

REQUIREMENT OF STUDENT INTERNS SUMMER 2018

Date of Announcement: 1 May 2018

Last date for submission of filled-in applications: 10 May 2018

S. No	Topic Code	Topic	Required Qualifications	Maximum Duration	Number of Interns
1	RCH01	Impact Assessment of Mission REACH – A mission under Umbrella Scheme on Technology Vision 2020	M.BA or B.E./B.Tech / M.Tech will be preferred. Knowledge of Scientific data analysis is desirable	8-12 months	1
2	FPT03	Study on traditional foods	Pursuing M.Tech in Dairy Technology/ Food Technology/ Biotechnology etc	12 months	1
3	TFR13	Three-Dimensional Transportation: Present Trends, Future Scenario and Impacts	B.Tech/M.Tech in Mechanical, Automobile, Transportation or Aeronautical/Aerospace Engg	12 months	1

1. Impact Assessment of Mission REACH – A mission under Umbrella Scheme on Technology Vision 2020

TIFAC had carried out a forecast exercise on “Technology Vision 2020 for India” covering 17 vital sectors of the economy that includes – Agro-Food Processing, Advanced Sensors, Civil Aviation, Electric Power, Waterways, Road Transportation, Telecommunication, Food & Agriculture, Engineering Industries, Health Care, Life Sciences & Biotechnology, Materials & Processing, Services, Strategic Industries, Electronics & Communication, Chemical Processes. These reports broadly delineated the roadmap on Science & Technology interventions required in short, medium and long term periods to make India a ‘Developed Country’ by the year 2020’. As part of this, the following six areas were identified for implementation under The Umbrella Scheme on ‘Technology Vision 2020 Projects in Mission mode’:

- Agriculture Agro Food Processing
- Road Construction & Transportation Equipment
- Upgradation of Textile Machinery/Industry
- Health Care Services and Herbal/Natural Products
- Upgradation of Science & Engineering Colleges (Mission REACH)
- Targeted programmes in other important areas such as Electric Power, Hydrogen Technology Programme, Uttaranchal, Systems of Rural Connectivity and Integrated Science & Technology Programmes for Rural Development.

Since then, TIFAC has taken up several projects in above six areas. Out of these, a major initiative for Upgradation of Science, Engineering, Technical and Professional Institutions Relevant to the Industries called Mission REACH (REACH-Relevance & Excellence Achieving New Heights in Educational Institutions) was taken up to establish COREs (Centres Of Relevance & Excellence) in diverse disciplines in different educational institutions throughout the country. So far, 40 COREs & 2 projects were initiated out of which 36 COREs & 2 other projects have been established.

In view of above, it is pertinent to prepare an Impact/benefit Analysis of Mission REACH Report which has been one of the major activities of Technology Vision 2020 and is very much required in order to conclude the Mission in the near future.

The scope of the work includes identifying drivers for industry, education Institutions /University, identification of impact parameters for Mission REACH and also for individual TIFAC-CORE and carrying out impact analysis of Mission REACH. A few parameters were identified for preliminary assessment which needs to be fine-tuned further to carry out final impact assessment.

2. Study on traditional foods

Understanding the science and developing process technologies to make large scale production possible. The specific traditional foods to be focused are jilebi, gajak, idli, gaja (jibe gaja), dhokla, sohan papri, seasoned roasted dhal mix. etc. having increased shelf life.

The study would identify the existing traditional technologies being practiced for manufacturing the aforesaid traditional foods vis-à-vis the scientific validation of the technologies. The study would also identify the latest existing technologies being practiced for commercial manufacturing of the aforesaid products. The scope of implementation of automation for processing of above products would also be examined.

3. Three- Dimensional Transportation: Present Trends, Future Scenarios and Impacts

Due to rapid urbanization and emergence of megacities, urban transportation infrastructures are stressed leading to traffic congestion, high fuel consumption as well as increasing number of accidents and fatalities. Present transport sector globally is largely two-dimensional, and may not be able to cope up with the growth of cities, which is three-dimensional in nature. This has led to efforts towards three-dimensional transportation systems.

Many options for three-dimensional transportation are emerging, such as passenger drones, flying cars, cars moving through multi-layer underground tunnels etc. Innovative concepts of combining multiple modes are also being pursued (e.g. *Pop-up*, which is a concept that combines the concepts of passenger cars and drones).

However, some of these futuristic options may be associated with safety and security concerns - both for them, as well as caused by them. Some of these options envisage utilization of artificial intelligence and even augmented reality. Technological challenges, potential for cost-effectiveness, and their socio-economic impacts are also important considerations.

The proposed study will analyse future scenarios of three-dimensional transport and their impacts. It will involve comparing various options of 3D mobility in terms of feasibility, safety, security etc. A cross impact analysis to evaluate possible future scenarios for these future transportation technologies will be taken up.
