



# AMITY UNIVERSITY MAHARASHTRA

Established vide Maharashtra Act No.13 of 2014, of Government of Maharashtra, and recognized under Section 2 (f) of UGC Act 1956.

## Measures of Success of Interdisciplinary Research

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## 1. Collaboration with Indian Space Research Organization (ISRO)

The interdisciplinary research at the Amity University Maharashtra is conducted in two ways. The formal research projects submitted to the funding agencies, and the sanctioned amount are used for conducting the research. Another interdisciplinary research conducted was the student projects closely guided by the supervisor faculty members. The faculty member at the university continuously engaged to solve the identified problem statements in the science and technology disciplines. The extra mural funding projects are conducted by the Faculty Principal Investigator and the concerned research fellows appointed under the said project and administered by the university authorities. The success of these projects has the benchmarks of the funding body, and the internal quality and ethics standards of the university. The outcomes of these research projects are the products, and processes formulated for further IPR and knowledge transfer. The success of these projects is the establishment of the equipment in the university premises and their practical implementation to generate the revenue out of it. The outcome of these projects is also leading to the social contribution and betterment of the community.

A success story of the interdisciplinary research is the Amity University Maharashtra' Collaboration with Indian Space Research Organization (ISRO). Through this research the callus of the Spinach is sent for the observation of the growth in space. University's Center for Astrobiology emphasized the importance of the experiment for understanding plant growth under microgravity conditions. The spinach callus tissue, rather than traditional seeds, was chosen due to its ability to track changes through colour monitoring via in-built cameras. The advantage of using the callus of 'Spinacia Oleracea'—commonly known as spinach—is that it is green in colour, allowing any discoloration during growth and death to be easily captured. Additionally, the module at the University campus showed similar growth results, reflecting promising progress.





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## News Articles as Success of the interdisciplinary Research

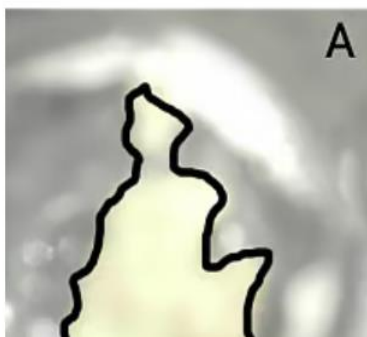
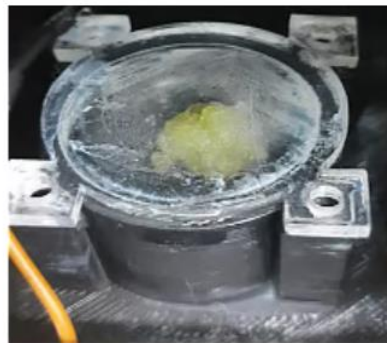
<https://www.deccanherald.com/science/space/amity-universitys-spinach-callus-tissue-grows-in-space-3352762>

<https://timesofindia.indiatimes.com/city/mumbai/in-a-1st-indian-univ-grows-spinach-tissue-in-space/articleshow/117127062.cms>

<https://www.freepressjournal.in/mumbai/mumbai-amity-universitys-spinach-callus-sent-via-isros-spadex-mission-shows-growth-in-space-marking-key-milestone-for-astrobiology-research>

<https://www.indiatoday.in/science/story/isro-pslv-c60-spadex-mission-amity-university-is-sending-spinach-into-space-2654540-2024-12-24>

<https://www.msn.com/en-in/science/biology/mumbai-amity-university-s-spinach-callus-sent-via-isro-s-spadex-mission-shows-growth-in-space-marking-key-milestone-for-astrobiology-research/ar-BB1rhAU8?ocid=BingNewsVerp>



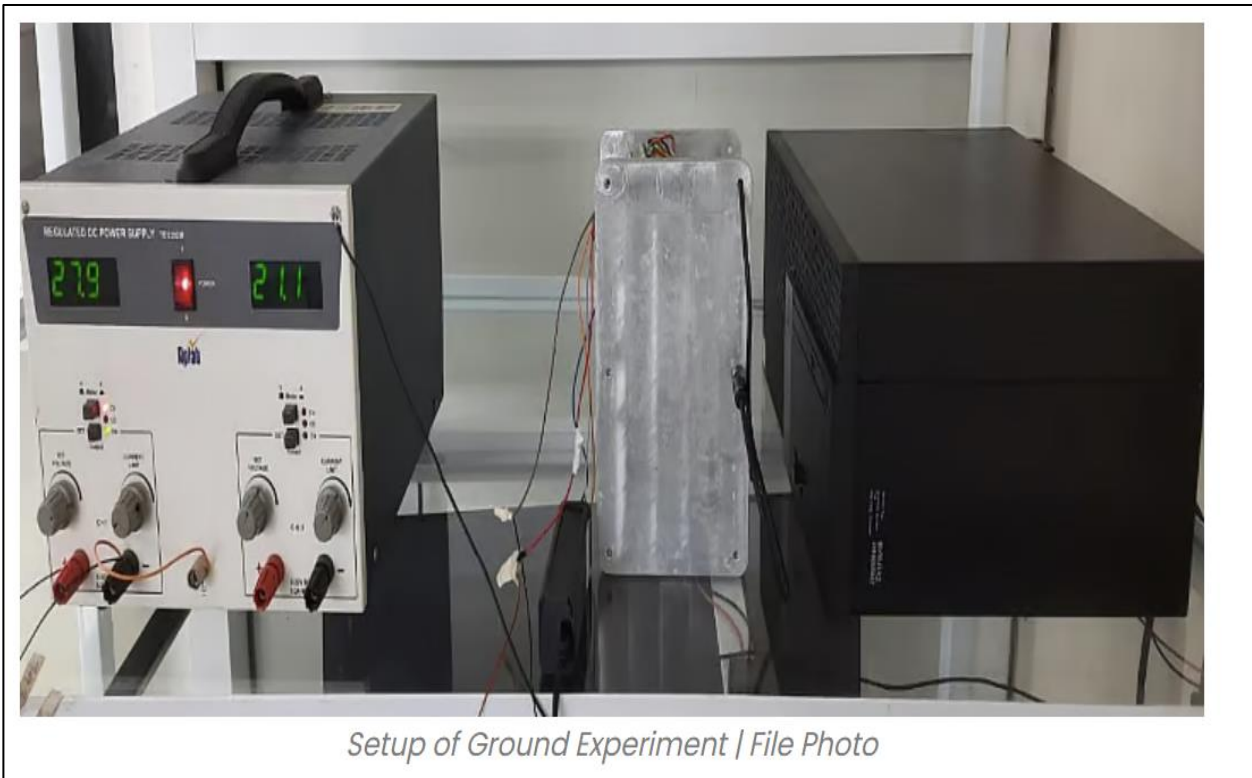
*Callus Growth In Space | File Photo*





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Amity University Maharashtra has the system to publish the quality research papers in reputed indexing agencies such as Scopus, and Web of Science for the science and engineering disciplines. It is highly recommended to publish the higher impact factor original research papers in the reputed and peer reviewed journals. The inter-disciplinary research projects including science, life science, engineering, Technology and Physical Science are highly expected from the faculty members, post-doctoral fellows, and research fellows. The interdisciplinary research also includes the students' involvement in providing sustainable solutions for the student and staff at the university.

## 2. Provision of Seed Funding for the Handover Ordering System

The application of the Inter disciplinary Science research is also broadened to have utilities in disciplines such as social sciences and related streams. During recent exhibitions on product prototypes organized by the university administration and identified the best





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projects of application of science and engineering, and done the provision of Seed Funding for implementation of the pilot projects for the students. Handover is a fully virtual coffee machine interface that enables users to place coffee orders seamlessly. This virtual interface emulates the experience of interacting with a physical touchscreen, without touching it by using intuitive hand gestures. It is more cost efficient than having a touchscreen or a physical person. Ordering and payment are made from a single point and upon confirmation, the system generates and prints a receipt, providing users with an immediate record of their order details. Handover interface offers a convenient and efficient way for users to place orders and receive order confirmations, enhancing the food ordering experience. The project prioritizes hygiene, and the gesture interface minimizes physical contact, enhancing safety and user comfort. Our product is more affordable by only requiring a non-touch display panel and webcam which are half the price of a similar touch panel.

### 3. Provision of Seed Funding for the Classroom Electricity Automation System

A collaboration project of the mechatronics branch and Computer Science the provision of seed funding for the pilot projects. This has a sustainable solution for a reduction in electricity consumption. The project has the outcome in the classroom equipment controlling and its automation so that, to switch off fan, tube, and air conditioning system, when there is no occupancy. Microwave sensor and Disc Microwave Light Motion Sensor are types of motion sensing device that helps to capture movement made in a certain area within its detection range. NANO Sensor has Breathing Detecting Technology and is an active motion sensor detector. Achieves accurate identification of human occupancy Irrespective of any mode of activity such as meeting, reading, writing, rest or static meditation. Occupancy Sensor helps to keep check of the count of human presence and operates appliances accordingly. Presence monitoring helps to monitor your electricity usage and can be integrated with your BMS system on request. It can help to

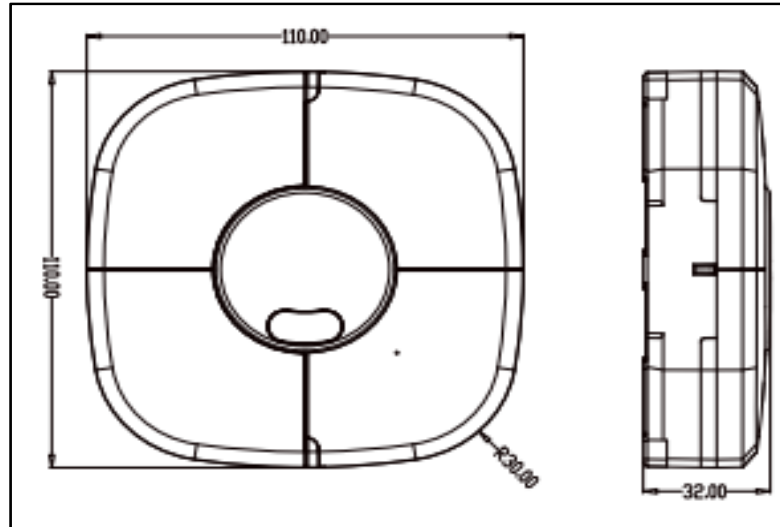




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communicate between existing appliances easily. Sensors along with some relays and modules can help build a logic, such that if no occupancy, the room should switch off all its appliances.



**4. Other measures of Success used at Amity University Maharashtra**  
Universities have measures on the various established mechanisms that are accepted worldwide such as H-index calculations by Scopus, Web of Science, and Google Scholar. The better impact has been observed at the implementation stages of the technology hand- over and the start-ups created based on the products developed through this interdisciplinary research. The University has shown significant footprints in Intellectual





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Property Rights. The Patents, Designs and Copyrights are filed by the faculty members of the Amity University Maharashtra. It is the planning of the university to encourage product design for successful business. Success is also measured in terms of the Social Impact created on the lives of the citizens, the poor sections, and the public. following are the mechanisms for the measurement of the success of interdisciplinary research.

- Measurement of the methodology of research funds utilized for the betterment of society.
- The research success for improving the new knowledge production, that can be a part of the education system and curriculum.
- Conversion of the research outcomes into the well-established research methodologies for the curriculum design and the enrichment outcomes.
- Outcomes in terms of the high impact factor research paper publications, blogs and social media postings to reach out to the target group.
- Continuation of similar research after the tenure of the research project and thinking out-of- the-box concepts as a by-product of the research outcomes.
- Improvement in the h-index, i-10 of the Amity University Maharashtra and the involvement of the faculty individuals and the students in the research work.
- Product development for the further wealth generation for the nation building.
- Creating ethical system of the research methods and generating the research outcomes of the research.
- Filing of the Intellectual Property Rights in terms of Patents, Design, and Copyrights. Further extending it to the business and start-up registrations to convert it into tangible outcomes.
- Successful establishment of the business to the profit generation and providing significant amounts of funds for social benefits.
- Raising the funds for interesting product development, and novel ideas generated during the research work.





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- Inclusion of the results or the newly applied research methodology in the curriculum of the UG and PG programs, and PhD Programs.
- Use of the research in the design of the new policy documents.
- The appearance of articles of the outcomes of the projects in the newspaper and popular online platforms.
- Portraying the tangible outcomes of the research for all stakeholders of the university.

