



IIT MADRAS



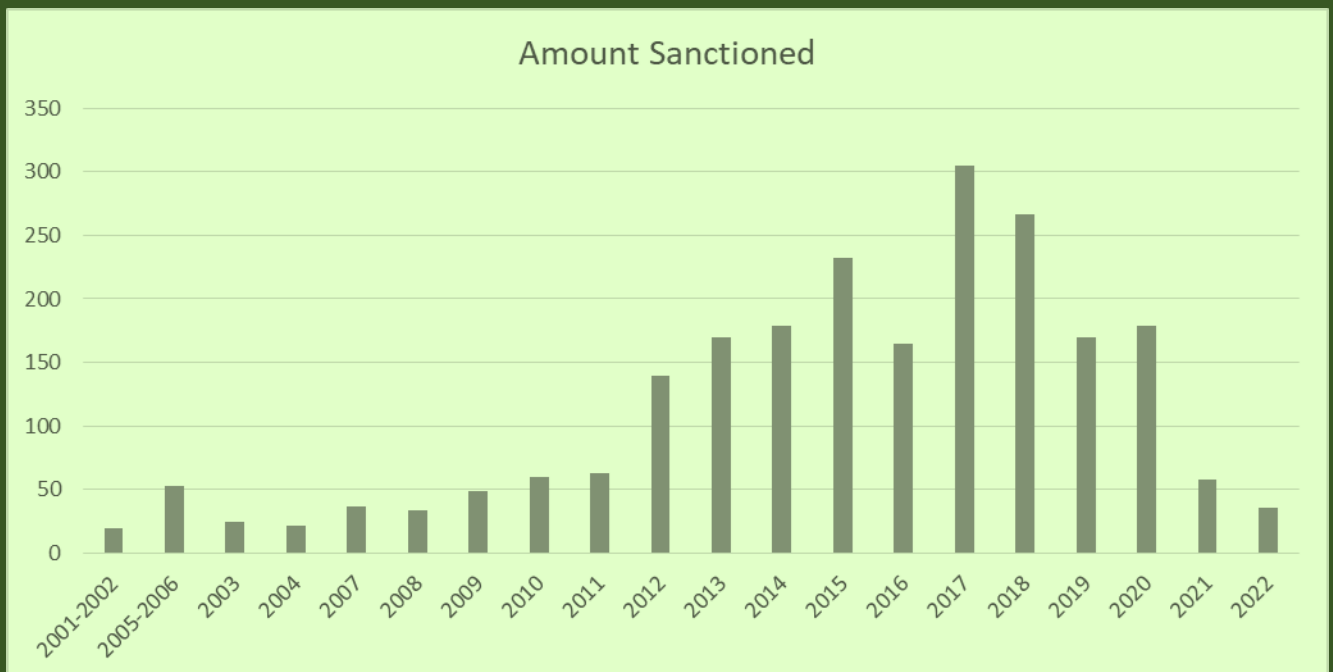
# TRAVEL GRANT REPORT 2022

# TRAVEL GRANT

The goal of this travel grant is to facilitate the professional development of under graduate and graduate students/research scholars and faculty by supporting their travel for attending professional meetings. This also supports exchange programs, summer schools, and joint doctoral programs which provide an opportunity for the recipient to present his/her own research. This enables recipients to interact with peers and established scientists, which also helps develop professional contacts to facilitate their career development.



So far 2236 students are benefited from the travel grant program.



## FEEDBACK FROM SOME OF THE BENEFICIARIES



**Name** : ANIKET BHOYAR  
**Department** : Biotechnology  
**Nature of Visit** : Semester Exchange  
**Place Visited** : Instituto Superior Tecnico, Portugal  
**Duration of Visit** : 6 months

The exchange was a great experience which I am sure to cherish for the rest of my life. It was my first time abroad, which was a little daunting at the start but at the same time, really exciting. When I reached the campus, I was finally able to absorb how a foreign university looks like and feels. Apart from the place itself, I learned a lot about Portuguese culture and got to interact with a lot of local people. As I got to stay at the university's residence.

- I spent a lot of time interacting with people from diverse backgrounds and in the process made friends for life. The University had people from different countries as well that allowed me to learn about diverse culture and heritage.
- I consciously chose to take courses that were meant for Master's or Ph.D. as I wanted to get a flavor of what a Master's program in a foreign university would feel like if i would like to pursue it in the future.
- Apart from the professional growth, I learnt a lot about myself living by alone. This experience has made me a more disciplined, confident & calm person.
- Relations with people from different backgrounds and continents has made me spot the similarities that human nature has and the differences that cultures bring.
- Given the opportunity, I would encourage and guide students by sharing my experiences and answering their queries.
- I would also try to make contributions to the best of my ability to the travel grant for students going abroad.

**Name** : CHATHURYA CHALLA  
**Department** : Dual Degree -Civil Engineering  
**Nature of Visit** : Semester Exchange  
**Place Visited** : KTH Stockholm, Sweden



I left for Stockholm on January 14<sup>th</sup> via an Aeroflot flight. I visited the Entre (reception) at KTH first to collect the room keys, campus access cards and complete certain registration processes. Subsequently I went to my allotted accommodation. We had orientation the next day, during which I got to explore the campus a bit more. KTH is an open campus in a busy city with different buildings for different departments and functions.

For the next few months, I went to KTH via public transport for my classes. There were a lot of fun activities conducted in the first few days so the exchange students could mingle and get to know other students and become a part of KTH. This was a very warm welcome and was inclusive and gave us a taste of Swedish culture, I met many people through this and am still in touch with them. Talking about the academics at KTH, I was introduced to a completely different teaching schedule and pattern than what I was used to before. Their semester was divided into 2 parts focussing on only two courses at a time with 4-hour classes, filled with group assignments. This pattern was refreshing and also the group assignments helped me learn the most. Collaborating with students from around the world and listening to their ideas and opinions helped me widen my horizons and think more out of the box. The courses I took were really interesting and one of them even led me to choosing the DDP that I have now.

Subsequently when the pandemic struck, all our classes were shifted online. Although the country was not on lockdown or had any restrictions, KTH had made classes online keeping students' safety in mind. All meets with other students for group assignments also was online.

In one sentence my visit to KTH Stockholm can be summarised as full of fun and learning, giving me many unforgettable memories, friends and experiences. I would like to thank the Office of Alumni and Corporate Relations team for giving me this opportunity of a lifetime and the Alumni association for kindly sponsoring a part of my trip.





**Name** : DIVYA DARSHINI  
**Department** : M.Tech - Bioprocess Engineering  
**Nature of Visit** : Semester Exchange Program  
**Place Visited** : Polytech Clermont

As a part of the Master Semester exchange Program, I am extremely obliged to work on my Research Project on the mechanism involved in chitosan as the positive modulator for the defense related responses in the wheat plants. In my M.Tech Research Project, I have investigated the possible ability of chitosan and nanoparticles to induce the immune response in wheat plants. The chitosan derived from mushrooms and fungi is tested at a different concentration to test the upregulation of defense related genes. The study of mechanisms involved in the recognition of those molecules in wheat plants is elucidated using fluorescent labels. I have also equipped myself to some of the new technologies such as Fluorescence microscope, SEM and TEM.

Apart from the M. Tech Research Project I have done course work such as Genetics, Plant Biotechnology, Microbiology and Biomolecular Synthesis along with the French course. These courses were tested in continuous assessment alongside with presentation and laboratory skills. The presentation made during the course timelines helped to gain confidence and tailor my presentation skills. I believe this semester exchange program combined all my experiences to exhibit expertise and technical skills. As I have kept updating myself with the current studies related to state-of-the-art investigating methods and experimental techniques in my field of interest. This exchange program also helped overcome open ended challenges in the different living environment. And aimed to provide an opportunity to make a significant contribution to a department world-renowned for its research in agricultural science INRAE. This semester exchange opportunity supported my abilities and increased competence skills.

The research works and courses offered by the host university were inquisitive that it provided a chance in securing research position. The laboratory techniques acquired during this period provided the grounds to discover and hone my practical skills. This research project was a valuable opportunity to learn and manage my work in a collaborative environment with more confidence. Furthermore, together with the courses offered by the host university, it was possible to understand the intricacies of the research topic and overcome the challenges during experimental designs. This, in turn, was helpful in fine-tuning my skills that were necessary to secure a full-time research position in reputed institutes. The exchange program also provided a chance to learn the French language as it was an excellent opportunity to know the host country and its culture to stride for research opportunities. The knowledge under the guidance of mentors and supervisors in the host university through this semester exchange program was a steppingstone to embark in my future research endeavors.

**Name** : DNYANESHWAR PRAMOD SALUNKHE  
**Department** : Dual Degree, Ocean Engineering  
**Nature of Visit** : Semester Exchange  
**Place Visited** : Instituto Superior Técnico(IST),  
Lisbon, Portugal  
**Duration of Visit** : 4.5 Months (Sept 2019-Jan2020)



It was enriching for my core field knowledge and I have acquired sufficient knowledge to determine my career goals. Furthermore, it helped me to get over the fear of socializing with unknown people and make new friends, now I have many international friends.

First of all, I learned to be self-reliant, it made me multicultural and amplified empathy within me, which made me to bring out the best version of me.

**Highlight of the event :**

- Systems Reliability & Maintainability- under Prof. Ângelo Palos Teixeira's supervision, developed Failure Mode & Effect Analysis (FMEA) & analysed production availability of an offshore oil & gas production system with the help of Petri net.
- Manoeuvrability and Control of Ships- under Prof. Sergey Sutulo's supervision, developed code aims to simulate ship manoeuvring in MATLAB.

I will be honoured to become a part of IITM Alumni and contribute to the Alumni Fund as grants to help students to experience the abroad semester exchange programs.

I will love to share my knowledge in my field of work with the institute students.





**Name** : HARSHIT SHEKHAR JHA  
**Department** : Research Scholar, Managerial Studies  
**Nature of Visit** : Annual Conference  
**Place Visited** : POMS 31st Annual Conference of the Production and Operations Management Society (POMS)

I participated in POMS 31<sup>st</sup> Annual Conference of the Production and Operations Management Society (POMS) held in an **online format** from April 30 - 5, 2021 and presented the paper titled 'Synchronized versus Unsynchronized Reopening of Facilities in a Global Supply Chain Affected by a Pandemic'. I presented a multi-period simulation model to examine the impact of delay duration in reopening of facilities at different echelons in a global supply chain affected by a pandemic. Using different demand scenarios, I showed the difference in supply chain performance in case of synchronized and unsynchronized reopening of facilities.

My presentation was on 2<sup>nd</sup> May, 2021 at 1:45am IST. The presentation lasted for 15 minutes followed by 5 minutes of questions and feedback session. The feedback was mostly related to how I could extend my study to capture the supply chain performance when disruption causes a spike in demand rather than only capturing the scenarios with drop in demand due to disruption.

A part from my own presentation, I also attended other sessions and tutorials as well. I attended a tutorial in supply chain risk management by Manmohan Sodhi who is a professor at City University, London. The tutorial was broadly on understanding the gaps in supply chain risk management literature, applying different research methods and understanding the risk possessed by climate change to supply chains.

Although the event was online, I still got to expand my knowledge by asking questions and hearing thoughts of researchers from supply chain domain and got important feedbacks which helped me with my work. The conference also helped me stay updated with the current research trends in supply chain. Overall, it was a fruitful experience for me.



**Name** : LANDGE HRUSHIKESH SANDIP  
**Department** : Dual Degree, Naval Architecture and Ocean Engineering  
**Nature of Visit** : Semester Exchange  
**Place Visited** : Instituto Superior Tecnico, Portugal  
**Duration of Visit** : 6 months



It was my first time to travel out of India but I had some Portuguese friends which gave me some relief. I have interacted with people from different countries and culture which has widen my scope of thinking. It has also made me more self-reliant. Helping as well as encouraging my colleagues to participate in such programs. Making contributions to institute's such unique and interesting programs.

Highlight of the event is Risk Analysis: Exposure to a very interesting course which is a mixture of Finance and Ocean Engineering





Name : JASPREET KAUR SIDHU  
Department : B.Tech - Ocean Engineering  
Nature of Visit : Semester Exchange  
Place Visited : Instituto Superior Tecnico, Portugal  
Duration of Visit : 5 months (July 2019 - Nov 2019)

Respected Sir,

- I visited Instituto Superior Tecnico, Lisbon, Portugal for semester exchange program during July-Nov 2019 Semester. I am so grateful to IIT Madras for providing me opportunity to avail benefit from such a great program.
- I learnt a lot about the work culture and academics of the Instituto Superior Tecnico. I got an opportunity to interact with the professors of a well-known Engineering College of Europe.
- I got a chance to visit Port Sines, the Oceanic gateway to Europe. It is one of the biggest ports of the world. I had taken a ~~trip~~ full-field trip of the port. It was a once in a life-time opportunity.
- All this was possible due to this great opportunity I got in the form of Semester Exchange Program.
- I would be grateful to IIT Alumni for this help.

Thanks and Regards,  
Jaspreet Kaur  
NA17B003

Jaspreet  
Kaur

**Name** : SAI MANOJ G N V T  
**Department** : Ph. D Chemistry  
**Nature of Visit** : Visiting Research Student  
**Place Visited** : Philipps University of Marburg, Germany



I am Sai Manoj G N V T, a PhD student working under Dr. Kartik Chandra Mondal, Department of Chemistry. I went to Philipps University of Marburg, Germany in February 2020 as a visiting research student to work in the lab of Prof. Dr. Gernot Frenking. The purpose of the visit is to receive training on advanced computational methods like Energy Decomposition Analysis to solve the problems of chemical bonding in exotic and reactive molecules. Prof. Dr. Frenking is a pioneer in the area of theoretical analysis of chemical bonding and has published more than 750 articles in various reputed international journals.

My research visit lasted for 8 months, from February to September 2020. It was a tough time due to the Coronavirus pandemic, which was at its peak during my visit to Germany. Despite the pandemic, my training went well and together we published two research articles in reputed journals of Wiley and ACS, one of which was recognised as a hot paper. After coming back to IIT-Madras from Germany in October 2020, with the help of the advanced training I received, I could solve many important research problems pertaining to bonding in various organic, inorganic, hybrid exotic species and publish more than 10 first author research articles in well known, good impact journals, which played an important part of my PhD thesis. Some of my publications, which focus on less well-known metal-nitrogen bonding interactions, are critical in understanding nitrogen activation by nitrogenase enzyme and the commercial conversion of nitrogen to ammonia using metal catalysts. I have trained three junior research scholars from my lab and helped them publish more than four research articles. I thank my supervisor Dr. Kartik and IIT-Madras for giving me a wonderful opportunity.

**Some of the important publications resulting from my research visit are listed below.**

- Sai Manoj N. V. T. Gorantla, Sudip Pan, Kartik Chandra Mondal, Gernot Frenking. *Chem. Eur. J.* 2020. <https://doi.org/10.1002/chem.202003064> Hot Paper.
- Sai Manoj N. V. T. Gorantla, Pattiyil Parameswaran, Kartik Chandra Mondal. *J Comput Chem.* 2021. <https://doi.org/10.1002/jcc.26530> Cover page Article.
- Sai Manoj N. V. T. Gorantla, Kartik Chandra Mondal, *ACS Omega*, 2021, <https://doi.org/10.1021/acsomega.1c05238>
- Ekta Nag, Sai Manoj N. V. T. Gorantla, Selvakumar Arumugam, Aditya Kulkarni, Kartik Chandra Mondal, Sudipta Roy. *Organic Letters*. 2020. <https://doi.org/10.1021/acs.orglett.0c02139>





**Name** : SITHIK  
**Department** : Ph.D - Ocean Engineering  
**Nature of Visit** : Joint Doctoral Ph.D  
**Place Visited** : ECN, France

I did my Masters in offshore structural engineering in IIT Madras, India in 2015 and was working in an industry for 3 years before joining PhD. I was already fascinated about ocean engineering when I did my Master's, enthusiasm increased while working in the same domain in industry. I was very much interested in doing a PhD in some of the top labs in the world and that is when I came across this Joint Doctoral Ph.D. between IIT Madras and Ecole centrale Nantes. I was in luck to be on time to receive this information, I applied and got selected for this program. I spent 18 months in IITM and then moved to ECN, France (July 2019). Covid has taken most of the time like everyone, but still I managed to complete the objective of moving there to Nantes.

My main research theme is fluid structure interaction in ocean engineering. It is getting novelty as there is no one software/equation that will cover the entire physics. So the computational cost is very high in bringing the real world scenario. LHEEA in ECN are forerunner in the coupling strategy (SWENSE) which will reduce the computational cost for very complex problems in ocean engineering. This cotutelle gives me an opportunity to work along with developers of the SWENSE in ECN instead of people who apply the ideas. Also the facilities like the solvers developed in-house codes, made me learn from the scratch, could be difficult, If not in this program. I spent almost 2 years in ECN and summary of the research carried are

- **Numerical Evaluation of Functional decomposition with application to fixed and moving cylinder in presence of focusing waves**
- **A Comparative Study on the Nonlinear Interaction Between a Focusing Wave and Cylinder Using State-of-the-art Solvers**
- **Coupling Mooring solver with the Open foam and its validation**
- **Evaluation of SPAR type Floating offshore wind turbine performance in the numerical solvers (Improving the solvers for solving floating dynamics)**





**Name** : S UMA MAKESH  
**Department** : M.A, English Studies  
**Nature of Visit** : Learning Camp  
**Place Visited** : Asian Youth Leaders Travel and Learning Camp (AYLTLC) 2020



It's always the 'first' experience that'll stay afresh in our memories through-out our life. And travelling to Singapore to attend '**Asian Youth Leaders Travel and Learning Camp**' (AYLTLC) 2020 is the first solo-trip I made, and it was also the first foreign country I travelled in my entire life. Despite the fear of Covid-19 outbreak running in mind, I was prepared and made sure to get the fullest and best out of the one-week time. **Day 1** started with interesting ice-breaker games and events. 100+ participants from across Asia were divided into teams of 8 members each and each team were assigned with a Student Assistant from NUS University. For the rest of the week, we were instructed to work together and prepare a presentation on any topic of interest and create a video presentation at the end. On **Day 2**, we had the 'Opening Ceremony' followed by 3 Learning Sessions on topics such as 'On Institutionalizing Visionary Leadership' by Mr. Joseph Cherian, 'Hope for the Future' by Mr. Robin Bush, and 'The Food Bank' by Nichol Ng. By the end of the day, we were taken for our first Travel session of the training camp. It was both fun and learning which made the experience more enriching and extra-ordinary.

**Day 3** was fully dedicated to travel and tour Singapore as much as we can. We went to many interesting and beautiful places (like Marina Bay Sands, Singapore Museum, NUS College tour, Gardens of the Bay, and more), getting to learn about their mixed culture, food, people, economy and education. Meanwhile, travelling with other participants gave us space to learn about their background, discipline, country, culture and traditions as well. On **Day 4**, we were completely engaged with a Learning session on 'Life Skills' by Keri Kuo, and an over-all Discussion session which was very interactive. Our group worked on 'Plastic Waste and Management' and pulled out a wonderful video which was well-appreciated by the jury and the organizers. And soon the final day arrived, in the Closing Ceremony, our group was presented with the 'Best Outstanding' award and I received the 'Most Outstanding Student Leader' Award for my performance and participation throughout the camp. After taking Group Photos and bidding farewell to the news friends I made in the camp, I flew back to Chennai with load soft memories, learnings, and some chocolates. It improved and transformed me into an efficient and effective leader of tomorrow.





**Name** : RAMANA SANDILYA VEDULA VENKATA  
**Department** : B.Tech Ocean Engineering  
**Nature of Visit** : Semester Exchange  
**Place Visited** : Instituto Superior Tecnico (IST)  
Lisbon, Portugal  
**Duration of Visit** : 5.23 month (162 days)

Personally, I have become Confident and more sociable and learned to acknowledge differences, tiny things in life. Professionally I have picked some important skills which shaped and helped me in achieving career goals, most importantly I have gained strong networking who can help me in the future internationally. I learnt multiple skills including cooking, swimming, Inculcated Empathy and Gained Strong communication Skills (English) and hence became someone who can have meaningful conversations without any fear.

#### Highlight of the event :

**Risk Analysis:** Performed a Risk Assessment of a wind farm Project by developing Net cash flow Model through Excel, calculated IRR, NPV and performed FOSM sensitivity Analysis to understand uncertainty propagation in IRR and discussed about Risk Mitigation Strategies.

**Machine Learning:** Tested different ML Models to test the survival chances of Titanic based on data features, Investigated the Accuracy of Random forest using k- fold cross validation and OOB score, performed Hyper parameter tuning using Grid Search CV with accuracy 82.7% & ROC\_AUC\_Score of 0.945.

*“ I will contribute to the Alumni Fund as grants to help mainly marginalized students have Exchange Semester / Conferences / Internships in the future. Will create more Awareness sessions regarding the process of application using Digital Media like blogs or Informal funda sessions ”*

**Name** : VIPPARLA SRIKANTH  
**Department** : Ph. D, Mechanical Engineering  
**Nature of Visit** : Collaborative Research Degree Program  
**Place Visited** : Technology Sydney (UTS)  
**Duration of Visit** : 5 months (Sep 2019 – Dec 2021)



I Vipparla Srikanth (ME16D035), was fortunate to get a chance to visit University of Technology Sydney (UTS), under collaborative Research degree program. My candidature at UTS was from 23-09-2019 to 26-01-2021, As part of the curriculum I have completed the course work of two compulsory courses Technology Research Preparation (TRP) and Technology Research Methods (TRM) and I have also completed the two out of three stage assessments at UTS. i.e., Candidature Assessment 1 and Candidature Assessment 2 which are necessary prerequisites to award the degree during my tenure.

I would like to take this opportunity to thank IIT Madras for providing such a wonderful opportunity to explore the international boundaries and to collaborate with such an esteemed institution and resource persons. I would also like to specially thank my supervisors Dr. G. L. Samuel, Professor, Department of Mechanical Engineering, IIT Madras and Dr. Dongbin Wei, Associate Professor, MME, UTS. For constantly supporting me with their inputs and guidance.

I would like to thank the alumni's for funding the program, which in deed is a great gesture to help students explore collaborate and gain knowledge, inspired by the same I would love to contribute as best as I can in the future. Thank you, International and Alumni relations, office IITM, for helping us with every procedure.



*We are grateful and thankful to all those who have contributed to the Travel Grant and made this initiative a great success. We look forward to your continued support to make the dreams of this Institute of Eminence a reality and reach the next levels of excellence.*

*We once again express our heartfelt gratitude to all those who benevolently contributed to this cause leading towards the growth and development of IIT MADRAS.*



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