

# ASPIRE

Achievements in Sports, Projects, Industry, Research and Education

Monthly Newsletter  
Department of Mechanical Engineering  
Volume 12 Issue 2 February 2022



Sri Sivasubramaniya Nadar  
College of Engineering

Rajiv Gandhi Salai, Kalavakkam, Chennai, Tamil Nadu, India



## FROM THE HOD'S DESK...



Dear all,

It's a pleasure to bring you the February 2022 edition of Aspire.

Amongst the Nobel prize winners of 2021, we are truly inspired by Maria Ressa, who was awarded the 2021 Nobel peace prize along with Dmitry Muratov for her pioneering work in championing the cause of freedom of the press in Philippines, her native country.

The 2021 Mechanical Engineering UG batch makes the institution proud and happy by garnering the Top honors with 13 ranks out of the 50 awarded by Anna University in the entire State. We truly acknowledge the role of the faculty and staff in this achievement and wish the students the best in their careers. Also, second year students won the bronze medal in the University Physics competition, a global event, giving a fillip to winning international accolades.

The Department has initiated the starting of Materials Advantage students' chapter, run by ASM international, an organization which enables research dissemination to the student community in materials area, through organization of workshops, symposiums etc. We are in the process of formally inaugurating the chapter in the coming month.

Alumni networking is an area we are looking to strengthen, and we are happy to share the start - up story of an e retail sports company Kitstop, news from a planning manager from Amazon USA and coverage of an online seminar on research opportunities in Germany.

We are bringing in an internal project proposal quality improvement culture in the Mechanical Engineering department wherein we are liaising with external research experts from IIT's in evaluating our external funded project proposals.

We are happy to note the feedback we receive from our well-wishers and hope to ring in the changes to keep improving the standard of Aspire.

Best wishes,

**Dr K.S. Vijay Sekar** | [vijaysekarks@ssn.edu.in](mailto:vijaysekarks@ssn.edu.in)



# NOBEL PRIZE WINNERS 2021

## PHYSICS

The Nobel Prize in Physics 2021 was awarded for groundbreaking contributions to our understanding of complex systems with one half jointly to **Syukuro Manabe** and **Klaus Hasselmann** for the physical modelling of Earth's climate, quantifying variability and reliably predicting global warming and the other half to **Giorgio Parisi** for the discovery of the interplay of disorder and fluctuations in physical systems from atomic to planetary scales.



## CHEMISTRY

The Nobel Prize in Chemistry 2021 was awarded jointly to **Benjamin List** and **David W.C. MacMillan** for the development of asymmetric organocatalysis. Organocatalysts are small organic molecules that can catalyze reactions in the absence of metals or metal ions.



## MEDICINE

The Nobel Prize in Physiology or Medicine 2021 was awarded jointly to **David Julius** and **Ardem Patapoutian** for their discoveries of receptors for temperature and touch.

Their findings have allowed us to understand how heat, cold and mechanical force can initiate the nerve impulses that allow us to perceive and adapt to the world around us. This knowledge is being used to develop treatments for a wide range of disease conditions, including chronic pain.



## LITERATURE

The Nobel Prize in Literature for 2021 is awarded to the novelist **Abdulrazak Gurnah** for his uncompromising and compassionate penetration of the effects of colonialism and the fate of the refugee in the gulf between cultures and continents. Gurnah was born in the Sultanate of Zanzibar, an island that was then a British protectorate but is now part of Tanzania.



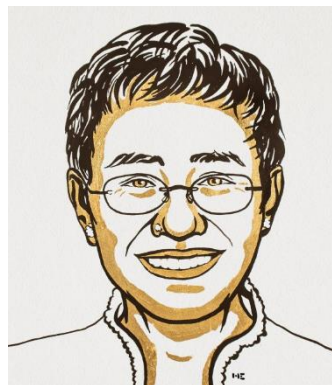
## ECONOMICS

The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 2021 was divided, one half awarded to **David Card** for his empirical contributions to labour economics, the other half jointly to **Joshua D. Angrist** and **Guido W. Imbens** for their methodological contributions to the analysis of causal relationships.



## PEACE

The Nobel Peace Prize 2021 was awarded jointly to **Maria Ressa** and **Dmitry Andreyevich Muratov** "for their efforts to safeguard freedom of expression, which is a precondition for democracy and lasting peace." Muratov jointly started a pro-democratic newspaper which was reportedly assisted by former Soviet president Mikhail Gorbachev, who gave it a portion of his award money from the 1990 Nobel Peace Prize. Under Muratov's oversight, Novaya Gazeta became known for its investigations into corruption, human rights abuses, electoral fraud, police violence, and other misuses of power.





## Maria Ressa: Voice against tyranny



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*“Embrace your fear. Imagine what you're most afraid of, touch it and hold it so that you rob it of its power.”*

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**T**hough the world has universally accepted democracy as the gold standard, autocratic regimes continue to excise their control under the democratic faade. Exposing these burgeoning regimes have been particularly difficult as they engulf the systems that were put in place to check their powers. A valiant against such despotism is Maria Angelita Ressa. Ressa is a Filipino-American journalist who, through Rappler, the Manila-based digital media company for investigative journalism that she cofounded, became known for detailing the weaponization of social media and for exposing government corruption and human rights violations. Her reporting led to a backlash from the Philippine government, and Ressa, who holds dual citizenship, became an international symbol of the fight for freedom of the press in hostile circumstances.

With Russian journalist Dmitry Muratov, she was awarded the 2021 Nobel Peace Prize, cited for using “freedom of expression to expose abuse of power, use of violence, and growing authoritarianism in her native country.”

Ressa was born in Manila in 1963 and her father died when she was one. She moved to the United States with her family in the 1970s after martial law was declared in the Philippines. She attended Princeton University as a premed student and earned a degree in English with a certificate in theatre and dance. Following graduation in 1986, she went back to the Philippines on a Fulbright scholarship to study in Manila.

In 2012 Ressa launched the Rappler website, serving as its CEO and executive editor. The site grew quickly, becoming one of the largest news sources in the Philippines. It gained a significant amount of attention when in 2015 Ressa interviewed Rodrigo Duterte, then the mayor of Davao City, and he admitted to having killed three people. After he was elected president of the Philippines in 2016, Rappler was one of the few news organizations in the country to criticize his policies. It published extensively on his war on drugs, in which thousands of extrajudicial killings took place. Other stories exposed government corruption and human rights violations. Ressa continued to investigate social media, and in 2016 and 2017 she documented how the Philippine government and its supporters used social media to spread disinformation, harass opponents, and manipulate public discourse.

## Campus Update

### ANNA UNIVERSITY RANKS FROM SSN' 2021 PASSED OUT B.E. / B.TECH. DEGREE PROGRAMMES

SL. NO.	DEPT.	RANKS	NO. OF RANKS
1	EEE	1, 2, 8, 10, 14, 16, 22	7
2	ECE	11, 16, 18, 21, 23	5
3	CSE	4, 5(2), 10, 11(2), 14, 19	8
4	IT	1, 3, 8, 13(2), 24, 25,	7
5	CHEMICAL	1, 2, 3, 5, 6, 9(2), 10(2), 11, 15, 16	12
6	BME	1, 3, 6, 8, 14, 19, 24, 25, 27, 31	10
7	MECH.	6(2), 10, 12, 14, 15, 16, 18, 19, 25(2), 26, 27	13
8	CIVIL	6, 9, 14, 19	4
TOTAL			66

## SSN MUSIC CLUB ACHIEVEMENTS

One of the most happening clubs of our college, the SSN music club bagged an array of prizes in the **IIT-M fest Saarang '22**. The winners captivated the virtual audience with their scintillating performance in the second week of January.

### 1. Cadence (Solo Instrumental):

3rd Place: Nikhil Rajkumar

### 2. Vox (Western Vocal Solo):

3rd Place: Soorya S

### 3. Alankar (Eastern Vocal Solo):

2nd Place: Soorya S

### 4. Decibels (Western Band):

1st Place: 120 dB

Band Members:

1. HSJ Sahana
2. Aarya Raghavan
3. Shashank Panda
4. Nikhil Rajkumar
5. Kurian John

### 5. Tarang (Eastern Band):

2nd Place: 120 dB

Band Members:

1. HSJ Sahana
2. Soorya S
3. Vishaq J
4. Shashank Panda
5. Pradeep Ganesh
6. Nikhil Rajkumar
7. Kurian John



## Department Update

**SSN: Mech'21 Graduates Topped the No. of Rank Holders of Anna University for Mechanical Engineering in the state**

S. No	Rank	Name
1	6	KARTHIK KRISHNAN S
2	6	ROSHAN RAM DAYAL D
3	10	SUDARSANAMURTHY T P
4	12	ARVIND KUMAR R
5	14	ACHYUTH RAMACHANDRAN
6	15	STEVE MITCHELL R
7	16	VIGNESH S
8	18	KARTHIK C
9	19	VIGNESH M
10	25	SHRI HARRI V
11	25	SUBRAMANIAN R
12	26	SARVESH S V
13	27	ADITYA BUCHA

Out of 50 Ranks of the University all over the state, SSN- mech Alumni bagged the 13 Ranks which is the highest bagged by a single institution for Mechanical Engineering 2021 passed out graduates.

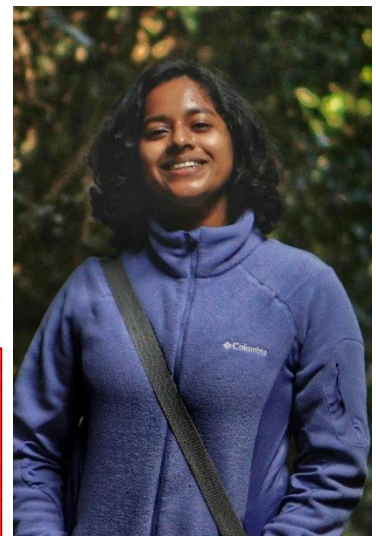


## The University Physics Competition winners - International contest

**Abhijeet G and Mathusha Rao** (II yr Mech) have won the bronze medal in the University Physics Competition (International contest).

The University Physics Competition is an international contest for undergraduate students, who work in teams of three at their home colleges and universities all over the world, and spend a weekend in November, 48 hours, analyzing a real-world scenario using the principles of physics, and writing a formal paper describing their work.

The 2021 University Physics Competition began on Friday, November 5, 2021, at 6pm MDT (Mountain Daylight Time), which was Saturday, November 6, 2021, 1am GMT/UTC. We are one of the 3 Indian colleges to win (the others being IISER Bhopal and IITD). The problem we chose had 2 gold level winners, 20 silver medalists and 30 bronze medallists. About 80 teams just got a certificate of participation. Faculty Supervisor: **Dr. Alphin M S.**



## Placement Update

***YES, THE NUMBER OF PLACED IN MECH 2022 PASSING OUT  
HAS SURPASSED "117"***

Around four students who were already placed in big companies, got one more feather added to their caps!! The four are placed now in Dream and super dream offers!

As a grand surprise, the Only Candidate to get a Software Job with Mitsogo across SSN is from our Dept!! Congratulations to Kevin Thomas for this Noteworthy Performance!!

Company Name: **Mitsogo**  
Role: **Software Test Engineer**  
CTC: **INR 6,25,900/-**  
Student Details:

1. **Kevin Thomas J** (already placed in CTS-GenC)  
Next, the following three got a Superdream offer with Mckinsey. Great to note that they all already have 2 to 3 Jobs on hand from good companies!! Really, SSN Mech is a host of Excellent Candidates!! As faculty members, we feel extremely happy to Nurture such Young & Brilliant Minds!!



Company Name: **McKinsey**  
Type: **Super Dream**  
Role: **Junior Capabilities & Insights Analytics Analyst**  
CTC: **INR 10,00,000/-**  
Student Details:

1. **Krishnanand M** (Got Placed already in Ernst & Young, WOOD)  
2. **Sam Sherin Raj S** (Got Placed already in Flender Drives (FEA company) & CTS-GenC.  
3. **Sneha S** (already placed in HCL)



Company Name: **L&T Construction**  
Job Type: **Core**  
Job Role: **Graduate Engineer Trainee**  
CTC: **INR 6,00,000/-**  
Student Details:

1. **Skanda Vijay V**



Company Name: **Six Phrase**  
Job Type: **Management**  
Job Role: **Operations Manager**  
CTC: **INR 4,98,000/-**  
Student Details:

1. **Sudalai Kannan J**



Company Name: **L1 Supply Networks**  
Job Type: **Management**  
Job Role: **Business Development Executive**  
CTC: **INR 3,00,000/-**  
Student Details:

1. **Murugaraja K S**
2. **Pranesh Rajasekaran**



Being from a Core Discipline, it's not that easy to outperform peers from Circuit branch students with Software skills. Our Student Kevin did it!! Such a wonderful performance that he alone got the Job!!

Process with McKinsey is Tricky than Tough!! Off-campus placements are too stringent and just to state that our last batch student Naveen got through an offer with McKinsey recently after a 5-hour long drawn process. At campus, it is relatively the same but manageable. Yet, it is not an easy walk for students with McKinsey!! Lot of expectations on Math Skills, Logical, Communication, Decision Making and so on with McKinsey!! This is the Second Round of Campus Visits by the company for a different role with high CTC. Three from Mech who were placed already with Good Companies have demonstrated Once more their Superlative Performance and Got this Coveted Job!! Best Remains Best!! Great to hear!!



**Tanishq Philip Alexander**, ME Energy II Year (Mechanical Engg Department), Selected for an internship at RCG Energy (Renewable Cogen Globe).

**HEARTY CONGRATULATIONS**



## External Recognition



**Dr. A S Ramana**, Associate Prof., was invited to attend Department Academic Advisory Committee Meeting organized by Mechanical Engg. Department of Er. Perumal Manimekalai College of Engineering, Hosur on 8.01.2022

**Dr. K.S. Vijay Sekar**, Prof & Head/Mech, delivered an Invited Talk on "2D Scalar variable Problems", at the Six-day Faculty development training program on Finite element analysis, organized by Dr. NGP Institute of Technology, Coimbatore and sponsored by Centre for Faculty development, Anna University on 04.01.2022

**Dr. Satheesh Kumar Gopal**, delivered a talk on "Project endeavors and Social impact of Robotics" on 24.01.2022 as a resource person for the AICTE Sponsored SIX DAYS SHORT TERM TRAINING PROGRAM (STTP IN ONLINE MODE) titled "Embedded Control for Robotic Applications (ECRA2021) between 19th to 25th January 2021, organized by the Department of Electronics Engineering, MIT Campus, Anna University

## International Journal Publication - SCI /Clarivate Indexed



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*Sivashanmugam N, Harikrishna KL, Rao SK, Rameshbabu N, Manojkumar P. Influence of plasma electrolytic oxidation coating on corrosion characteristics of friction stir welded ZE41 rare earth magnesium alloy. Surface Topography: Metrology and Properties. 2021 Dec 24;9(4):045049. Impact Factor: 2.038*

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## International Journal Publications – SCI/ Clarivate Indexed

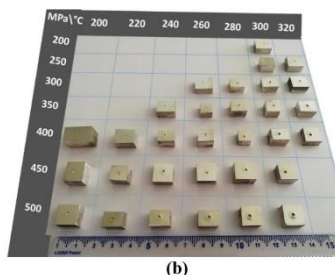
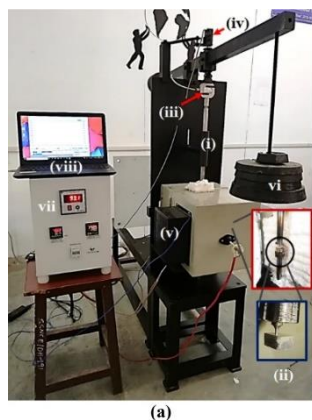


Gopinath C, **Lakshmanan Poovazhagan**, Palani S. Fiber laser microcutting on duplex steel: parameter optimization by TOPSIS. *Materials and Manufacturing Processes*. 2021 Sep 30:1-10: Impact Factor: 4.616

Parthiban K, **Lakshmanan Poovazhagan**, Gnanavelbabu A. Experimental and Theoretical Yield Strength of Silicon Carbide and Hexagonal Boron Nitride Reinforced Mg-Zn Nanocomposites Produced by the Combined Effects of Ultrasonication and Squeeze Casting. *Silicon*. 2022 Jan 20:1-15. Impact Factor: 2.67



**Ebenezer D, Rao SR**. Impression Creep Behavior of an Mg-Zn-RE Alloy at Elevated Temperatures. *Metallurgical and Materials Transactions A*. 2022 Jan 3:1-14. Impact Factor: 2.556



**Zindani D, Maity SR, Bhowmik S**. A novel decision-making tool for performance evaluation of vegetable oils used as heat transfer fluids in concentrated solar power plants. *Environment, Development and Sustainability*. 2022 Jan 19:1-44. Impact Factor: 2.95



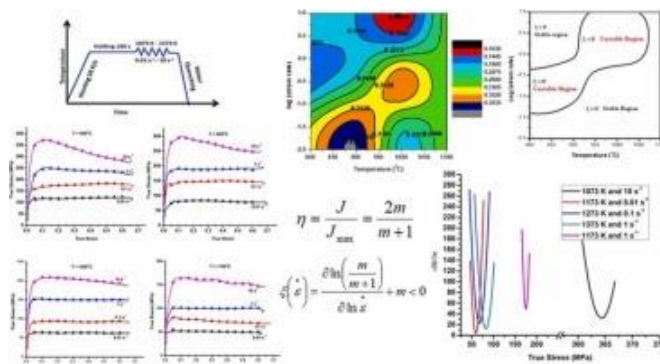
## International Journal Publications - SCI / Clarivate Indexed



Palaniyappan S, **Veiravan Annamalai**, Kumar V, M Sukanya N, Veeman D. Process optimization and removal of phenol formaldehyde resin coating using mechanical erosion process. *Progress in Rubber, Plastics and Recycling Technology*. 2022 Jan 3:14777606211066316. Impact Factor: 1.154

**Santosh S**, Sampath V, Mouliswar RR. Hot deformation characteristics of NiTiV shape memory alloy and modeling using constitutive equations and artificial neural networks. *Journal of Alloys and Compounds*. 2021 Dec 28:163451.

Impact Factor: 5.316



## Scopus Publication

**Raja S**, Natarajan S, **Eshwar D**, & **Alphin M. S.** (2022). Energy and exergy analysis and multi-objective optimization of a biodiesel fueled direct ignition engine. *Results in Chemistry*, 100284. Elsevier.



## Faculty Write-Up

### Initiating Materials Advantage Student Chapter at SSN

– A brief writeup by Dr. D. Ananthapadmanaban and Dr. S. Santhosh

The Mechanical Engineering department initiated the process of starting a student chapter of Materials Advantage with the support of our Principal, Dr VE Annamalai, who floated the idea to the department. Our HOD, Dr K.S. Vijay Sekar, nominated Dr. D. Ananthapadmanaban and Dr. S. Santosh to be the coordinators for this chapter. The first meeting was held on 2<sup>nd</sup> January 2022 between 10.30 A.M and 12.45 P.M. The meeting was presided over by Dr. M. Kamaraj, Professor, Department of Metallurgical and Materials Engg., IITM and Chairperson, ASM Chennai Chapter, who welcomed the representatives from various colleges of repute. This was followed by a detailed discussion on the benefits of starting a student chapter by Dr. Shubrajit Bhowmik, Secretary, ASM Chennai Chapter. Dr. Kamachi Mudali, Vice- Chancellor, VIT Bhopal and ASM Trustee then interacted with all of us and stressed on the importance of students availing international membership of Material Advantage Chapter.

He also highlighted that with one membership of Material Advantage the student becomes member of four reputed international societies of high relevance. Dr. Kamachi also outlined on various ASM Chapters in India and their activities. Dr. Mudali informed that ASM has a glorious history of more than 100 years and hence, becoming an ASM member is a pride for all students. Every chapter must bring in at least 25 student members, and first year B.E/B.Tech students also should be inducted as they would have more years to serve in the MA activities. This is open to students of all departments who have interest to do something with materials (aerospace, automobile, robotics, biomedical, electronic, structural materials, etc.). Dr. Kamachi urged all members of Material Advantage to come together and plan for a Joint Annual Conference. This will increase the interaction among all the students

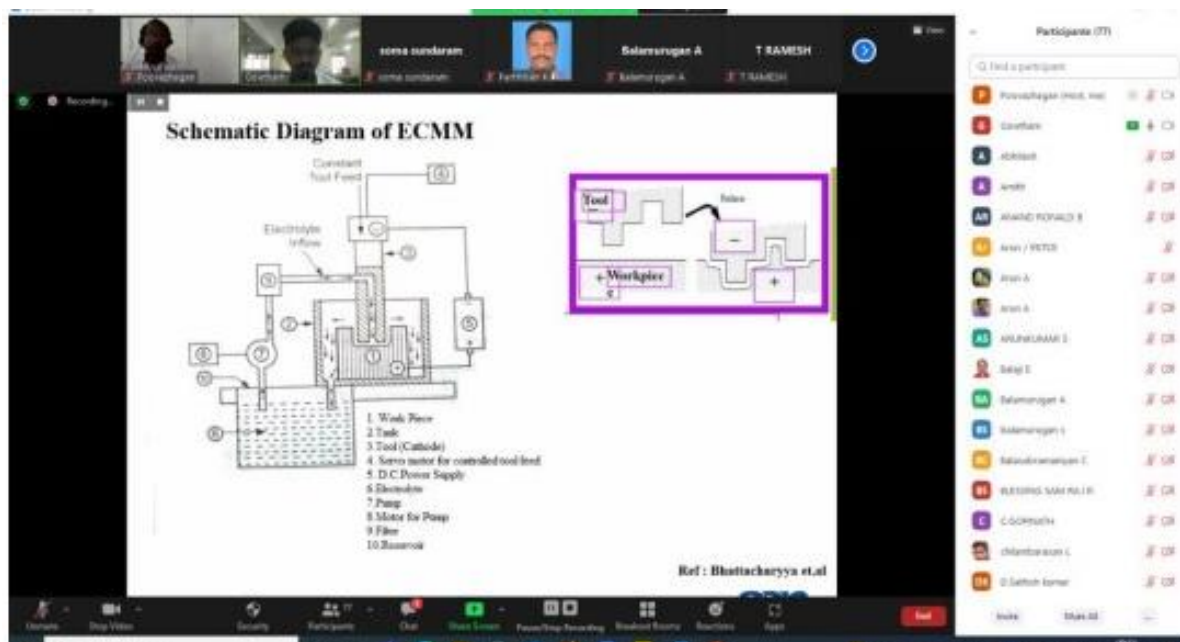


and faculties and showcase their talents. It was announced that for the first time when any student becomes a member, his first membership fees would be USD 5 and USD 15 thereafter, provided a minimum of 20 students join from a college. For the first time, USD 10 will be sponsored by ASM Chennai Chapter. This was followed by presentations from various colleges about their activities where Materials Advantage chapter was already existing. A detailed brochure on the benefits of becoming a member in Materials Advantage is attached separately. Those students who are interested in joining this chapter may contact Dr. D. Ananthapadmanaban or Dr. S. Santosh for enrolment. The brochure

could be found at this link: [https://drive.google.com/file/d/1baHy0JWWG-7GUmiezb3xH0You7d\\_7lo/view?usp=sharing](https://drive.google.com/file/d/1baHy0JWWG-7GUmiezb3xH0You7d_7lo/view?usp=sharing)

## Scholar Info

Dr L Poovazhagan, ASP/Mech., convened the Ph.D Viva-Voce examination of his Full-time research scholar Mr. Gowtham K on 11.01.2022.



Mr. Nagarajan S, Lab Instructor, Department of Mechanical Engineering completed online Alison course "Elements of Energy Management System (EnMS)" on 22/01/2022.

## Student Write-Up

S.NO	DATE	ACTIVITY DONE DURING THE MONTH
<b><u>THIRD YEAR</u></b>		
1)	24/12/22 -26/12/22	<b>Ram Prakash M S,3rd Year</b> <ul style="list-style-type: none"> <li>Build Wireframes and low fidelity Prototypes(UX Design)</li> </ul>
2)	20/12/2021- 03/01/2022	<b>M Vigneshwaran,3rd year</b> <ul style="list-style-type: none"> <li>Training program on automotive assembly (TVS)</li> </ul>
3)	22/12/2021- 22/01/2022	<b>Sriram M ,3rd year</b> <ul style="list-style-type: none"> <li>Inplant training in IGCAR</li> </ul>
4)	22/12/2021- 22/01/2022	<b>Mohanraj P, 3rd year</b> <ul style="list-style-type: none"> <li>Inplant training in IGCAR</li> </ul>
5)	14/12/2021- 03/01/2022	<b>Shivani Sathyanarayan, 3rd year</b> <ul style="list-style-type: none"> <li>Inplant training in BHEL-BHPVP</li> </ul>
6)	27/12//2021 -31/12/2021	<b>Sricharan S,3rd year</b> <ul style="list-style-type: none"> <li>Simpson Inplant training.</li> </ul>
7)	27/12/2021- 13/01/2022	<b>Sreya Mary Thomas,3rd year</b> <ul style="list-style-type: none"> <li>The training offered exposure to equipment engineering and piping activities related to Oil and Gas industry.</li> </ul>
<b><u>FINAL YEAR</u></b>		
8)	04/01/2022- 10/01/2022	<b>Kevin Thomas J,4th year</b> <ul style="list-style-type: none"> <li>Got placed in Mitsogo Inc. as software test engineer</li> </ul>



9)	10/01/2022	<b>Krishnanand M, 4th year</b> <ul style="list-style-type: none"> <li>Received a placement offer from McKinsey &amp; Company.</li> </ul>
10)	11/01/2022	<b>Sam Sherin Raj S, 4th year</b> <ul style="list-style-type: none"> <li>Placed in McKinsey &amp; Company</li> </ul>

## Abhijeet G and Mathusha Rao , II-Year writes...

The **University Physics Competition** is an international contest for undergraduate students, who work in teams of three. Colleges and universities all over the world spend a weekend in November, 48 hours, analyzing a real-world scenario using the principles of physics, and writing a formal solution paper describing their work.

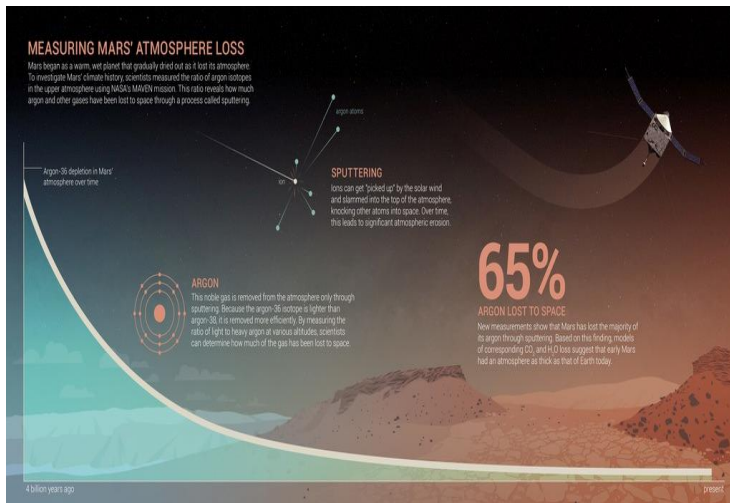
### The University Physics Competition

Home	<p>The University Physics Competition is an international contest for undergraduate students, who work in teams of three at their home colleges and universities all over the world, and spend a weekend in November, 48 hours, analyzing a real-world scenario using the principles of physics, and writing a formal paper describing their work.</p> <p>Before the contest, all teams must be officially registered on this website by a faculty member, who will serve as their team adviser, verify that they are complying with contest rules, and pay the team registration fee. All registrations must be submitted at least 6 hours before the contest begins.</p> <p>At the start of the contest, each team selects one of two problems which appear on this website. Problems are written to be accessible to students who have had at least one year of university physics but are designed to be conceptually rich and open-ended in nature, so that they are still challenging to senior level students. The problems may contain incomplete information, so the students have to do background research and make some reasonable assumptions in order to proceed with the analysis. This means that there may not be one unambiguously correct method, but instead there may be many useful approaches and approximations.</p> <p>During the contest, teams may use books, journals, computers, the Internet, programs that they write, or any other nonliving resources, but they may not consult with any people outside of their team. Teams must perform a theoretical analysis of the scenario presented using the principles of physics,</p>
Contest Rules	
2021 Contest	
2020 Contest	
2019 Contest	
2018 Contest	
2017 Contest	
2016 Contest	
2015 Contest	
2014 Contest	
2013 Contest	
2012 Contest	
2011 Contest	
2010 Contest	

My classmate Mathusha and I teamed up and participated in this year's edition of the competition. Dr.M.S.Alphin was our faculty coordinator. We were awarded the **Bronze Medal for our solution paper**. We were given two questions and were told to present the **research work and solution** for either one of them.

We chose problem statement A which is as follows; Problem A: Suppose that we could increase the atmospheric pressure on the surface of Mars to 0.2 bar, by vaporizing the polar caps and subsurface ice. This atmosphere would then likely decrease over time, because of several processes, such as escape into space, and erosion by the solar wind. How would the surface pressure decrease as a function of time? How much time would it take until the pressure is only 0.1 bar?

Mathusha and I split our work since we only had the option of collaborating online thus lacking the flow and synchronization that would have been present during an offline interaction. She worked on the processes which would bring up the original change in atmospheric pressure. For this she gathered root data on the Martian atmosphere and assumed a polytropic process causing the same change. Then she estimated the amount of solid carbon dioxide and ice which is needed to cause the increase. This was done by using real life data and substituting it in a modified equation of state. The math is explained in detail in the solution paper. Thus, with this part, we got data which was used in the mathematical model. I worked on the equation for the depleting atmospheric surface as a function of time.



My idea was to develop a function wholly dependent on time, for this to hold I had to make certain assumptions of the most fundamental ones are listed below:

1. The distribution of the atmosphere is uniform over the entire planet
2. Ideal gas equation holds the above two assumptions are valid since the standardisation of the atmosphere is not a new concept and has been done on earth's atmosphere for the development of aeronautical vehicles.

3. The erosion causing effects do not fluctuate over time The atmosphere is made

up of various gases and erosion basically would mean the loss of these gases into space. I assumed the loss was constant over the entire drop of pressure. Other finer assumptions are detailed in the solution paper.

From this competition, we gained a deeper appreciation for theoretical physics. We realized that it is an important part of our lives and is something which would never grow out of style. It is wonderful how a beautifully framed problem can stimulate and enhance our thought process. It is something we should all learn to appreciate.

## Kevin Thomas. J , IV-Year writes...



I am Kevin Thomas. J, from final year mechanical .I got a full-time offer from **Mitsogo** to work as a **software test engineer**. In this write-up, I have shared my experience, which I gained from the selection process of Mitsogo. The company approached our college to recruit for nine different roles. The recruitment was not department-specific.

### •**Aptitude Round:**

It was the usual online proctored aptitude test. Usual topics **like time and work, speed and distance, mixtures and allegations**, etc., were covered, but the questions were tougher than the aptitude tests which were conducted by other companies. The results were immediately shown on the screen. About 70% of the participants cleared this round.

### •**Reasoning Round:**

Unlike the reasoning questions asked in other companies' selection processes, this round had questions that were similar to the questions asked in the Logical Reasoning section of the CAT (Common Admission Test). By interpreting the data from one set of instructions, we need to answer 3 or 4 questions. The results were immediately shown on the screen. We need to be more attentive and time-conscious to clear this round. Only a little more than 50% of the candidates made it through this round.

### • **Comprehensive assessment Round:**

Comprehensive round = Essay writing (2 ques) + Programming (3 ques)

Essay writing:

- a) For the first question, we need to type an essay of more than 500 words within 15 minutes on a given topic. For us, the question was, "Do real superheros exist? What is your opinion? Explain it. "
- b) Second question was more like a technical writing question. We were given a technical topic about which we had no idea. We can surf the internet to learn about the topic and type an essay, which should have a minimum of 500 words. The question must be completed within 45 minutes (which includes both surfing the internet and typing the essay). The question was, how does Oauth 2.0 benefit enterprises? Compare IOS and Oauth 2.0.

- **Programming:**

We had three questions, and the difficulty level of those questions was easy, medium, and hard, respectively. For each question, we need to understand the question, find the logic, and type a snippet of code using any one of the programming languages of our choice. We can check the code using the test cases provided along with the question. In-depth knowledge of programming is not necessary to clear this round.

We need to share our whole screen during this assessment. Results were announced only after a few weeks. Only four candidates made it through this round.

Based on the comprehensive assessment, the company allotted the roles for the candidates, and interviews were conducted for the particular role for which we were selected. We cannot select roles as we wish. I was selected for the Software Test Engineer role.

- **Interview - 1: Junior Test Engineer - Technical:**

In this round, no programming questions were asked. Most of the questions was based on a scenario and to answer the test cases you will test for the particular product. Example: If you have to buy a wheel chair for a physically challenged person, how many ways will you test the wheel chair? You have white paper in your hand. In how many ways will you prove that the paper is white in colour? I got only one question related to finding the logic behind a pattern.



- **Interview - 2: Senior Test Engineer - Technical :**

This was similar to the previous round, but the questions were more related to the role. As an example, suppose you are given a mobile-based application about which you know nothing and are asked to test it for a period of time before submitting a report. Based on what factors will you test the software and how will you come to a conclusion about the software? Based on which factors will you test a search engine? What is the latest tech news that you read?

- **HR Interview:**

This was an usual HR round. They asked about my family, my location and gave a brief about the job nature and timings.

- **Final Interview:**

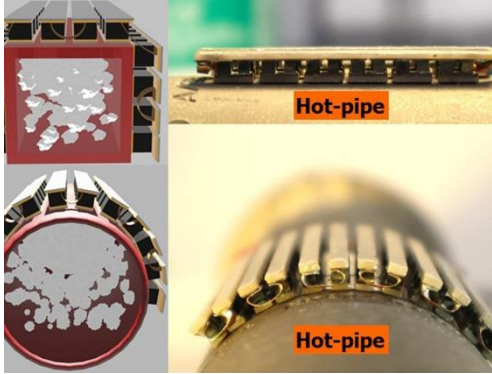
All the questions were based on my resume, about my projects, my hobbies, Why did I choose Mitsogo?, etc.

Overall, the process was clean and challenging. A decent level of aptitude, knowledge in programming and basic understanding of how a software works is enough to bag a job in Mitsogo.



## Mech Marvel

### Turning Waste Heat Into Electricity!



The energy systems that power our lives produce wastage in the form of heat radiation. Researchers at **Penn State** have developed a new **flexible thermoelectric generator** can wrap around hot surfaces and convert wasted heat into electricity more efficiently than previously possible.

The team were working on enhancing the performance of thermoelectric generators—**devices that can convert differences in temperature to electricity**. When the devices are placed near a heat source, electrons moving from the hot side to the cold side produce an electric current. Initially rigid devices were produced, which proved to be very efficient. Through novel manufacturing methods they progressed onto flexible devices that could give a good form fit onto typical waste heat surfaces such as **pipes**.

Quoting a member of the team: "Think about an industrial power plant with pipes hundreds of feet long, if you can wrap these devices around an area that large, you could generate kilowatts of energy from wasted heat that's normally just being thrown away."

Here's an [Article](#) and a [Journal Paper](#) for further details about this exciting development.

## Corporate Story

### Detect Technologies



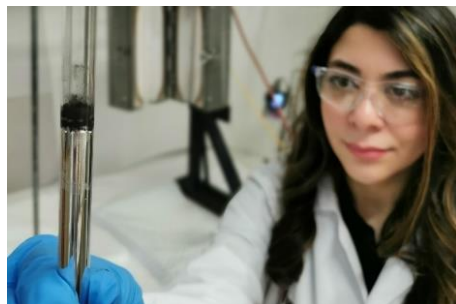
Automation of industrial processes leading to increased productivity is a cornerstone of the **Industry 4.0** revolution. Founded in 2016, **Detect Technologies** is a company that aims to be at the forefront of implementing this sweeping change. They offer industrial solutions through their patented systems that integrate AI, Robotics, IoT, Computer Vision and Machine Learning.

Detect has a wide portfolio of industrial AI and IoT systems. One of the areas this Chennai-based company focuses on, is developing solutions for pipeline integrity and management. Their flagship product is a fully automated, continuous condition monitoring system for pipelines that can operate at extreme temperatures.

They prominently involved in sectors such as oil and gas, petrochemicals, construction, steel, metals, chemicals, fertilizers, pharmaceuticals, power, renewables, and cement. Some of their clients include Shell, Tata Steel, Adani Group and ExxonMobil. In coming years, they hope to expand operations globally and revolutionize the industrial sector. If you're interested, do check out their [Website](#) and [Linkedin](#) for news and openings.

## Amazing Innovation 209

### Cutting Down Emissions With A Catalyst!



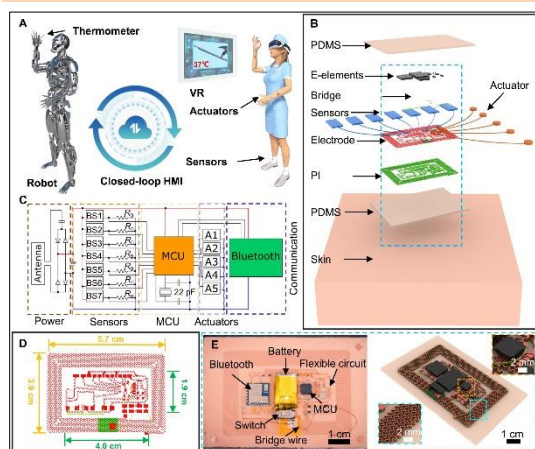
Finding ways to reduce **carbon dioxide (CO<sub>2</sub>)** emissions by capturing it has been a major point of research lately. At **RMIT**, researchers have developed a new method for quickly **converting CO<sub>2</sub> into solid carbon**, which can be stored indefinitely or turned into useful materials.

The RMIT team's new system uses a liquid metal catalyst alloy called **Eutectic Gallium-Indium**, which is heated to between 100 and 120 °C. Then, carbon dioxide is injected into the mix, and as the bubbles rise, the CO<sub>2</sub> molecules split into flakes of solid carbon. These float to the top, making it easy to collect the material.

The resulting solid carbon is a huge advantage, as it is stable and can be stored safely without risk of leakage, compared to other forms of carbon capture methods where gaseous CO<sub>2</sub> is the product. The next steps for the team are to scale up the system to a modular prototype that's about the size of a shipping container. Here's a [Video](#) about the research and a [Journal Paper](#) for further reading.

## Amazing Innovation 210

### Skin Patches For Remote Operation Of Robots



A team of researchers from City University of Hong Kong, Dalian University of Technology, Tsinghua University and the University of Electronic Science and Technology of China has developed a **flexible skin patch** that can provide **haptic feedback** to and from a person and a robot, allowing for teleoperated robots.

The patch has sensors for reading information from its own sensors, wireless transmitters to send the information it is receiving, and small, vibrating magnets that assist with haptic feedback. Groups of patches are placed on the skin of an operator at important junctures. All the combined data from the patches allow an operator to control a remote robot without having to wear clumsy gear. Additionally, the patches are also applied to parts of the robot to allow the operator to receive feedback.

It is still in the prototyping stage, once fully developed holds numerous possibilities in the use of robots to do crucial tasks. Here's the [Journal Paper](#) for further reading.

## Alumni Write-Up

### Manoj Umapathy- Mech18 alumnus



Next up, we have former football captain, an avid soccer enthusiast who founded the sports e-retail company Kitstop. Manoj's passion in sports shined during his days in SSN when he took on the role of Head organizer of SSN championship for two consecutive years and was the sponsorship head of SSN trophy. He interned in Saint-Gobain, working on optimising RO waste disposal system. Joining Mu Sigma, a Big data analytics company after graduation, Manoj provided analytical solutions for real time business problems in the retail



marketing and financial planning domains. Gaining his expertise in the role for the next three years, Manoj founded Kitstop in 2021. Kitstop is the fastest growing sports hub in India. Based in Combatore, Kitstop aims to help everyone play their favourite sport by making selling sports equipments that are both affordable and compelling.

### Vivek Ananthakrishnan – Mech14 alumnus



Supply chain management is ascending to vital importance in recent times, bolstering the modern web of manufactures and consumers. Let us explore the journey of our alumnus Vivek who is currently working in this domain as a planning manager at Amazon Inc, California. During his final year of his undergraduate, Vivek was a project intern at Carborundum, where successfully used DMAIC tool to Analyse and Solve the quality issue of "Nut Pull-out". After graduating from SSN, he pursued his Master's in Industrial engineering in Penn State University, Pennsylvania. He was a part of the graduate student's council and the INFORMS

(Institute for Operations Research and the Management Sciences) in Penn State.



He worked with MediaCom as a Business intelligence and Analytics intern in strategizing audience targeting for clients. Later, Vivek joined Georgia-Pacific, a pulp and paper company based in Atlanta, Georgia. Initially as a manufacturing engineer, he developed and implemented asset strategies for production equipment. Soon he was promoted to the role of supply planner, responsible for developing the production plan for the various product categories. Then acceding to the role of senior capacity planner, Vivek formulated master production schedules before his absorption into Amazon Inc, California. With a passion for analysing data and prior manufacturing operations experience he believes there is always a more efficient way to optimize production planning and the supply chain network regardless of the industry or domain of work.

## Alumni Association Activity

**Name of the event:** Transition from college to industry

**Date:** 22 - 01 - 2022

**Number of attendees:** 35

**Faculty coordinator:** Dr. C. Arun Prakash

**Student coordinators:** A. Sabareesh, Mohanraj. A, Biju. R, Sricharan S

**Alumni:** Balakrishnan R, Deva Prashanth, Dhruv Parthasarathy, Pranaav Sankar, Pratheeshkumar N, Vigneshwar M

On the 22nd of January, the alumni association of the mechanical department conducted a meet-up on the topic "Transition from college to industry" to make the students of third and fourth year aware of what to expect once they step into the industry after graduation. For this meet-up, alumni from three domains, core, IT, and analytics, were called to share their experiences when they first stepped into the industry. Balakrishnan R who is working as Integrated components and solutions analyst at Caterpillar, Pranaav Sankar who is working as Assistant manager at Hyundai Motors India were alumni from core; Pratheesh Kumar who is working as Associate consultant business analytics at ZoomRx, Deva Prashanth who is working as product scientist at Unravel were the alumni from analytics domain; Dhruv Parthasarathy who is working as software developer at MuSigma, Vigneshwar M who is working as senior software engineer at LTI were the alumni from IT domain.

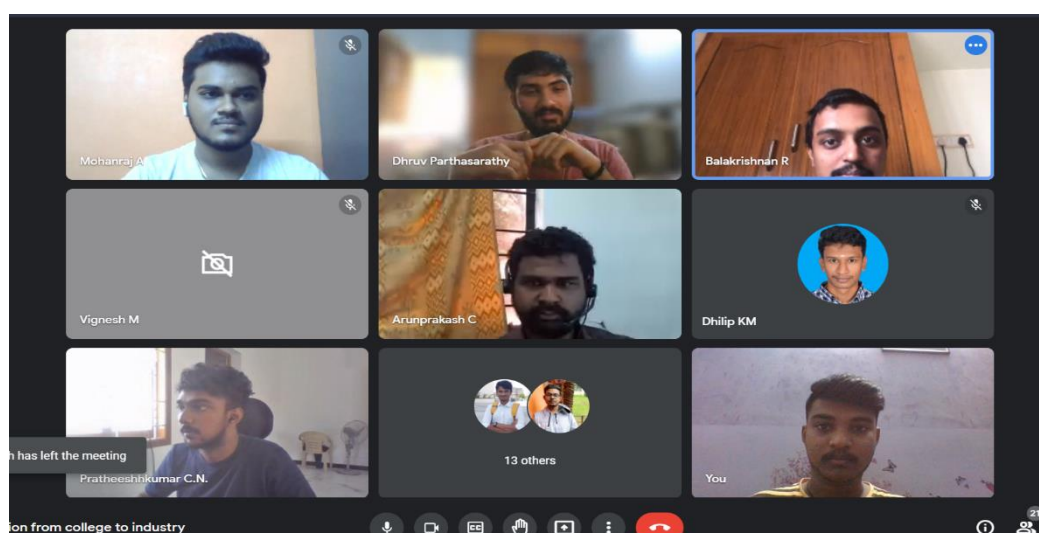
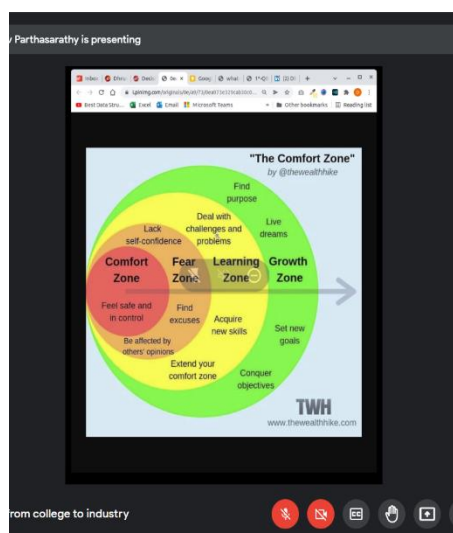
Balakrishnan started off the session by sharing his experiences once he stepped into the industry. The industry was very welcoming to him, and all the senior colleagues were more than happy to clear his doubts and guide him. Since he was on the R&D side, there were a few things he wished he had learned prior to joining like GD&T. He also urged all the juniors to be proficient in Microsoft excel and mechanical subjects such as manufacturing processes and theories of failure. Pranaav, though

from the core domain had different experiences since he was working at the manufacturing plant. He made us understand the different sectors in core i.e., R&D and manufacturing and what are the expectations from them. He highlighted that man-management and time-management will be the top-most skills that will determine the survivability of anyone working in the plant. But a common factor among both the sectors is that the age difference between newcomers and seniors might be very high and one must learn to work with such seniors.

Pratheesh continued the conversation by talking about management companies especially analytics role. Management companies don't have the problem of age gap as in core companies. He added that the work environment is much lighter, and one can easily seek help from their seniors. Of course, a lot of new tools must be learned to take up analytics role. One more important aspect that one must have been the ability to converse well in English. Next, Deva Prashanth shared his experiences working in a start-up and he explained the dynamics of a start-up and how a hierarchy doesn't exist in a start-up.

Next up, Vignesh shared his experiences stepping into the IT industry which is totally irrelevant to what we had studied for 4 years. Both Dhruv and Vignesh had same views regarding IT industry. One must be accountable and learn to speak to different types of people, because as freshers most of our colleagues will be our seniors and we must be careful while dealing with them. We should not only do the work given to us but work in other projects as well to gain exposure.

Later everyone shared their experiences and views on the Work-from-home scenario and there were varied opinions. The meeting ended with as Q&A session.



## Research news & Forthcoming events

### Project Proposal Submission

Source: [SERB Call for Proposals 2022.pdf](#)

	Programs/ Schemes	Call opening date	Call closing date
1.	Start-up Research Grant (SERB-SRG)	01-02-2022 (Tuesday)	01-03-2022 (Tuesday)
2.	Core Research Grant (SERB-CRG)	01-02-2022 (Tuesday)	18-04-2022 (Monday)
3.	Teachers Associateship for Research Excellence (SERB-TARE)	10-02-2022 (Thursday)	15-03-2022 (Tuesday)
4.	SERB-MATRICES	23-02-2022 (Wednesday)	22-03-2022 (Tuesday)
5.	Scientific and Useful Profound Research Advancement (SERB-SUPRA)	11-04-2022 (Monday)	10-05-2022 (Tuesday)
6.	Accelerate Vigyan – ABHYAAS (For Winter Events)	02-05-2022 (Monday)	31-05-2022 (Tuesday)
7.	National Postdoctoral Fellowship (SERB-NPDF)	02-05-2022 (Monday)	01-06-2022 (Wednesday)
8.	Empowerment and Equity Opportunities for Excellence in Science (SERB-EMEQ)	01-06-2022 (Wednesday)	30-06-2022 (Thursday)
9.	Science and Technology Award for Research (SERB-STAR)	15-06-2022 (Wednesday)	28-07-2022 (Thursday)
10.	Technology Translation Award (SERB-TETRA)	04-07-2022 (Monday)	03-08-2022 (Wednesday)
11.	SERB International Research Experience (SERB-SIRE)	01.08.2022 (Monday)	30.08.2022 (Tuesday)
12.	Promoting Opportunities for Women in Exploratory Research (SERB-POWER)	01-09-2022 (Thursday)	30-09-2022 (Friday)
13.	National Science Chair	01-09-2022 (Thursday)	31-10-2022 (Monday)



## Call for Ignition Grants titled "Technology-based Energy Solutions: Innovations for Net Zero"

Last date for submission of the project proposal: **22-Feb-2022**

<https://dst.gov.in/sites/default/files/Innovations%20for%20Net%20Zero.pdf>

**Department of Biotechnology**  
**Joint Projects under UK-INDIA COVID-19 Partnership Initiative**

Last date for submission of the project proposal: **05-05-2022**

<http://dbtindia.gov.in/latest-announcement/announcement-joint-projects-under-uk-india-covid-19-partnership-initiative>

## Conference with Scopus/SCI Publication

**International Conference on Processing and Characterization of Materials  
ICPCM - 2022**

[ICPCM 2022 \(google.com\)](https://www.google.com)



<https://apply.ssn.edu.in/>

pgadmissions@ssn.edu.in

Phone: 044 - 2441 1656 / 2441 6474



## Inspiring Life Stories

### Change

Once upon a time, there was a king who ruled a prosperous country. One day, he went for a trip to some distant areas of his country. When he was back to his palace, he complained that his feet were very painful, because it was the first time that he went for such a long trip, and the road that he went through was very rough and stony. He then ordered his people to cover every road of the entire country with leather.

This would need thousands of cows' skin and would cost a huge amount of money. Then one of his wise servants dared himself to tell the king, "Why do you have to spend that unnecessary" amount of money? Why don't you just cut a little piece of leather to cover your feet?"



The king was surprised, but he later agreed to his suggestion, to make a "shoe" for himself.

**Moral:** To make this world a happy place to live, you better change yourself - your heart; and not the world.

**Source:** [Do Not Change The World, Moral Stories, Short Stories \(english-for-students.com\)](http://Do Not Change The World, Moral Stories, Short Stories (english-for-students.com))

**Pic source:** [Time For Change Representing At Present And Changing Stock Photo, Picture And Royalty Free Image. Image 32809869. \(123rf.com\)](http://Time For Change Representing At Present And Changing Stock Photo, Picture And Royalty Free Image. Image 32809869. (123rf.com))

## Corporate Wisdom

### From the desk of Ramki -- Aspire to Inspire

Happy Morning

One day all the employees reached the office and they saw a big advice on the door on which it was written:

Yesterday the person who has been hindering your growth in this company passed away. We invite you to join the funeral in the room that has been prepared in the gym.



In the beginning, they all got sad for the death of one of their colleagues, but after a while they started getting curious to know who that man was who hindered the growth of his colleagues and the company itself.

The excitement in the gym was such that security agents were ordered to control the crowd within the room. The more people reached the coffin, the more the excitement heated up. Everyone thought: Who is this guy who was hindering my progress? Well, at least he died!

One by one the thrilled employees got closer to the coffin, and when they looked inside it, they suddenly became speechless. They stood nearby the coffin, shocked and in silence, as if someone had touched the deepest part of their soul. There was a mirror inside the coffin: everyone who looked inside it could see himself.

There was also a sign next to the mirror that said:

- *There is only one person who is capable to set limits to your growth: IT IS YOU.*
- *You are the only person who can revolutionize your life.*
- *You are the only person who can influence your happiness, your realization and your success.*
- *You are the only person who can help yourself.*

***YOUR LIFE DOES NOT CHANGE WHEN YOUR BOSS CHANGES, WHEN YOUR FRIENDS CHANGE, WHEN YOUR PARENTS CHANGE, WHEN YOUR PARTNER CHANGES, WHEN YOUR COMPANY CHANGES. YOUR LIFE CHANGES WHEN YOU CHANGE, WHEN YOU GO BEYOND YOUR LIMITING BELIEFS, WHEN YOU REALIZE THAT YOU ARE THE ONLY ONE RESPONSIBLE FOR YOUR LIFE***

The most important relationship you can have, is the one you have with yourself. Examine yourself, watch yourself. Don't be afraid of difficulties, impossibilities and losses be a winner, build yourself and your reality.

The world is like a mirror: it gives back to anyone the reflection of the thoughts in which one has strongly believed. The world and your reality are like mirrors laying in a coffin, which show to any individual the death of his divine capability to imagine and create his happiness and his success.

It's the way you face Life that makes the difference!

If an egg is broken from outside force... life ends. If an egg is broken from inside force... life begins. Great things always begin from our inside.

#WishingMostAndMore

Have a great week & Wonderful day!

R. Ramakrishnan

Email: [r.ramakrishnan@gmrgroup.in](mailto:r.ramakrishnan@gmrgroup.in)



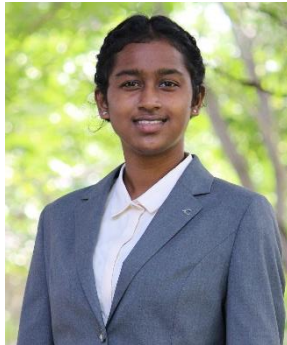
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