



# GUJARAT TECHNOLOGICAL UNIVERSITY

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ગુજરાત ટેકનોલોજીકલ યુનિવર્સિટી

(ગુજરાત અધિનિયમ ક્રમાંક : ૨૦/૨૦૦૭ દ્વારા સ્થાપિત)

## Seminar on Mars Orbiter Mission

Organized by

Postgraduate Research Centre for Governance Systems, GTU

In association with

Space Applications Centre (SAC/ISRO), Ahmedabad



### Session 1

2<sup>nd</sup> Lecture Series of CEOs in the Classroom Program on “Mars Orbiter Mission (MOM) - Spacecraft & Mission” and a Workshop on “Research Opportunities at SAC (ISRO) Ahmedabad” is being organized by GTU (Centre for Governance Systems) in association with Space Applications Centre (SAC/ISRO), Ahmedabad. In the pre-lunch About Centre for Governance Systems (CGS) About Space Applications Centre (SAC)& About Mars Orbiter Mission (MOM) were discussed.

### Dated 15<sup>th</sup> November 2014 at Venue B0- Conference Hall

- Expert lecture on “Mars Orbiter Mission (MOM) - Spacecraft & Mission” by Director, SAC. Researchers, Professors, Graduate, Post Graduate Students and Doctoral Students engaged in the field of Engineering and Management were encouraged to attend this seminar.
- In Inaugural Session Welcome Address was conveyed by Mr. J.C. Lilani, I/C Registrar. He also mentioned about GTU and how Vice Chancellor Dr. Akshai Aggarwal has strong affection towards students.
- Addressed by the Vice Chancellor of GTU, Dr. Akshai Aggarwal, with the word that we have to learn from the great scientist who had served nation and each one of us has to try our best in classroom. Through Mars Orbiter Mission many Engineers from various Countries have achieved Innovation guidelines from SAC – ISRO.

- Dignitaries Chief Guest on Mars Orbiter Mission (MOM) - Spacecraft & Mission Mr. A.S. Kiran Kumar, Director, Space Applications Centre (ISRO), Ahmedabad.
- Introduction of Chief Guest was given by Dr. P.K. Srivastava, Research Advisor, GTU
- Technical presentation on Mars Orbit Mission was delivered by Shri Kiran Kumar, Director, ISRO.
- Vote of Thanks was given by Dr. G.P. Vadodaria, Principal, L.D. College of Engineering, Ahmedabad.



## Session 2

- In the Post lunch session, presentations by SAC team was followed by presentations and discussions on various research topics from different registered faculties of GTU affiliated Colleges in their respective research areas.
- The main motto behind this workshop is to explore research opportunities for GTU faculties at SAC/ISRO, Ahmedabad and also help solicit research grants for the various research projects being undertaken at GTU. Selected participants were given 15-minutes time for presenting their

ideas on new applications and innovative techniques in the area of Space and Engineering research. These research proposals may be considered for research support and grant from ISRO, if these qualify as per ISRO's guidelines for sponsored research.

- Welcome address was given by Dr. G.P. Vadodaria, Principal, L.D. College of Engineering, Ahmedabad.
- Overview of SAC activities was given by Mr. N M Desai, SAC
- Information on Research Areas at SAC was given by Dr. Ajai & Mr. Atul P. Shukla— SAC.
- Brief on Respond Programme was given by Mr. Vikas Patel, SAC
- Research Project Presentations were given Mr. Virendra Patel, Mr. Haresh Suthar / Mr. Niraj Tevar Mr. Bhadrash Gohil / Mr. Darshan Patel from GTU
- Members of Panel Discussion were Dr. P.K. Srivastava, Dr. Ajai, Mr. Mihir Shah & Mr. Atul Shukla, Mr. Sanjay Makwana.

It was in-depth technical seminar by Shri Kiran Kumar, Director, ISRO, The faculties and students were eager to know more about SAC – ISRO opportunities. Members' presentation and information shared by them are as follows:

1. Mr. N. M. Desai—Overview of SAC Activities

- ISRO, SAC, SatCom (Satellite communication), SatNAV (Satellite Navigation). He said about Prime Objectives of ISRO and ISRO in academics, Training and Education through UN-CSSTEAP. – Short Term and 9 Months



2. Mr. Ajai, Professor, SAC, ISRO

- He had discussed various projects and research areas, Like Himalayan Snow & Glaciers, Coastal Zone and Ocean Biology, Environmental Applications, Agriculture, Atmospheric and Oceanic science, Remote Sensing - Image Processing. He concluded the session by giving brief on success projects such as Chandrayan, Real time Cyclone track prediction i.e. Cyclone Mala, Cyclone Mukda, Gonu.



3. Mr. Atul Shukla, Group head, DCTG/SNAA, Space Applications Centre

- He shared information about research area in the domain of Satellite Communication Applications and Navigation Application.

4. Mr. Vikas Patel, Respond at SAC.

- The session with the information of Research scope at SAC, In-house Research (TDP/R&D), Sponsored Research (Respond/Space Technology Cells in IIT), Collaborative Research (RS Applications Projects). Process for new proposal ongoing subject and evaluation procedure have also been discussed in detail.

- Workshop was concluded with Questionnaire round and Panel discussion with the Initiative of Dr. P. K. Shrivastav discussed Main points are mentioned below:

### Concluding Remarks of the Seminar / Workshop:

1. Presentation of MOM was highly appreciated by audience. Number of technical questions regarding the Blind operation and the reliability of systems were raised and answered by Director, SAC.
2. The research options at SAC were discussed during the presentation of SAC scientists. Few topics suggested for research are as follows: Data processing for remote sensing data, Sensors for collecting environmental data, Network of energy efficient communication nodes, Micro-Electronics, Satellite based Navigation and Receivers. The researchers may also submit any proposals related to engineering, space science, wireless communications, satellite data analytics, and remote sensing.
  - Large number of proposals for possibilities taking up with ISRO were submitted by staff and Ph.D students of GTU affiliated Colleges.
  - “Implementation of GPS L5 Signal using Model Based Design Tool” presented By Mr. Virendra Patel, Assistant Professor, (Electronics Department), Bhagwan Mahavir College Engineering and Technology, Surat.
  - “Multi-Object Optimization of Gaussian Profile Corrugated Horn Antenna based on Swarm & Evolutionary Optimization” Mr. Niraj P. Tevar, B.E- E&C (GU-Charotar Institute of Technology, Changa) M.E.-Communication System Engineering (GTU-L.D.College of Engineering) Ph.D – E&C (Pursuing – C.U.Shah University, Wadhvan)
  - Big Data Analytics from GTU PG school, Asst. Prof. Mr. Bhadreshsinh Gohil, Asst. Prof. Mr. Darshan Patel & Students of GTU PG School.
3. Based on the intensity of interest from all the professors in research and considering their overall academic background in the Engineering at GTU affiliated Engineering Colleges can get details from ISRO. It is suggested that small number of research themes complementary to the research areas at SAC being identified and persuade through inter colligates teams. Each of this team may be attached to one Center of Excellence at GTU.
4. Panel had encouraged students to take initiatives for giving the proposals and to form a committee at GTU level for scrutinizing and helping the research students.
5. One can apply for research proposal anytime during the year; if the proposal would not get through the selection they can again resubmitted after necessary technical modification as suggested by SAC-ISRO.
6. Reference site for Research Proposal in SAC-ISRO: [www.sac.gov.in/respond](http://www.sac.gov.in/respond)
7. It is suggested that, the proposal for complementary themes could be identified through organizing one more workshop at GTU in future with presentation by all researchers and professors who have shown interest during MOM’s Workshops.

8. Each of the team as well as individual researchers shall be encouraged to prepare proposals for taking up with Space Application Center (ISRO) for funding under Respond Program and other platforms.
9. Coordinating team for selection of proposals and mentoring the thematic research, maybe formed by the Honorable Vice Chancellor of GTU for taking the matter further.

The Workshop was ended with Vote of Thanks by Ms. Darshana Chauhan, OSD, GTU.

