



# Gujarat Technological University

Press Release

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## **BARC develops Membrane based Next Generation Water Purification Devices**

### DAE & GTU organises National Workshop on Indigenous Water, Wastewater & Solid Waste Treatment Technologies

**Ahmedabad:** BARC has developed Membrane based Next Generation Water Purification Devices. Field trials were carried out in six districts in the State of Punjab viz Ferozpur, Faridkot, Muktsar, Bathinda, Mansa and Moga. A total 24 tube well water samples were collected from different villages in these districts. Solar Desalination Technologies for Membrane Based Water Purification for Remote Rural Areas without Power Supply.

This was discussed at National Workshop on Indigenous Water, Wastewater & Solid Waste Treatment Technologies, which was organized by The Department of Atomic Energy [Government of India] in association with Gujarat Technological University [GTU] under Swachhha Bharat Mission. Ms. Nisha Singh, Joint Secretary, Department of Atomic Energy spoke about Department of Atomic Energy's Innovative Technologies available for Urban India for Water Treatment & Solid Waste Treatment. She said that India's urban population is increasing at a rapid rate leading to gap between demand and supply of urban services. She gave example of the Nisargruna technology developed by Bhabha Atomic Research Centre, which offers a comprehensive solution for handling the biodegradable waste materials. The technology has evolved in last 8 years and 160 such Nisargruna plants are operative in Maharashtra, Kerala, Tamil Nadu, Gujrat, Karnataka, Himachal Pradesh, Jharkhand, Orissa and Delhi. Nisargruna (repaying Nature's loan) is based on the concept of maintaining the elemental balance in the nature.

Dr. Akshai Aggarwal, Vice Chancellor of GTU mentioned activities under GTU Research and Consultancy Services Cell [RCSC]. He advised students to use knowledge and research in technology to provide services to society. He appealed students to go to villages to understand problems and find solutions. He also mentioned that over 1000 faculties out of GTU's 17,000 faculties are engaged in Ph.D. and other Research work. Dr. Sharad P. Kale, Associate Director of Bio-science Group in Bhabha Atomic Research Centre, Mumbai was chairman of the session. Registrar Shri J.C.Lilani, I/c Registrar of GTU welcomed the guests.

Prof. Shri Rajnikant Patel, advisor, RCSC of GTU presented vote of thanks. Dr. G.P.Vadodaria, Principal L.D. Engineering College, Dr. Rajul Gajjar, Principal, Vishwakarma College of Engineering were among dignitaries present.

Prof Saswat Bandyopadhyay of CEPT University, Ahmedabad talked about declining status of Cities in emerging economy & Role of Technologies in City Management. He said that United Nations models indicate that by 2050 6.5 billion People will live in cities, compared to an estimated 3.5 billion today. World over countries with high GDP growth have large population and high urbanization levels. Economy is emerging but declining cities like Mumbai, Chennai, Delhi, Ahmedabad, Visakhapatnam, Surat, and Varanasi etc. Let's innovate and make in india to revive our cities, he said. Dr. Sharad P. Kale, Associate Director of Bio-science Group in Bhabha Atomic Research Centre, Mumbai was chairman of the session. Registrar Shri J.C.Lilani, I/c Registrar of GTU welcomed the guests. Prof. Shri Rajnikant Patel, advisor, RCSC of GTU presented vote of thanks.

Dr PK Tewari, Professor Homi Bhabha National Institute, Associate Director Chemical Engineering Group, Bhabha Atomic Research Centre claimed that the demand for Water will rise from 800 billion cubic meter (bcm) at present to 1500 bcm by 2050. So we will need desalination Technologies like Multi-Stage Flash (MSF); Reverse Osmosis (RO); Other technologies such as Low Temperature Evaporation (LTE) etc. India has largest nuclear desalination plant in the world. Several parts in our country are affected by fluoride, arsenic, iron, excess salinity, microbial and other contaminants in water. Under National Mission for Clean Ganga, Department is currently involved in 'Water Quality Assessment' along with other national laboratories. Membrane based water/ effluent treatment systems have potential to play a vital role in Ganga cleaning. Department is providing technical support and guidance to clean and develop the Holy Shiv Ganga Pond at Deoghar (Jharkhand).

Shri S Mukherjee, Head - FCIPT Division of Institute for Plasma Research, Gandhinagar said that Plasma is the state of matter obtained by breaking down atoms into ions and electrons by the process of ionization. Plasma systems commissioned in 11 places in the country: (1) Goa Medical College, Panjim, (2) Andaman Municipality, Port Blair, (3) Matam Municipality, Gangtok, (4) Dharamshala Municipality, Kangra, (5) Gandhi Medical College, Hyderabad, (6) GCRI, Ahmedabad, (7) Govt Medical College, Agartala, (8) Doon Hospital, Deharadun, (9) Srichitra Institute, Trivandrum, (10) Govt. Hospital, Srinagar, J&K and (11) Govt Hospital, Gurgaon.

Shri Lalit Varshney of Bhabha Atomic Research centre, Mumbai said that Indian cities and towns together are generating an estimated sewage load of 38,254 million liters per day (MLD). Out of which 11,787 MLD is treated with a capacity gap of 26467 MLD. Growing urbanization, industrialization and large population has compounded this problem in our country. Radiation technology provides an effective and economic method to meet the standards, he added. A technical session was also held in which Dr. N.S.Varadani, Principal Research Scientist, GERMI, Dr. B.Nagendra Kumar from Chennai, Shri Maulik Joshi, GM SSBI Infrastructure, Ahmedabad, Dr. U.K.Sinha, Scientific Officer, BARC, Dr. P.K.Tewari, Head, Desalination, BARC and Students, Faculties and Researchers also participated in the event.

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