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**Research Positions at Ahmedabad University
RF/Microwave/Antenna & relevant domains
by Professor Sanket Patel**

School of Engineering and Applied Science, Ahmedabad University

Applications are invited from the suitable candidates to pursue research at the School of Engineering and Applied Science, Ahmedabad University.

This call is open for the candidates who are willing to pursue PhD research, MTech/MSc Dissertation Thesis, BTech final year project, and Summer Internships with the varied degree of rigour.

Passed out MTech/ME candidates with or without prior experience can also apply. The domain of interest should be RF/ Microwave/ Antenna and similar.

Reporting: Professor Sanket Patel (sanket.patel@ahduni.edu.in)

Desired Qualifications

Have worked/working in the RF/Microwave/Antenna domain.

Knowledge of Electromagnetic Simulator such as Ansys HFSS/ CST Studio Suite/ Keysight ADS or similar.

Preference may be given to the candidate having appropriate knowledge of experimentation, scientific writing.

Research Projects in the following and similar fields:

- RF and microwave components – Microwave Integrated Circuits like; Low noise amplifiers, Power amplifiers, Active and passive mixers, Voltage controlled oscillators, Tunable filters, Attenuators, Isolators, Couplers, Phase shifters, and more at sub-systems and systems level.
- Reconfigurable antennas, planar low profile antennas, adaptive antenna arrays, novel feed networks
- Metamaterial based components
- Frequency selective surfaces, absorbers
- Microwave material characterization
- Machine learning based design of pattern reconfigurable antennas and other RF & microwave components
- Space deployable antennas

Short brief on projects:

All of the below listed projects have significant potential for the patents and publications.

- Project 1: Design and Development of RF and microwave components:
This project includes the design, analysis, fabrication and measurement of various Microwave Integrated Circuits (ICs) such as; Low noise amplifiers, Power amplifiers, Active and passive mixers, Voltage controlled oscillators, Tunable filters, Attenuators, Isolators, Couplers, Phase shifters, and more at sub-systems and systems level for various applications including Space and Defence. Interested students will be motivated to work on any of the



ICs from the mentioned list under supervision. Available Research Facility: 2-port VNA by Keysight (model E5063A) which operates in the frequency range from 100KHz to 14GHz, spectrum analyzers, signal generators, high sampling rate digital oscilloscopes, data acquisition systems, full-fledged fabrication facility, rapid prototyping and more. Furthermore, Ahmedabad University has an MOU with SAC, ISRO which leads to impactful research in the field of RF, Microwave and Antennas.

- **Project 2: Planar antenna array:**
This project includes the design, analysis, fabrication and measurement of antenna arrays. This includes proposing novel topologies in designing planar low-profile antennas, antenna arrays, reconfigurable antennas, adaptive antenna arrays, and novel feed networks. Interested students will be motivated to work on any topic from the mentioned list under supervision. Available Research Facility: 2-port VNA by Keysight (model E5063A) which operates in the frequency range from 100KHz to 14GHz, spectrum analyzers, signal generators, high sampling rate digital oscilloscopes, data acquisition systems, full-fledged fabrication facility, rapid prototyping and more. Furthermore, Ahmedabad University has an MOU with SAC, ISRO which leads to impactful research in the field of RF, Microwave and Antennas.
- **Project 3: Metamaterial based components:**
This project includes the design, analysis, fabrication and measurement of metamaterial-based components; including microwave ICs, antennas, frequency-selective surfaces, microwave absorbers, and more. Interested students will be motivated to work on any topic from the mentioned list under supervision. Available Research Facility: 2-port VNA by Keysight (model E5063A) which operates in the frequency range from 100KHz to 14GHz, spectrum analyzers, signal generators, high sampling rate digital oscilloscopes, data acquisition systems, full-fledged fabrication facility, rapid prototyping and more. Furthermore, Ahmedabad University has an MOU with SAC, ISRO which leads to impactful research in the field of RF, Microwave and Antennas.
- **Project 4: Microwave material characterization:**
This project includes the development of a testbed setup and further analysis and measurements to characterize the materials under test. Various properties like absorbance, shielding, transmission, reflection, isolation, etc can be measured. Using the same, the constituent parameters and relevant properties of the material under test can be determined. The test bed setup can made to perform the free space measurements or in-waveguide measurements for microwave material characterization. Available Research Facility: 2-port VNA by Keysight (model E5063A) which operates in the frequency range from 100KHz to 14GHz, spectrum analyzers, signal generators, high sampling rate digital oscilloscopes, data acquisition systems, full-fledged fabrication facility, rapid prototyping and more. Furthermore, Ahmedabad University has an MOU with SAC, ISRO which leads to impactful research in the field of RF, Microwave and Antennas.



- **Project 5: Machine learning-based design of pattern reconfigurable antennas and other RF & microwave components:**
This project includes the design, analysis, fabrication and measurement of pattern reconfigurable antennas and other RF & microwave components; including microwave ICs, frequency-selective surfaces, microwave absorbers, filters, and more. Interested students will be motivated to work on any topic from the mentioned list under supervision. Available Research Facility: 2-port VNA by Keysight (model E5063A) which operates in the frequency range from 100KHz to 14GHz, spectrum analyzers, signal generators, high sampling rate digital oscilloscopes, data acquisition systems, full-fledged fabrication facility, rapid prototyping and more. Furthermore, Ahmedabad University has an MOU with SAC, ISRO which leads to impactful research in the field of RF, Microwave and Antennas.
- **Project 6: Deployable antenna**
This project includes the design, analysis, fabrication and measurement of deployable antennas. Available Research Facility: 2-port VNA by Keysight (model E5063A) which operates in the frequency range from 100KHz to 14GHz, spectrum analyzers, signal generators, high sampling rate digital oscilloscopes, data acquisition systems, full-fledged fabrication facility, rapid prototyping and more. Furthermore, Ahmedabad University has an MOU with SAC, ISRO which leads to impactful research in the field of RF, Microwave and Antennas.

Available Research Facility

VNA, spectrum analyzers, signal generators, high sampling rate digital oscilloscopes, data acquisition systems, full-fledged fabrication facility, rapid prototyping and more.

Summer Interns

The selected students for summer internships will be given free accommodation at the University's Student Residences and will be provided Sleeper Class return train fare from their city to Ahmedabad. Accommodation will be available between May 6 and June 30, 2025. Students will have to pay for their food expenses. No stipend will be provided. *The student will get a certificate of internship after successful completion of the programme.*

You are requested to refer to the Ahmedabad University's Summer Internship Programme application portal for guidelines and actual dates for the availability of accommodation.

Financial Support (PhD candidates)

Ahmedabad University awards full tuition fee waiver and financial support to full-time doctoral students. The financial support could be as either University Assistantship or University Fellowship. We offer University Assistantships at INR 40,000 per month plus tuition fee waiver, and University Fellowships at INR 50,000 per month plus tuition fee waiver.

Post-PhD Opportunities

Building an entrepreneurship venture, Post-doctoral research, Joining a company of repute as a lead researcher, Academics in a leading university



How to Apply:

Interested candidates can send their CV along with a cover letter to sanket.patel@ahduni.edu.in

For Summer Internship Programme, you should apply at the university portal.

About us

Virtual tour: <https://ahduni.edu.in/virtual-tour/>

Board of Governors: https://ahduni.edu.in/people/#class_2

Ahmedabad University was established by the Ahmedabad Education Society to offer a world-class academic experience in one of India's most vibrant cities. Ahmedabad University is a private, non-profit University that offers students a liberal education with a focus on research-driven and project-based learning. The School of Engineering and Applied Science of Ahmedabad University is dedicated to providing a world-class research environment. At the school, both faculty and students are expected to pursue research and development in the social and industrial spheres, equipping themselves to solve the most complex challenges of the societies and communities.

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