Scientist in Environmental Management, Young Scientist Award, INSA (Indian National Science Academy) Visiting Scientist Fellowship, Best Scientist Award, Best Assistant professor Award and Raman Fellowship.

Students

PG students have successfully qualified for National Eligibility Test, State Level Eligibility Test and GATE Examination. Scholars and students becoming as entrepreneur in Renewable energy and Environment. Many of our students have received National fellowships from UGC, DST and CSIR

EXTENSION ACTIVITIES

Village Adoption through the Swacchata Pakhwada program



The aim of this program is to motivate people to create clean and green environment. Through this program the School of Energy, Environment and Natural resources (SEEN) has adopted a village located about ten kilometres approximately away from the University called “VELLAPARAPATTI”. The students and faculty members have interacted with the people to identify their issues by using questionnaires, which were given to every household in order to analyze their nature of life. From the questionnaires it was observed that peoples in the village are living without electricity in many houses and also using firewood for cooking, another problem is the unawareness of public sanitation. In addition to this survey faculty members interacted with local government middle School students and teachers to understand their problems from their point of view.

Village Forest Council

The School of Energy, Environment and Natural resources (SEEN) collaborates with the Department of Forest for Village Forest Council program, involves local people in re-afforestation and protection of degraded forests and to share with them the sustainable benefits from these forests.



International Coastal Cleanup Day:

The third Saturday of September each year is observed as International Coastal Cleanup (ICC) Day. This Coastal Cleanup Day is dedicated for the improvement of beaches, coastal regions and surrounding areas throughout the world. In this event, the volunteers around the world participate in the coastal cleanup activity in their territory. Our School is conducting ICCD events every year since 2013. This event also signifies the Swachh Bharat movement in our country.



Sensitization to college and School students

SEEN has organized many awareness programs on Renewable energy to public, entrepreneurs, college and school students. School and College students from Madurai and other districts such as Ramnad District were sensitized with the awareness program on coastal hygiene and sanitation by ICCD programs.

Contact Details

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