

# RESEARCH HORIZONS

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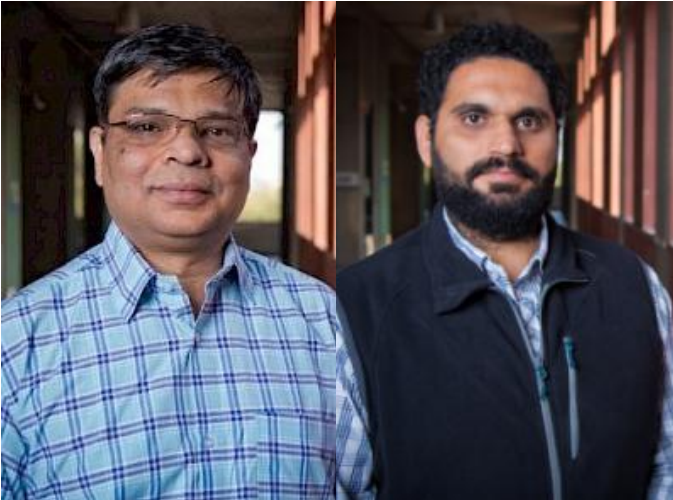


**Ahmedabad  
University**

# Ahmedabad University declared a Centre of Excellence

The Government of Gujarat has formally declared Ahmedabad University as a Centre of Excellence. The announcement was made at a ceremony at the International Conference of Academic Institutions leading upto Vibrant Gujarat. Ahmedabad is one amongst the seven institutions awarded this rare recognition. This is a privilege which will open several opportunities to do deeper work for the benefit of larger society and partner with organisations globally.





## In conversation with Mehul Raval and Mazad Zaveri

***Mehul Raval is Professor and Associate Dean for Experiential Learning at the School of Engineering and Applied Science, Ahmedabad University. His research interests include Computer vision and Engineering education. Mazad Zaveri is an Associate Professor at the School of Engineering and Applied Science, Ahmedabad University, with research interests in Digital CMOS VLSI Circuits and Sub-systems, Verilog HDL based Implementation of Arithmetic-Logic Sub-systems. Professors Raval and Zaveri are additionally the Chair and Co-chair respectively, for the Intelligent Transportation Systems (ITS) Research Cluster at the University. We spoke to them about the ITS Cluster. Excerpts from the conversation.***

### **Please could you tell us about the ITS Research Cluster at Ahmedabad University?**

Finding solutions for complex problems in our world requires multidisciplinary approaches. It would be unlikely for an individual researcher to possess all the skills required to tackle such challenges. However, if a group of researchers with complementary expertise were to work together, based on inputs from society, they might be able to solve larger problems and generate solutions for greater impact. The Research Clusters at Ahmedabad University have been set up as umbrella structures, for such multi-disciplinary work to be seeded and developed over time.

The **(Intelligent Transportation Systems) ITS Research Cluster** is one such initiative at Ahmedabad University and has been set up with the goal of developing innovative solutions for safe, sustainable, and efficient transport systems for local cities, India, and the world. ITS is an important area of research and innovation for India. Over the next decade, we are looking ahead at several key developments such as rolling out electrical vehicles and vastly improved traffic management. Multidisciplinary research on areas such as road network modelling, traffic analysis, vehicle-to-vehicle communication, driver assistance systems and behavioural modelling would contribute towards the overarching research ambitions of the ITS Cluster.

We began the activities of the Cluster with discussions amongst faculty interested in new ideas or with points to contribute towards the ITS initiative. Over time, as a group, we have converged upon a set of ideas for large projects. Each theme would be supported by a core of at least three to four faculty members with the relevant expertise and interest. Within the framework of the ITS Cluster, our faculty can think about the burning questions in the area and consider how they could utilise their individual skills to contribute towards a larger goal. The ITS cluster would provide them with a set of colleagues who can help to materialise new ideas and turn them collectively into solutions benefitting society.

Faculty members of the Cluster are able to interact with each other across Schools and disciplines and become aware of different perspectives. They may become more empathetic to the problems around them. We hope they will appreciate and start learning the language of other disciplines through this experience. This understanding of other disciplines would extend their academic practices and they would become more confident and capable of solving complex problems in the real world. We hope this approach will lead to the development of new avenues for multidisciplinary research via the Cluster.

### **Please could you describe ongoing efforts at the Cluster to engage with industry and local authorities?**

While developing multidisciplinary engineering projects, it is important to consider the features of the technical solution as well as clearly identify the stakeholders who are likely to use it. The project would have broader impact if it addresses a gap in knowledge and innovation. We are therefore keen on reaching out to small and medium scale industries targeting such solutions. We aim to understand their challenges and leverage such insights for research by our faculty keen on carrying out industry-centric research. Additionally, we aim to engage with local authorities such as the Municipal Corporation and Traffic Police Department. By engaging with industry and the local authorities while the research is being developed, we hope to get more clarity on the challenges requiring research-based solutions and additionally, to leverage resources from all available sources.

One of the reasons for creating the Cluster is to expand the industrial interface for the School. With such an industry interface, we can provide ample scope for our faculty to carry out research both on the academic aspects of a problem and at the industry end. Our discussions with potential industry partners are evolving and appropriate resources will need to be brought in to develop new strands of research. We have constituted an Industry Advisory Committee (IAC) that includes experts from organisations such as Tata Consultancy Services, Amazon Web Services and eInfochips.

We leverage our IAC in several ways. We invited IAC members to be on the panel for evaluating outcomes from our student internship projects. We sought their perspective on the kinds of solutions being developed and how these would fit real world requirements. For example, one of the experts is interested in developing the electric vehicle network for traffic. So we engaged with them about how they visualize the growth of this sector and what the challenges might be. These insights have given us a new focus and enrich our research. In this manner, we can ensure that we are directly engaging with stakeholders who might use the solutions generated at Ahmedabad University. While this is still evolving, we have more clarity now on the areas we would like to work on in future.

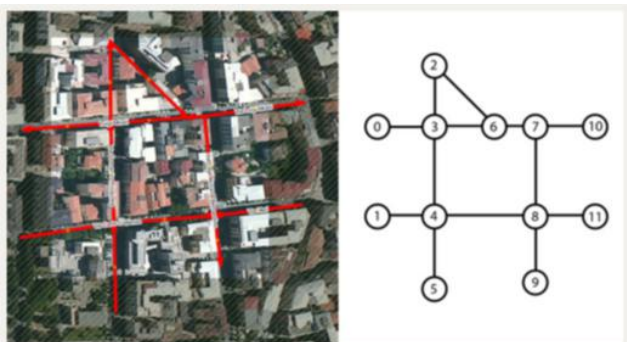
Mazad is currently doing a very interesting experiment on collecting traffic data. Using drones, he seeks to capture aerial images of current traffic at various traffic intersections and road infrastructure. This data is being used to create a repository of information with proper annotations. Putting specific labels on the data makes it particularly useful for further analysis. With his experiments in mind, we are reaching out to the local Traffic Police Department to raise awareness about our research and find potential synergies. Similarly, we are also planning to approach the road safety authority of Gujarat state to get their input and support for our activities relating to this research.

### **How does the ITS Cluster contribute towards the career development of students and other early career researchers? What unique learning opportunities does such an experience offer?**

While setting up the cluster, we realised that it was important to address the way in which engineering education is to be delivered. Experiential learning pedagogy being championed at Ahmedabad University requires our faculty to talk to each other across disciplines and the Cluster provides an opportunity for such interactions. We chose to break down the overall scope of the ITS Cluster into smaller well-defined problem statements, which were offered to students as internship opportunities. Outcomes from these projects have guided our thinking about the broader projects. Equally, our students have benefitted from developments at the Cluster.

The ITS domain provides areas for students from backgrounds such as computer science and mechanical engineering to apply their knowledge and theory towards solving real life problems. With its focus on road safety, the key societal contribution of the ITS Cluster would be with saving lives. When our students can relate to this broader goal and understand that their research contributes towards reducing road accidents and deaths, they get motivated. There is satisfaction in knowing that their classroom learning and technology solutions can help in solving real-life problems.

With the projects, we give our students a longer run on a specific research area. We would like to engage with them from a very early stage and this is also beneficial for their careers. Students are often keen on doing their internships in an industry setting as this could give them a leverage in their careers. By working on focussed research problems at the ITS Cluster over a sustained period of time, they are likely to be much better prepared for careers in industry. The ITS domain is extremely interdisciplinary and their experience is likely to be well-regarded within industry. They are likely to use a whole set of tools, which are acceptable in industry. At the same time, they have access to the expertise of multiple mentors, with diverse perspectives. Tangible outcomes from the student projects can actually span right from the physical layer of the hardware component to the application layer. Our students can choose where they would like to work. Hence these projects are amenable to their interest as well. If a student is keen on developing an application, they would work at a more abstract level. Another student might be keen on developing the communication infrastructure, which needs them to work at a more physical layer. Such flexibility is also available to our students.



***Automatic mapping of road network structure into a graph (structure and connectivity), image courtesy Srikrishnan Divakaran and Amit Nanavati***

**In your view, what are the challenges and possibilities for funding such interdisciplinary research and innovation?**

If one looks at the way the funding agencies are now rolling out funds for the projects, it seems like that pattern itself is gradually changing. There is more funding available for large consortium-type projects, which are multidisciplinary and have a broader impact. It is challenging to build such consortia at short notice. Rather, it takes time for researchers to connect, share ideas, trust each other and plan major collaborations together. At this point, the collaborations are being forged through one-to-one connections between individual faculty. Through the Cluster, we are trying to get the ball rolling for establishing such a connect on a larger scale. Once that happens, perhaps we will be able to leverage on those connections and build further, also with industry and other partners.

Ahmedabad University has been generous to provide seed funding to support the ITS Cluster through central funds. This includes seed grant funding support for the drone for ongoing work within Prof Zaveri’s group. We are also looking for funding support from other avenues. However, before we write any major external proposals, we would definitely hope to have quantifiable results from our initiative, which could become a part of our proposals. There are additionally the intangible benefits of associating with the Traffic Police Department and the Municipal Corporation, particularly if they can vouch for providing a framework for us to deploy and test our solutions. These approaches would strengthen our proposals and hence ensure that we have a higher probability of getting funds from the other agencies.

A tangible benefit for our faculty team members would be that they would become part of the larger, consortium-type proposals being rolled out, rather than only settle for smaller ambitions. Vying for such projects would give them additional leverage and enhance their own skills and confidence for their research.

**Please could you share your views on how this collaborative research can contribute to learning and innovation in and beyond India?**

We would additionally like to establish a longitudinal connection with our peers outside India.

We look forward to leveraging our strengths and working with other institutions with research groups focussed on transportation, such as CEPT, who have a Centre of Excellence in Transportation, IIIT Hyderabad, University of Southampton, UK and University of California, San Diego. Once our core groups in a particular discipline have formed and taken shape, we would hope to venture out for international project collaborations and bidding.

It is very important for us is to contextualise all learnings and problems to the Indian scenario. For example, every high end car in India is fitted with ADAS (Advanced Driver Assistance Systems). This should in principle aid lane driving. However, the majority of the vehicles on Indian roads are two-wheelers. Here there is a huge gap of what is to be learnt and how it could be percolated into the system. Taking a cue from this, any solutions developed here for two-wheelers could in principle be applied in South-Asia where most countries have a similarly high density of two-wheelers. Hence, our learning from the Indian system can very easily be exported to other countries.





## In conversation with Tanvi Rangwala

*Tanvi Rangwala is the CEO of VentureStudio, a start-up incubator established by Ahmedabad University in 2011. We spoke to her about business incubation and innovation-driven entrepreneurship. Excerpts from the conversation.*

**Please could you tell us more about “innovation-driven entrepreneurship”?**

Innovation is a new, unique way of solving a problem. There are innovations both in technology and in business models, which can all impact the world we live in. Innovations in technology are easy to understand and are all around us. Google revolutionised the approach to searching for information on the internet when they created a search algorithm, a technology innovation. Equally, there are also innovations in business models, for which Zomato is the perfect example. Zomato disrupted the restaurant industry through their unique business model, which allows restaurants to gain more customers and increase utilization of their existing capacity. Clearly, for Zomato, the innovation lies in their business model.

Innovation-driven entrepreneurship is different from standard entrepreneurial ventures and entails a high level of uncertainty, from new products, models and markets. Such entrepreneurship requires mentoring, connects and funding for success. At VentureStudio, we aim to provide this comprehensive support to our startups.

**Please could you tell us about your career path and how that led you to your current role?**

I have more than 10 years of experience in supporting startups through events, program, funding and business mentoring. In 2007, after completing my business studies from Emory University in Atlanta USA, I decided to move back home to Ahmedabad. Exposure to subjects of entrepreneurship and Venture Capital during my time at Emory, inspired me to pursue a career in Venture Capital (VC). So, I joined GVFL Ltd in Ahmedabad, one of the oldest VC funds in India. I got the opportunity to work with and learn from Mr. Vishnu Varshney, a pioneer of VC in India. I then decided to join the Centre for Innovation, Incubation and Entrepreneurship (CIIE), at IIM Ahmedabad. This decision stemmed from a desire to support early stage startups. At CIIE, I got the opportunity to work on multiple national level programs for startups. Working with a large number of innovative startups and inspiring entrepreneurs motivated me to try my hand at entrepreneurship. Consequently, I founded a D2C (direct to consumer) startup in the field of personalized photo-based products. However, I missed being an active part of the ecosystem and realized that supporting startups was my true calling. And this brought me here to Ahmedabad University, to VentureStudio. I find my job at VentureStudio truly fulfilling.

Before joining the startup ecosystem, I was a techie and worked for Cisco in Silicon Valley. I have Bachelors and Master's degrees in Computer Science. I enjoy learning about new technology, its applications and impact on the way we live, work and play. I am currently obsessed with Blockchain technologies and spend all my free time learning more about it.

**What would you like to communicate to researchers about innovation?**

- Firstly, researchers should think about the impact that their research and innovation can make outside the laboratory. About how their research could change the lives of people for the better and solve the world's biggest problems.
- We encourage our innovators and researchers to adopt a user-centric approach. Only when they have empathy for the user and work through their specific requirements, can entrepreneurs create an innovation that is meaningful to society.
- Researchers should become aware about commercialization opportunities for their innovation. Commercialization could happen through multiple routes such as licensing, academia industry partnership and/or entrepreneurship.
- It is also extremely important for researcher to consider the economic viability of the technology being developed. In other words, it is imperative for the researcher to develop solutions that are affordable by customers and users. This is the most critical element for laboratory technology to successfully go to market.

**Please could you share some highlights of how innovation-driven entrepreneurship is being supported via Venture Studio?**

VentureStudio provides 360 degree support to innovative startups and we do so in the following ways:

- **Facilities:** VentureStudio offers coworking space, a fabrication shop and a biotechnology lab. Interested startups can easily avail these facilities as and when required. Our staff at all three facilities are keen to help out innovators and startups in every way possible.
- **Grant and equity funding:** Timely and sufficient funding is critical to the success of startups. We help startups set milestones and timelines to utilize these funds in the best possible way. We additionally help startup raise more capital when needed through our trusted group of investor partners to fuel their future growth.
- **Business mentoring and connects:** Business mentoring is an extremely critical aspect of what we do at VentureStudio. The majority of our startups are started by founders with backgrounds in technology but not in business. Starting from helping them refine their business models to defining and making MVP, to achieving product market fit – VentureStudio offers close hand-holding and value-adding throughout their journey. We are fortunate to have a support of both functional and industry experts as our mentors who support our startups.

We strive to conceptualize, design and execute deep-value programs and events for the startup community and ecosystem. Over the years, we have also built a strong expertise and network in the areas of Biotechnology, Life Sciences, Healthcare, Hardware and Deep-tech.



**Please could you share your views on the barriers and enablers for innovation-driven entrepreneurship?**

I would like to talk about enablers first because I am a “glass half-full” kind of a person! The support available to early stage innovative founders in terms of grants, facilities and mentoring is substantial. There are many schemes available from the Government of India that support entrepreneurs. VentureStudio can provide startups support through NIDHI Prayas, NIDHI Seed Support Scheme, Biotechnology Ignition Grant, Student Startup & Innovation Policy and grants from the Government of Gujarat, just to name a few. Moreover, there is commendable support available from industry to support innovation through entrepreneurship. Many big corporates promote and support startup activities through events, competitions and programs. Foundations are trying to tackle world’s biggest problem with the help of innovation-driven entrepreneurship and are hence keen to support startups through funds and the right kind of connections.

As far as barriers are concerned, I believe there is a disconnect between industry and academia. Hence, it difficult for innovators to come up with interesting solutions. There are cultural barriers as well. I see many students under pressure from their families to take up jobs. Such students tend to move towards defined jobs as a career option. They tend to stay away from innovation and entrepreneurship for financial reasons. With innovation, there is always an inherent risk and a good chance of failure. Many people are uncomfortable with this downside of failure.

The Incubation ecosystem in India has matured and today, almost every educational institute provides some form of support to their students and faculty in this area. I am very inspired by the vision for Ahmedabad University. The University is promoting multidisciplinary research and experiential learning and is very supportive of commercialization of ongoing research. At VentureStudio, we look forward to promoting some meaningful work in this ecosystem, both internally and externally.

More information about Innovation-driven Entrepreneurship can be accessed at [https://www.nber.org/system/files/working\\_papers/w28990/w28990.pdf](https://www.nber.org/system/files/working_papers/w28990/w28990.pdf)

More information about Venture Studio can be accessed at <https://ahduni.edu.in/academics/schools-centres/venturestudio/>

# Young Achievers- Undergraduate students

Sudhanshu Rai, Kairavin Namaha, and Daksh Patel, students of Ahmedabad University, BTech Mechanical Engineering (2019 Batch), secured Grade A and won a cash prize for their project “Gömball” under the theme “Toys for Autistic Kids” in the Project-Oriented Problem Based Learning Program organized by the Indo Universal Collaboration for Engineering Education (IUCEE) between August to December 2021.

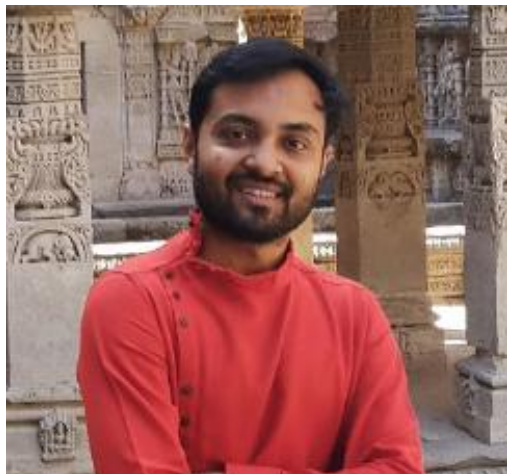
IUCEE was conceptualized by over 150 leaders of engineering education and businesses from the US and India in 2007 and is one of the founder members of IFEES (International Federation for Engineering Education Societies).

These students worked in collaboration with Dr. Madhu Singh, Director, BM Institute of Mental Health, Ahmedabad, and were mentored by Professor Jaina Mehta, Ahmedabad University.





## Young Achievers- graduate students



### Maitrik Shah

Supervisor: Professor Mehul Raval

Awarded the third prize for a paper presentation titled "Deep-learning based emulator for 6S atmospheric correction model", at the IEEE India Geoscience and Remote Sensing Symposium 2021, held 6-12 December 2021.  
<https://www.ingarss2021.com/student-paper-competition.php>



### Brinky Desai

Supervisor: Professor Ratna Ghoshal  
 School of Arts and Sciences

Awarded Fellowship funding from the Island Foundation from January - June 2022 in partial support of the costs of her doctoral research. Brinky recently presented her work at an online workshop organized by the Crocodile Specialist Group of the International Union for Conservation of Nature.

<https://www.iucn.org/>

<https://www.youtube.com/watch?v=lopqWtKTZqk>



### Dhana Lakshmi Manyala

Supervisor: Professor Dharmesh Varade  
 School of Engineering and Applied Science

Awarded best "Young Researcher Presentation Award" sponsored by Association of Environmental Analytical Chemistry of India, Bhabha Atomic Research Centre, India for her paper entitled "Non-ionic IGEPAL CO-520 mediated formation and characterization of novel microemulsions for personal care", presented at the 2nd IC2S2TD-2021, organized by the Department of Chemistry, Sardar Vallabhbhai National Institute of Technology, India in Association with the Department of Chemistry, Chung-Ang University, South Korea during 24th-26th November 2021.



### Shrutika Parihar

Mentor: Professor Priyadarshi Shukla  
 Amrut Mody School of Management

Selected as one of 18 Early Career Researchers for the Newton Bhabha Researchers Link Workshop 2020, organized by West Bengal, State University and New Castle University. The field-based workshop on "Building Ecological Resilience in Vulnerable Mangroves of the Indian Sundarbans: Sustainable and Equitable Management of Biodiversity and Ecosystem Services in the era of Climate Change" was jointly supported by the Newton Bhabha Fund and the Department of Biotechnology and was held from 2-6 January 2022. Shrutika participated with 27 experts, scientists and post-doctoral fellows from ecology, economics, marine biology, and environment & sustainability.

# Meeting report: 2021 Online International Workshop on Intangible Cultural Heritage and Sustainable Development

The International Workshop on Intangible Cultural Heritage and Sustainable Development was held online from 27th September to 11th October, 2021. This Workshop, organized jointly by International Information and Networking Centre for Intangible Cultural Heritage in the Asia-Pacific Region (UNESCO ICHCAP), UNESCO Bangkok and Ahmedabad University, was attended by 70 participants, majority of whom came from across the Asia-Pacific region (mainly Bangladesh, India, Indonesia, Korea, Nepal, Philippines, Singapore, Thailand) and one from Europe (Italy). These participants ranged from post-graduate students, practising professionals, heritage enthusiasts and researchers.

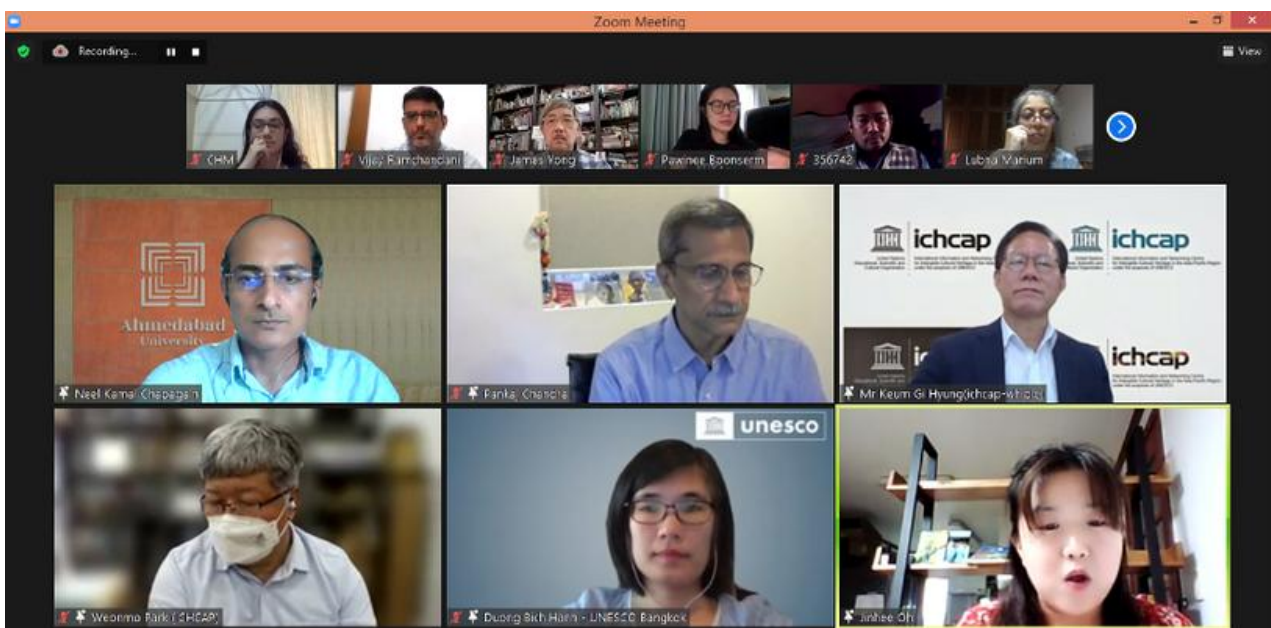
The objectives of this workshop were as follows:

- To broaden the intangible cultural heritage concepts and safeguarding principles under the framework of 2003 UNESCO Convention on the safeguarding of Intangible Cultural Heritage;
- To strengthen capacity of young researchers/practitioners for the safeguarding of intangible cultural heritage in the Asia-Pacific region;
- To emphasize the relevance of ICH to different academic disciplines and different dimensions of sustainable development;
- To foster a network of emerging experts in the field of cultural heritage.

The workshop successfully provided a platform for participants and lecturers from diverse backgrounds to discuss various aspects of ICH using case studies and personal experiences through a series of 11 sessions, one panel discussion and participation in the ICH World Forum titled 'Intangible Cultural Heritage and Creative Industry: Rediscovery of Intangible Cultural Heritage in the Fourth Industrial Age'.

An important component of the workshop was the follow up assignment done by participants to create a project proposal to safeguard an ICH element of their choice by applying their learnings from the sessions. The participants were also offered consultation sessions to guide them during this period of ideation. As a result, 31 participants presented their project ideas individually and in groups in a virtual expo held on 19th and 20th November 2021. Out of these 2 project ideas were cross-border collaborations between India and Nepal. Along with offering insights into the 2003 convention and its application, the participants also appreciated the critical discussions held on the broader issues of intangible cultural heritage including gender and other social issues, the relation to the sustainable development, and ethical concerns.

The workshop was funded by ICHCAP, and supported by the UNESCO Bangkok office.



# Teaching Innovations



**Siddharth Saxena, Assistant Professor, AMSOM, contributed a winning entry at the Capsim-GBSN Educator's Track inbox simulation event held from 4-29 October 2021.**

The Capsim-GBSN Educators Track brings experiential business learning to communities worldwide and is designed for scholars from across disciplines who want to connect with like-minded colleagues on teaching innovations, research and pedagogy needed to serve communities. These microsimulations immerse learners in real-world scenarios and evaluate essential skills in a realistic context. 50 global teams participated at the event, of which 24 teams were shortlisted to proceed further with their proposals.

Professor Saxena's microsimulation in the category Business and Human Rights was titled "Vaccine in the Times of Pandemic", and came third.

**He also contributed a winning entry at the 2021 Fox International Business Case Writing Competition.**

The competition aims to increase the quantity and quality of international business-focused teaching cases. Globalization has created an interconnectedness that extends into all aspects of business. When schools and universities across the globe shifted to an online learning mode, teachers looked for support to communicate insights to students virtually. The 2021 Fox International Business Case Competition sought to close this learning gap by helping authors create teaching case material focused on emerging economies, while also promoting case-writing capabilities in both developed and developing nations. The competition invited case authors from different fields to create business cases focused on concepts critical to international business, with a particular focus on online delivery.

Professor Saxena's case on the "Dark Side of Organizations" was one of the top 6 finalists in the competition.

The 2021 competition was sponsored by Ivey Publishing and the Temple Center for International Business Education and Research. More about the Fox case competition at <https://www.fox.temple.edu/posts/2021/12/announcing-the-winners-of-the-2021-fox-international-business-case-writing-competition/>



# Awarded grants

(For the period October - December 2021)

## Ahmedabad University Seed grants:

Mazad Zaveri

"Building Context-Specific Image/Video Repository for Indian Roads"  
2.0 lakh INR, 1 year



Puneet Arora

"Do Professors Discriminate Against Students? Evidence from India"  
2.0 lakh INR, 1 year



Moumita Roy

"Do students discriminate against female professors? Evidence from India"  
2.0 lakh INR, 1 year



Mahendra Singh Rao

"Impact of numerical information framing on perceived psychological ownership"  
2.0 lakh INR, 1 year



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## Ahmedabad University Teaching Material Development/Innovation grants:

Poonam Dugar

"Balanced Scorecard (BSC) Implementation at FTTH 24x7 Networks Pvt. Ltd"  
0.4 lakh INR, 6 months



# Research Seminars

(For the period October - December 2021)

## Amrut Mody School of Management

- Rahul Singh, Assistant Professor, Amrut Mody School of Management Ahmedabad University. "Essays in International Trade in Post Liberalization India" October 6, 2021.
- Mayank Patel, doctoral candidate at AMSOM, "Performance Evaluation of Indian Fixed Income Mutual Funds", October 28, 2021.
- K V Ramani, Adjunct Professor, MICA, Retd, Indian Institute of Management Ahmedabad, "Public Health: Management Challenges" October 26, 2021.
- Rahul Singh, Assistant Professor, Amrut Mody School of Management Ahmedabad University. "Debt Contract Enforcement and Product Innovation: Evidence from a Legal Reform in India", October 27, 2021.
- Pallavi Vyas, Associate Professor with the Amrut Mody School of Management, 1. "Process of application of the grant recently received for the study titled "Impact of Education of the X&Y Chromosomes on Women's Agency and Experience of Domestic Violence" and 2. "Ongoing research on the "Impact of Covid-19 on the Sex Ratios in Gujarat" November 17, 2021.
- Puneet Arora, Assistant Professor Amrut Mody School of Management, Ahmedabad University, "Is This Course Easy? Incomplete Information and College Students' Performance" December 8, 2021.
- Israël Fortin, Assistant Professor in the Organizational Behavior and Human Resources Area at IIM - Bangalore, "The affordance of ambiguity: Visually communicating the integration of conflicting coordination logics" October 20, 2021.

## School of Arts and Sciences

- Noopur Raval, University of California, Irvine. "Mapping human futures in emerging technologies: Studying the values and work of making AI". October 27, 2021.
- Charu Singh, University of Delhi, New Delhi. "The Idea of 'Stree Shiksha' in Nineteenth century Hindi Public Sphere and the Counter Public". October 25, 2021.
- Jitesh Jhavar, PhD, Indian Institute of Science, Bengaluru, India. "Noise as a signal in animal collectives: An interdisciplinary approach to understanding Animal Behaviour". November 22, 2021.
- Anand Krishnan, Jawaharlal Nehru University, New Delhi. "One Step Forward, Two Steps Back: Understanding the Party-state's Interface with Labour in China". November 23, 2021.
- Jagdish Patel, Italian Institute of Technology, Genova, Italy. "Modeling Complex Biomolecular Interactions". December 15, 2021.
- Sangeet Kumar, Denison University, "Differential Sovereignty and Geopolitical Tussles: Big Tech, the Nation State and a User Centric Regime for the Digital Era". October 6, 2021.
- Dinyar Patel, SP Jain Institute of Management and Research, Mumbai. "Indian Patriot, British MP, Global Anti-Imperialist: The Transnational Life and Career of Dadabhai Naoroji". October 20, 2021.
- Aesha Bhansali, University of New South Wales. "Investigating Emotions in Physics". October 20, 2021.
- Shivshankar Menon, Foreign Secretary at the Ministry of External Affairs, Government of India. "Geopolitics and Indian Strategy". November 17, 2021
- Anita L. Allen, University of Pennsylvania. "Privacy and Justice: Transnational Values for the Digital Age". November 24, 2021.

# Publications

(For the period October - December 2021)

## Articles in Refereed Journals

Thomas S. & Jadeja A. (2021). Investigating the consumers attitude and purchase intention within the context of cause-related marketing campaign for a pharmacy product. *International Review on Public and Nonprofit Marketing (ABDC - B)*, doi.org/10.1007/s12208-021-00327-x.

Janni D., Rajput G., Pandya N., Subramanyam G. & Varade D. (2021). Interfacial properties of novel surfactants based on maleic and succinic acid for potential application in personal care. *Journal of Molecular Liquids*, 342, 117484-91. <https://doi.org/10.1016/j.molliq.2021.117484>.

Manyala D. & Varade D. (2021). Formation and Characterization of Microemulsion with Novel Anionic Sodium N-Lauroylsarcosinate for Personal Care. *Journal of Molecular Liquids*, 343,117657-65. <https://doi.org/10.1016/j.molliq.2021.117657>.

Pandit S. (2021). Advaita: Oneness as a Lived Reality—Examining Aspects of Profound and a Radical Psychology. *Psychology and Developing Societies* , 33(2), 190-207. doi:10.1177/09713336211038814.

Naik, Dalpatraj, Thakur A. (2021). Global Histone H3 Lysine 4 Trimethylation (H3K4me3) Landscape Changes in Response to TGF?. *Epigenetics Insights*, 14(1), 1-14. <https://doi.org/10.1080/21672703.2021.1905151>.

Shukla R., Badiye A., Vajpayee K. & Kapoor N. (2021). Genotoxic Potential of Nanoparticles: Structural and Functional Modifications in DNA. *Frontier in Genetics*, 12(728250), 1-16. <https://doi.org/10.3389/fgene.2021.728250>.

Kapoor N., Sulke P., Shukla R., Kakad R., Pardeshi P. & Badiye A. (2021). Forensic Analytical Approaches to the Dating of Documents: An Overview. *Microchemical Journal*, 170(106722), 1-10. <https://doi.org/10.1016/j.microc.2021.106722>.

## Published Books

Pandit S. (2021). *An Introduction to Psychology* . Delhi : SAGE TEXT BOOKS.



# Funding compendium

## RESEARCH GRANTS, FELLOWSHIPS AND PRIZES

### Agency: International Development Research Centre (IDRC)

#### Scheme: IDRC Research Award

Applicant eligibility: Citizens of developing countries with a work permit valid for full-time work (37.5 hours per week) in Canada until 30 April 2023 which is required prior to applying (the expectation of receiving a post-graduation work permit is not sufficient)

Research areas supported: Climate-Resilient Food Systems, Democratic and Inclusive Governance, Education and Science, Ethics in Development Research, Global Health, Policy and Evaluation, and Sustainable Inclusive Economies.

Budget provisions: Salary support in Canadian dollars between CA\$42,033 to CA\$48,659, for the period 1 May 2022 to 30 April 2023

Duration: 12 months

Deadline: 1st February 2022

Weblink: <https://phg.tbe.taleo.net/phg04/ats/careers/v2/searchResults?org=IDRC&cws=69>

Application process: Via online portal

List of 2020 awards: <https://www.idrc.ca/en/2020-idrc-research-award-recipients>

### Agency: Ministry of Electronics and Information Technology (MeitY)

Focus areas: Research and Development in Electronics, Information Technology, Convergence, Communications & Broadband Technologies and Strategic Electronics, Cybersecurity and emerging areas of technology.

Additional information: Details of the ICT&E R&D and Innovation framework can be accessed at [https://www.meity.gov.in/writereaddata/files/R%26D\\_Framework\\_final%281%29\\_0.pdf](https://www.meity.gov.in/writereaddata/files/R%26D_Framework_final%281%29_0.pdf)

Budget provisions: Personnel, equipment, travel, contingencies and institutional overheads

Weblink: <https://www.meity.gov.in/content/schemes-policies>

Application process: Format for R&D proposals available on website

Information on funded projects: Available at <https://www.meity.gov.in/content/funded-projects>

### Agency: Spencer Foundation

#### Scheme: Research Grants on Education- Large

Budget provisions: Between \$125,000 and \$500,000, including up to 15% overheads. Cost categories include salaries, collaborators, travel, equipment, project expenses, subcontracting costs, others and 15% institutional overheads.

Duration: 1-5 years

Deadline: Intent to apply stage- 26th January 2021; full application deadline-23rd February 2021

Weblink: [https://www.spencer.org/grant\\_types/large-research-grant](https://www.spencer.org/grant_types/large-research-grant)

Application process: Two-stage application process starting with an online "intent-to-apply" followed by a full proposal, applications accepted twice a year.

### Agency: The/Nudge; Centre for Social Innovation and Omidyar Network India

#### Scheme: Research Innovation Program, with a focus on Land & Property Rights X Resilient Livelihoods

Scheme remit: The/Nudge Foundation and Omidyar Network India are committed to supporting research on resilient livelihoods through the pathway of land and property rights through the Research Innovation Program. Proposals are invited that enable high-potential research teams to get deeply involved with ground realities and map bottlenecks to inform decision-making. Knowledge generated through this research will in turn help bridge the information gap that is available to entrepreneurs, nonprofits, philanthropists, private consultants, and policy-makers to support and develop meaningful, implementable interventions that result in resilient livelihoods for the economically disadvantaged.

Thematic focus: (i) Sustainable livelihoods, (ii) Property rights, tenancy and land leasing, (iii) Environment and natural resources

Budget provisions:

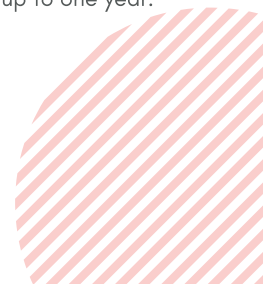
Category A: Up to ₹6 lakhs for desk research, legal research, and research that utilizes secondary sources or pre-existing data. The expected turnaround time for research outputs is up to six months.

Category B: Up to ₹25 lakhs for field research and primary research. The expected turnaround time for research outputs is up to one year.

Deadline: Concept note deadline 13 February 2022, shortlisted applications will be invited to submit detailed proposals.

Weblink: <https://csi.thenudge.org/campaigns/research-innovation-program>

Application process: Via online form for concept note



# Funding compendium

## FUNDING FOR INTERNATIONAL EXCHANGE AND COLLABORATIONS

### Agency: Alexander von Humboldt Foundation

#### Initiative: Friedrich Wilhelm Bessel Research Award

Applicant eligibility: The nominee must meet the following criteria:

- The nominated individual must have gained her/his doctorate no more than 18 years ago. An exception to this rule may be made where justified (e.g. in the case of career breaks to raise children).
- The nominee may not previously have received an award from the Humboldt Foundation for her/his academic work.
- The nominee must have lived and worked outside Germany for over five years at the time of nomination.
- The nominee must not yet have entered permanent employment in Germany at the time of selection.

Award amount: €45,000. Award winners are also invited to conduct a research project of their choice at a research institution in Germany in cooperation with specialist colleagues there. The award enables a total stay of between six months and a full year, which can be split into multiple stays.

Submission deadline: Rolling call, committee meet in March and October each year

Application process: Nominations for a Friedrich Wilhelm Bessel Research Award may be initiated by established researchers at research institutions in Germany. Humboldt Foundation award winners working abroad are also eligible to submit nominations jointly with a researcher working in Germany.

Website: <https://www.humboldt-foundation.de/en/apply/sponsorship-programmes/friedrich-wilhelm-bessel-research-award#h14464>

Additional information: Award areas include the natural sciences, humanities and social sciences, among others. More information on previous awardees can be accessed via the website.

### Agency: EMBO

#### Scheme: Scientific Exchange grants

Scheme Remit: To support research exchanges of up to three months between laboratories in eligible countries. The grants facilitate collaborations with research groups with expertise techniques or infrastructure that is unavailable in the applicant's laboratory. All projects must have a biological significance and should aim to increase our knowledge on a particular biological process.

Budget provisions: Travel costs and subsistence costs at 68 euros per day for applicants from India travelling to eligible countries (details included in scheme guidelines)

Duration: 1 week to 3 months

Deadline: Rolling call

Weblink: <https://www.embo.org/funding/fellowships-grants-and-career-support/scientific-exchange-grants/>

Application process: via the EMBO online application system

### Agency: Human Frontiers Science Program (HFSP)

#### Scheme: Research grants- Early Career

Applicant eligibility: Research grants are provided for teams of scientists from different countries who wish to combine their expertise in innovative approaches to questions that could not be answered by individual laboratories. Preliminary results are not required and applicants are expected to develop new lines of research through the research collaboration. Typically, "Early Career" team members will have completed one or two

periods of postdoctoral training and recently been appointed to independent staff positions that allow them to initiate and direct their own independent lines of research.

Budget provisions: Depending on team size, a fixed sum is awarded, to each team over three years, depending on team size, (awarded 2-member teams, for instance, will receive 300 000 USD and 4-member teams 500 000 USD per year).

Duration: 3 years

Application process: Two-stage application process including a letter of intent by 31st March 2022 and full application (if invited), by mid-September 2022

Website: <https://www.hfsp.org/funding/hfsp-funding/research-grants>

Application guidelines at: <https://www.hfsp.org/sites/default/files/Sciences/Grants/LI%20Guidelines.pdf>





# Funding compendium

## FUNDING FOR INTERNATIONAL EXCHANGE AND COLLABORATIONS

### Agency: Human Frontiers Science Program (HFSP)

Agency remit: HFSP Research Grants support innovative basic research into fundamental biological problems with emphasis placed on novel and interdisciplinary approaches that involve scientific exchanges across national and disciplinary boundaries. Participation of scientists from disciplines outside the traditional life sciences such as biophysics, chemistry, computational biology, computer science, engineering, mathematics, nanoscience or physics is recommended because such collaborations have opened up new approaches for understanding the complex structures and regulatory networks that characterize living organisms, their evolution and interactions.

Scheme: Research grants- program

Applicant eligibility: Research grants are provided for teams of scientists from different countries who wish to combine their expertise in innovative approaches to questions that could not be answered by individual laboratories. Preliminary results are not required and applicants are expected to develop new lines of research through the research collaboration.

Research Grants - Program are meant to allow teams of independent researchers to develop new lines of research through a new collaboration. Priority will be given to new, innovative research projects and teams including members from outside the life sciences.

Budget provisions: Depending on team size, a fixed sum is awarded, to each team over three years, depending on team size, (awarded 2-member teams, for instance, will receive 300 000 USD and 4-member teams 500 000 USD per year).

Duration: 3 years

Application process: Two-stage application process including a letter of intent by 31st March 2022 and full application (if invited), by mid-September 2022

Website: <https://www.hfsp.org/funding/hfsp-funding/research-grants>

Application guidelines at: <https://www.hfsp.org/sites/default/files/Sciences/Grants/LI%20Guidelines.pdf>

### Agency: Science and Engineering Research Board

#### Scheme: SERB International Research Experience (SIRE)

Scheme Remit: to impart high-end research training in frontier areas of Science and Technology, which are of interest to India by providing opportunity to visit leading institutions/universities across the globe for a period of 02-06 months

Applicant eligibility: Age limit of 40 years

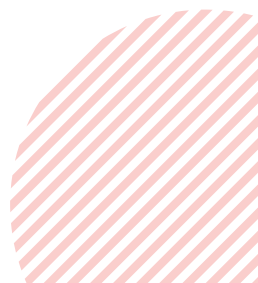
Budget provisions: Selected fellows will be paid a monthly fellowship amount equivalent to US \$ 3000, one time Contingency / Preparatory allowances of Rs. 75,000/- to cover visa fee, airport transfer charges, insurance etc., Overseas Medical Insurance in India and abroad of Rs. 20,000/-. The selected fellows will also be provided shortest route economy class air fare from their place of work in India to the place of the host institute and back.

Duration: 2-6 months

Deadline: 3 February 2022

Weblink: <https://www.serbonline.in/SERB/Sire>

Application process: via the SERB online application system



# Funding compendium

## FUNDING FOR ACADEMIA-INDUSTRY COLLABORATIONS

### Agency: Department of Science and Technology (DST)

#### Scheme: Optimal Water Use in Industrial Sectors-2021: Research Stream

Scheme Remit: The objective of the call is to develop knowledge through R&D and demonstration and developing solutions in the context of Water Conservation, Waste Water Treatment and Water use efficiency in Industry. The focus is on Research and Development proposals, where R&D and private sector work together to design generic solutions for optimal water management in industrial sector.

Stream remit: Leading to Establishment of Proof-of-Concept

Focus areas: Water Conservation, Water Use efficiency, Waste Water Recovery and Utilization of Residues

Team structure: Proposals should be submitted in the industry -institute partnership only, with the academic partner taking the lead. The company/industry may show willingness to be involved in the project through industry attributable technical inputs and resources in-kind.

Budget provisions: Capped at Rs 50 lakhs.

Duration: 2 years

Deadline: 31st January 2022 (extended)

Weblink: <https://dst.gov.in/callforproposals/optimal-water-use-industrial-sector-2021-date-extended-till-31012022>

Application process: Proposals are accepted only online at the DST e-PMS portal under Technology Mission Division.

### Agency: Department of Science and Technology (DST)

#### Scheme: Optimal Water Use in Industrial Sectors-2021: Technology Stream

Scheme Remit: The objective of the call is to develop knowledge through R&D and demonstration and developing solutions in the context of Water Conservation, Waste Water Treatment and Water use efficiency in Industry. The focus is on Research and Development proposals, where R&D and private sector work together to design generic solutions for optimal water management in industrial sector.

Stream remit: Leading to Lab Scale Demonstration.

Focus areas: Water Conservation, Water Use efficiency, Waste Water Recovery and Utilization of Residues

Team structure: Proposals should be submitted in the industry -institute partnership only, with the academic partner taking the lead. The role of industry in the proposal should be tangible and it should show interest in promoting or encouraging the developed technology. The company/industry has to be willing to contribute at least 10% of the project cost.

Budget provisions: Capped at Rs 50 lakhs.

Duration: 2-3 years

Deadline: 31st January 2022 (extended)

Weblink: <https://dst.gov.in/callforproposals/optimal-water-use-industrial-sector-2021-date-extended-till-31012022>

Application process: Proposals are accepted only online at the DST e-PMS portal under Technology Mission Division.

### Agency: Department of Science and Technology (DST)

#### Scheme: Optimal Water Use in Industrial Sectors-2021: Technology Validation Stream

Scheme Remit: The objective of the call is to develop knowledge through R&D and demonstration and developing solutions in the context of Water Conservation, Waste Water Treatment and Water use efficiency in Industry. The focus is on Research and Development proposals, where R&D and private sector work together to design generic solutions for optimal water management in industrial sector.

Stream remit: Leading to Pilot Scale Demonstration for technology in industrial setting.

Focus areas: Water Conservation, Water Use efficiency, Waste Water Recovery and Utilization of Residues

Team structure: Proposals should be submitted in the industry -institute partnership only, with the industry partner taking the lead. The applicant company should have a valid R&D recognition from DSIR and have at least 51% of its shares held by Indian promoters.

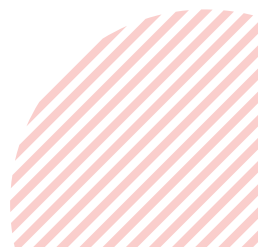
Budget provisions: The Scheme provides grants to academic/R&D institute(s), technically supporting the applicant company as a partner for success of the project, for setting up of demonstration plant, provided the partner company demonstrates willingness to validate the technology through providing tangible inputs to the project. Eligible costs include Equipment, Prototype design & fabrication, Manpower, Work to be outsourced, Consumables, National Travel, Contingency, Miscellaneous, Overheads

Duration: 18 months

Deadline: 31st January 2022 (extended)

Weblink: <https://dst.gov.in/callforproposals/optimal-water-use-industrial-sector-2021-date-extended-till-31012022>

Application process: Proposals are accepted only online at the DST e-PMS portal under Technology Mission Division.



# Funding compendium

## FUNDING FOR ACADEMIA-INDUSTRY COLLABORATIONS

### Agency: Department of Science and Technology (DST)

#### Scheme: Technology Enabling Centres (TEC) in University System

Scheme Remit: The objective of TEC will be to create an Ecosystem for Technology Development in the Universities and to provide a platform to network researchers with other Institutes, National laboratories and Industry. The focus of Centres will be on providing an enabling eco system, process and support system for technology development, deployment and diffusion.

Applicant information: Ownership of TEC lies with the Vice-Chancellor of University and VC is expected to defend the proposal for TEC before the DST's expert committee.

Additional information: DST has established 11 TECs through the first call (Kerala: Amrita University, Odisha: KIIT University, Karnataka: NITTE University, Maharashtra: SP Pune University, Telangana: University of Hyderabad, Uttar Pradesh: Amity University, Tamilnadu: Anna University, Punjab: Punjab University, Chitkara University, Assam: Tezpur University, Mizoram: Mizoram University). DST is now planning to establish 6 to 8 more TECs in Indian Universities through the second call and preference may be given to the states which are not covered under the first call.

Budget provisions: Up to Rs 1 crore per year

Duration: 3+ 2 years

Deadline: 31st January 2022

Weblink: [https://dst.gov.in/sites/default/files/Call%20For%20Proposal\\_1.pdf](https://dst.gov.in/sites/default/files/Call%20For%20Proposal_1.pdf)

Application process: Proposals are accepted only online at the DST e-PMS portal

### Agency: Global Innovation and Technology Alliance (GITA)

#### Scheme: India-Israel Joint Call

Scheme remit: To promote facilitate and support joint Industrial R&D projects between companies from India and Israel, which would lead to successful commercialization and benefit for both countries.

Thematic focus:

- Agriculture
- Energy
- Healthcare
- Information & Communication Technologies (ICT)
- Water

Team structure: The Indian Project Lead (IPL) (i.e. lead company) must be a commercial (for profit) company under the Indian Companies Act 1956/2013, which operates in and is headquartered in India.

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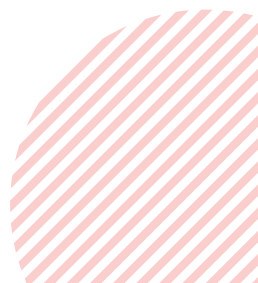
The Indian Project Lead must be a commercial company under the Indian Companies Act 1956/2013, which operates in and is headquartered in India. Other Industry Partners or Academic/R&D Institutions can be brought in as co-investigators. The Israeli Project Lead applicants must be a for-profit Israeli R&D Company.

Budget provisions: Labour, equipment, project management, materials and consumables, sub-contracts, travel and subsistence, joint commercialization, institutional overheads

Deadline: 3 February 2022

Weblink: <https://gita.org.in/OnlineRfp/ProgramInfo.aspx?GITA=kZdo4yRVS4gRExygXAIGyu367iMVXNEC5g/IPjfr53Y=>

Application process: Application package available on website



# Funding compendium

## FUNDING FOR ACADEMIA-INDUSTRY COLLABORATIONS

**Agency: Partnership between the US India Science and Technology Endowment Fund (USISTEF) and Social Alpha, program administered by the IUSSTF**

**Scheme: Ignition grants for "Technology-based Energy solutions- Innovations for Net Zero"**

Scheme remit: To support "technology showstoppers" - promising joint U.S.-India S&T based entrepreneurial initiatives that address the development and implementation of new technologies, tools, and systems to address climate and clean energy challenges in the following focus areas:

- Next generation Clean and Renewable Energy
- Energy Storage
- Carbon Sequestration

Team structure: (i) Binational teams with unique complementary expertise from India and US, (ii) Teams may include partners from academic, commercial and other entities provided they have an interest in applied R&D and have commercial potential.

Additional information: If one of the partners is an academic institution/government entity/research institution, an NOC (no-objection certificate) approving the participation of the Principal Investigator in the project must be submitted at the time of the application.

Budget provisions:

- Ignition Stage 1: Up to 12 months, funding to include Grant from USISTEF upto INR 50,00,000/- and top-up funding and benefits via Social Alpha for up to 5 winners
- Ignition Stage 2: Up to 24 months, funding to include Grant from USISTEF upto INR 1-2 crores and top-up funding and benefits via Social Alpha for up to 5 winners

Deadline: 15 February 2022

Weblink: <https://ignitiongrants.usistef.online/login>

Application process: All formats available on the website

Partner identification: Potential applicants can search for collaborators via <https://www.usistef.online/partner-profile/guideline>

**Agency: Ministry of Electronics and Information Technology (MeitY)**

**Scheme: Chips to Startup (C2S)**

Focus areas: Energy, Healthcare, Agriculture, Disaster Management, Emerging Technology, Safety and Security, Intelligent Transportation Systems

Additional information:

Category-I: Design and Development of Systems/SoCs/ASICs/Reusable IP Core(s):

i. Industry-Academia Collaborative Projects

ii. Grand Challenges/Hackathons

iii. RFP for design & development of IP Core(s)/System/SoC design(s)

Category-II: Development of Application Oriented Working Prototype of IPs/ASICs/SoCs

Category-III Proof of Concept oriented Research and Development of ASICs/FPGAs

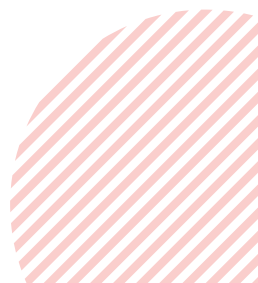
Budget provisions: Details available on website, for each category of proposals

Duration: Details available on website, for each category of proposals

Deadline: 31st January 2022

Weblink: [https://www.c2s.gov.in/about\\_c2s.jsp#ProjectCategorization](https://www.c2s.gov.in/about_c2s.jsp#ProjectCategorization)

Application process: To be submitted online via C2S website (<https://www.c2s.gov.in/callforproposals.jsp>)





*Image credits: \ Ahmedabad University Communications Office, Mehul Raval, Jaina Mehta, Maitrik Shah, Dhana Lakshmi Manyala, Shrutika Parihar, Neel Chapagain, and Siddharth Saxena*

*All requests for research funding from internal and external sources should be sent to the University Research Board for approval, via the Grants Portal.*

*Details of intramural funding available via Ahmedabad University are available in the University Research Board Policy Document. This includes Start-up grants, Seed grants, University Challenge grants, Teaching Material Development/Innovation grants and Conference Travel support.*

*Previous editions of the Research Horizons Newsletter and Funding compendium are archived on AURIS. These editions include details of schemes with rolling calls and additional schemes with past, ongoing or anticipated deadlines. For suggestions on the Funding compendium, please contact the Dean of Graduate School and Research at [urbeahduni.edu.in](mailto:urbeahduni.edu.in).*

