



Late Shri Vishnu Waman Thakur Charitable Trust's

**VIVA Institute of Technology**

At: Shirgaon, Virar(E), Tal: Vasai, Dist: Thane-401305, Maharashtra.



## **REPORT**

**IETE Approved One Day Industrial Visit**

to

# **“Bhabha Atomic Research Centre” (BARC) Trombay**

**23<sup>rd</sup> September, 2016**

Organized by:

**Prof. Meena Perla**

**IETE Co-ordinator**

**Department of Electronics & Telecommunication Engineering**

**VIVA Institute of Technology**

**Shirgaon, Virar (E)**

**Date: 23<sup>rd</sup> September, 2016**

**Venue: BARC( Bhabha Atomic Research Center)**

Electronics & Telecommunication Engineering Department of VIVA Institute of Technology organized a one day Industrial Visit to “BHABHA ATOMIC RESEARCH CENTRE-TROMBAY” with prior permission under the banner of IETE on 23<sup>rd</sup> September, 2016

Total 50 Students of Third year Engineering and 5 faculty members visited the plant.

About BARC

- The Bhabha Atomic Research Centre (BARC) (Hindi: भाभा परमाणु अनुसन्धान केंद्र Bhābhā Paramānu Anusandhān Kendra) is India's premier nuclear research facility based in Trombay, Mumbai, Maharashtra. BARC is a multi-disciplinary research centre with extensive infrastructure for advanced research and development covering the entire spectrum of nuclear science, engineering and related areas.
- BARC's core mandate is to sustain peaceful applications of nuclear energy, primarily for power generation. It manages all facets of nuclear power generation, from theoretical design of reactors, computerised modelling and simulation, risk analysis, development and testing of new reactor fuel materials, etc. It also conducts research in spent fuel processing, and safe disposal of nuclear waste. Its other research focus areas are applications for isotopes in industries, medicine, agriculture, etc. BARC operates a number of research reactors across the country.

Following Plants were visited at BARC:

### 1. Dhruva Research Reactor (Reactor Dhruv BARC, Trombay)



The Dhruva reactor is India's largest nuclear research reactor. Located in the Mumbai (Bombay) suburb of Trombay at the Bhabha Atomic Research Centre (BARC), it is India's primary generator of weapons-grade plutonium-bearing spent fuel for its nuclear weapons program. Originally named the R-5, this pool-type reactor first went critical on 8 August 1985 after 10 years of construction.

## 2. Super computer lab



BARC has started development of supercomputers under the ANUPAM project in 1991 and till date, has developed more than 20 different computer systems. All ANUPAM systems have employed parallel processing as the underlying philosophy and MIMD (Multiple Instruction Multiple Data) as the core architecture. BARC, being a multidisciplinary research organization, has a large pool of scientists and engineers, working in various aspects of nuclear science and technology and thus are involved in doing diverse nature of computations.

## 3. Remote Handling and Robotics

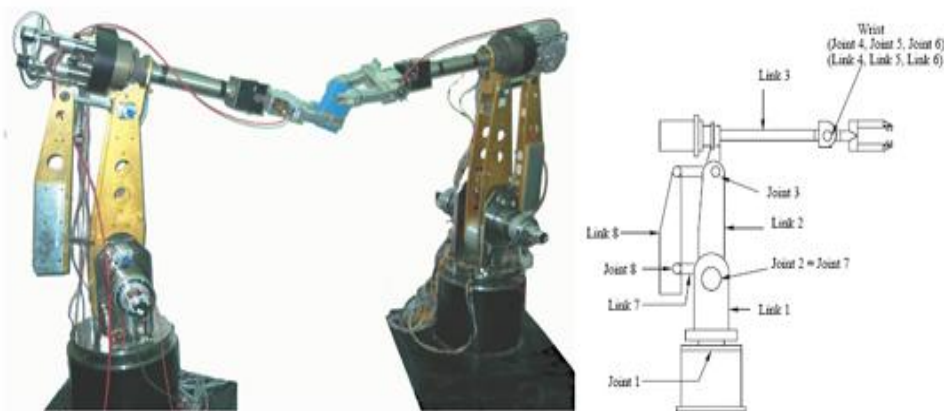


Figure 1: A dual-arm cooperative robot and link-configuration of each robot

The Division of Remote Handling & Robotics (DRHR) is engaged in developmental activities in a range of areas relating to reactivity control and in-service inspection of nuclear reactors at one end, to masterslave manipulators, industrial robots and mobile robots on the other. While master slave manipulators form the core of remote handling operations all over DAE, and are closely related to Robotics

#### 4. Biotech and Agriculture



R&D activities in Life Science at BARC span a wide range of thrust areas contemporary biological research. Radioisotopes and radiation technologies prove as useful tools in biological research.

The students of third year EXTC have enjoyed the technical endeavor the organization a lot. The company persons also appreciated our students after the question answer sessions. Visit seems to be very informative and gives good learning experience. It was the unique example of 'EDUTAINMENT' i.e. Education & Entertainment.

Members of BARC who guided us through the visit

Mr. Vishal Dikale Sir  
Mr. Shashidhar Sir  
Mrs. Prabha Pednekar  
Mr. B B Sinha Sir