



# SAI RAM ENGINEERING COLLEGE

An Autonomous Institution | Affiliated to Anna University & Approved by AICTE, New Delhi  
Accredited by NBA and NAAC 'A+' | ISO 21001 : 2018 (EOMS) Certified by BIS and NIRF ranked institution  
Sai Leo Nagar, West Tambaram, Chennai - 600 044. [www.sairam.edu.in](http://www.sairam.edu.in)



## DEPARTMENT OF MECHANICAL ENGINEERING



Name	: Dr.G.SHANMUGASUNDAR						
Designation	: Professor & Dean R&D						
Email	: <a href="mailto:shanmugasundar.mech@sairamit.edu.in">shanmugasundar.mech@sairamit.edu.in</a>						
Qualification	: B.E., M.E, PhD						
Specialization	: Mechanical Engineering						
Research Interest	: Robotics, Mechatronics System Design, CAM & CNC optimization						
Experience in years	: Teaching UG		14	PG	06	Industry	Nil
No. of Workshop/Conferences/							
FDP / Webinar attended	: Workshop & Webinar		25	Conferences	16	FDP	16
No. of Workshop/Conferences/							
FDP/ Webinar Organized	: Workshop & Webinar		22	Conferences	06	FDP	02

Professional Membership	<ol style="list-style-type: none"><li>1. Life member ISTE- (LM- 57272)</li><li>2. Fellow Member IEI – (F-1280645)</li><li>3. Life Member in Robotic Society Of India</li><li>4. Life Member in Association for Machines and Mechanisms</li><li>5. Annual Member in IEEE Robotics and Automation Society ( MNo: 93884135)</li><li>6. Annual Member SAE – ( Mno: 7200410082)</li><li>7. Life Member Indian Welding Society ( IWS) – (L01999)</li></ol>
Publications	National : 04
	International: 21
	Book : 01
Research Funded Projects	04 – (DST –TEDP , DST – EAC , IIC mentor mentee program) as Co-Coordinator
Consultancy	01

Patents	07
Academic Achievements	<p>Academic Project funded by Tamilnadu State Council Science and technology 02 Times.</p> <p>Appreciation reward for 100 % results</p>
Recognitions & Honors	<ul style="list-style-type: none"> <li>• IEI – KLC Secretary.</li> <li>• IEEE – Robotics and Automation Society student branch Counselor</li> <li>• Best Paper Presentation awards in conferences</li> <li>• Journal Editor &amp; reviewer.</li> <li>• Acting as Resource person/Session Chair in FDPs.</li> <li>• Member –Results passing Board and valuation Board Chairman .</li> <li>• MOE's IIC – Convener</li> <li>• Board of studies (BOS) member in ROBOARM Company .</li> </ul>
Any Other Information	<ol style="list-style-type: none"> <li>1. Co- Coordinator Innovation and Entrepreneurship Development Centre (IEDC) Funded by DST , New Delhi .</li> <li>2. Coordinator for MOE – IIC Mentor mentee Scheme</li> <li>3. Nodal Officer - NIRF – Ranking Frame work.</li> <li>4. Nodal Officer- ARIIA – ATAL Innovation Ranking.</li> <li>5. Propagator for Entrepreneurship Club.</li> <li>6. Over all Coordinator for NACC Criteria3.</li> <li>7. Institute coordinator for IIRS Govt.of India– Online Courses.</li> </ol>

### List of Publications:

1. **Shanmugasundar G**, Vanitha M, Čep R, Kumar V, Kalita K, Ramachandran M. A Comparative Study of Linear, Random Forest and AdaBoost Regressions for Modeling Non-Traditional Machining. *Processes*. 2021; 9(11):2015. <https://doi.org/10.3390/pr9112015>.
2. Pradhan, R., **Shanmugasundar, G.**, Vanitha, M., Krishnan, G. S., & Sivam, S. P. S. S. (2021). A critical investigation on the performance of bael biodiesel in CI engine. *AIP Conference Proceedings*, 2417, 060001. AIP Publishing LLC. <https://doi.org/10.1063/5.0072637>
3. Krishnan, G. S., **Shanmugasundar, G.**, Vanitha, M., Pradhan, R., & Sivam, S. P. S. S. (2021). Performance analysis on mechanical/morphological properties of ramie-kenaf hybrid polymer composites. *AIP Conference Proceedings*, 2417, 020024. AIP Publishing LLC. <https://doi.org/10.1063/5.0072635>
4. **Shanmugasundar, G.**, Dharanidharan, M., Vishwa, D., & Sanjeev Kumar, A. P. (2021). Design, analysis and topology optimization of connecting rod. *Materials Today: Proceedings*, 46, 3430–3438. <https://doi.org/10.1016/j.matpr.2020.11.778>
5. **Shanmugasundar, G.**, Vanitha, M., Sai Krishnan, G., & Srinivasan, S. (2021). Investigation on the mechanical properties of newly modified polymeric fiber for structural applications. *Materials Today: Proceedings*, 46, 3439–3443. <https://doi.org/10.1016/j.matpr.2020.11.781>

6. **Shanmugasundar, G.**, Sri Sabarinath, S., Ramesh Babu, K., & Srividhya, M. (2021). Analysis of occupational health and safety measures of employee in material manufacturing industry using statistical methods. *Materials Today: Proceedings*, 46, 3259–3262. <https://doi.org/10.1016/j.matpr.2020.11.296>
7. Sai Krishnan, G., Pravin Kumar, J., **Shanmugasundar, G.**, Vanitha, M., & Sivashanmugam, N. (2021). Investigation on the alkali treatment of Demostachya Bipinnata fibers for automobile applications-A green composite. *Materials Today: Proceedings*, 43, 828–831. <https://doi.org/10.1016/j.matpr.2020.06.530>
8. **G Shanmugasundar** , M Vanitha , L Ganesh Babu , P Suresh , P Mathiyalagan , G Sai Krishnan and Mebratu Makos, 2020 , “Fabrication and analysis of mechanical properties of PVC/Glass fiber/graphene nano composite pipes” , Material Research Express , <https://doi.org/10.1088/2053-1591/abc277>
9. Krishnan, G. S., **Shanmugasundar, G.**, Vanitha, M., & Sivashanmugam, N. (2020). Mechanical Properties of Chemically Treated Banana and Ramie Fibre Reinforced Polypropylene Composites. *IOP Conference Series: Materials Science and Engineering*, 961(1), 012013. doi:10.1088/1757-899x/961/1/012013
10. Krishnan, G. S., **Shanmugasundar, G.**, Vanitha, M., Srinivasan, S., & Suresh, G. (2020). Investigation on the Mechanical and Morphological Properties of Red banana/Ramie Fiber vinyl ester composites. *IOP Conference Series: Materials Science and Engineering*, 961(1), 012015. doi:10.1088/1757-899x/961/1/012015
11. Sai Krishnan G., **Shanmugasundar**, Pradhan R., Loganathan G.B. (2020) Investigation on Mechanical Properties of Chemically Treated Banana and Areca Fiber Reinforced Polypropylene Composites. In: Praveen Kumar A., Dirgantara T., Krishna P.V. (eds) *Advances in Lightweight Materials and Structures*. Springer Proceedings in Materials, vol 8. Springer, Singapore. [https://doi.org/10.1007/978-981-15-7827-4\\_27](https://doi.org/10.1007/978-981-15-7827-4_27)
12. G. Sai krishnan, S.Aravindh, **G.Shanmugasundar**, M.Vanitha (2020) , Investigation of Al<sub>2</sub>O<sub>3</sub>/Oryza Sativa Oil Biodiesel on Performance and Tribological Characteristics , *Test Engineering and management* , Vol .83. PP – 942-946 .
13. **G Shanmugasundar**, M Dharanidharan, D Vishwa, A Jayaprakash and P Abimanyu , 2020, “Design and Finite Element Analysis of Prosthetic Hand Controlled by Wireless Gestures for Differently-abled People” *IOP Conference Series: Materials Science and Engineering* 923 (2020) 012019 IOP Publishing, Doi:10.1088/1757-899X/923/1/012019.
14. **G Shanmugasundar**, M Dharanidharan, D Vishwa, A Jayaprakash and P Abimanyu , 2020, Development and Performance Analysis of Wireless Operated Prosthetic Robotic Hand, *Mukt Shabd Journal – ( UGC Approved)* , Vol IX (IV) , PP- 2101-2106 . DOI:09.0014.MSJ.2020.V9I4.0086781.610.
15. **G Shanmugasundar**, M Dharanidharan, D Vishwa, A Jayaprakash and P Abimanyu , 2020, Design and Development of Prosthetic Hand Controlled by Wireless Gestures for Differently-Abled People, *International Journal of Engineering and Advanced Technology (IJEAT)* , Vol 09 (4) , PP- 1132-1135. , <http://www.doi.org/10.35940/ijeat.D8074.049420>

16. **G.Shanmugasundar**, S.E.Gouthem, G.Manoj Kumar, V.Surya Prakash (2020) , Design and Development of Solar Powered Smart Irrigation System using Sensors for Agriculture Applications, Parishodh Journal,(UGC Approved), Volume IX, Issue III, pp- 5942-5947. DOI:09.0014.PARISHODH.2020.V9I3.0086781.57613.
17. **G. Shanmugasundar**, G. Fenneth Moses, S. Jayachandran, V.D. Rathnavel Subramanian and R. Rajagopalan, 2020 “Design and Fabrication of Solar Powered Multi-Purpose Agricultural Vehicle with IOT Control” , Journal of Advanced Research in Dynamical and Control Systems, Volume 12, Pages: 1928-1933.
18. **G.Shanmugasundar** , R.Yokesh , S.Yuvaranjith , R.Barath, S.Balasubramanian (2020) , Design and Fabrication of Intelligent Gas stove for women safety , International journal of pharmaceutical research , <https://doi.org/10.31838/ijpr/2020.12.02.0126>
19. **G.Shanmugasundar**, M.Dharanidharan,, D.Vishwa, P. Gokul, (2020) , Design, Modelling and Analysis of an Autonomous Ornithopter Robot for Environmental Pollution Monitoring, Interciencia Journal (ISSN: 0378-1844), 45(12) , PP- 2-10. <https://intercienciajournal.com/intercien/index.php/pdf/stream/54un4/1604942593>.
20. **G. Shanmugasundar**, P. Jagadeeshwar, S. Adithya, V. Nagappan, and M. Bhaskar, “Design, fabrication and analysis of personal vacuum assisted climber,” in *Journal of Physics: Conference Series*, 2019, vol. 1362, no. 1, doi: 10.1088/1742-6596/1362/1/012057.
21. **G. Shanmugasundar**, R. Sivaramakrishnan, S. Meganathan, and S. Balasubramani, “Structural optimization of an five degrees of freedom (T-3R-T) robot manipulator using finite element analysis,” in *Materials Today: Proceedings*, 2019, vol. 16, pp. 1325–1332, doi: 10.1016/j.matpr.2019.05.231.
22. Palanikumar, K., **Shanmugasundar**, G., & Latha, B. (2019). Role of Industry in Entrepreneurship Education: Implementation and Success Factors. <http://library.ediindia.ac.in:8181/xmlui//handle/123456789/7923>
23. S.M. Abishek, **G. Shanmugasundar**, Mathesh , Sriram 2019 ‘ Design, Analysis and Development of Autonomous Underwater vehicle ‘International Journal of Innovative Technology and Exploring Engineering (IJITEE) , Vol.09., PP 3805-3810. <https://www.ijitee.org/wp-content/uploads/papers/v9i2/A5305119119.pdf>
24. **Shanmugasundar**, G., Jagadeeshwar, P., Adithya, S., Nagappan, V., & Bhaskar, M. (2019). Design, Fabrication and Analysis Of Personal Vacuum Assisted Climber. *Journal of Physics: Conference Series*, 1362(1), 012057. doi:10.1088/1742-6596/1362/1/012057
25. **Shanmugasundar**,G., Karthikeyan, B., Ponvell, P. S., & Vignesh, V. (2019). Optimization of Process Parameters in TIG Welded Joints of AISI 304L -Austenitic Stainless Steel using Taguchi’s Experimental Design Method. *Materials Today: Proceedings*, 16, 1188–1195. doi:10.1016/j.matpr.2019.05.213
26. **Shanmugasundar**, G., Sivaramakrishnan, R., Meganathan, S., & Balasubramani, S. (2019). Structural Optimization of an Five Degrees of Freedom (T-3R-T) Robot Manipulator Using Finite Element Analysis. *Materials Today: Proceedings*, 16, 1325–1332. doi:10.1016/j.matpr.2019.05.231
27. **G. Shanmugasundar** , A. Jai Krishna , M. Harish , P. Yuan Shankar , R.Anbarasan M. Muneeswaran, (2018) , Design and Analysis of Automobile Pedal with Combined Brake and

Accelerator, IOSR Journal of Engineering (IOSRJEN) , Vol. 08, Issue 7, PP 36-40, [http://iosrjen.org/Papers/vol8\\_issue7/Version-2/F0807023640.pdf](http://iosrjen.org/Papers/vol8_issue7/Version-2/F0807023640.pdf).

28. **G.Shanmugasundar** ,S.Adithya ,V.Nagappan , P.Jagadeeshwar ,M.Bhaskar, (2018) , Design and Fabrication of Stair Climbing Wheelchair with Rocker Bogie Mechanism, IOSR Journal of Engineering (IOSRJEN), Vol. 08, Issue 7 , PP -07-10 , [https://www.iosrjen.org/Papers/vol8\\_issue7/Version-6/B0807060711.pdf](https://www.iosrjen.org/Papers/vol8_issue7/Version-6/B0807060711.pdf).
29. Jai Krishna , **G.Shanmugasundar** , P. Jagadeeshwar , V. Nagappan, (2018) , Review on Technical, procedural perspectives and Applications of Laser Additive Manufacturing Process, International Journal of Pure and Applied Mathematics, Volume 120 No. 6 ,PP- 1751-1766. <https://acadpubl.eu/hub/2018-120-6/2/129.pdf>
30. **G.Shanmugasundar** , R.Yokesh , S.Yuvaranjith , R. Barath , S.Balasubramanian, (2018) , Design and Fabrication of Eco Friendly Pedal Operated Lawn Mower for Agricultural Applications, IOSR Journal of Engineering (IOSRJEN), Vol. 08, Issue 6, PP 12-17, [https://www.iosrjen.org/Papers/vol8\\_issue6/Version-5/C0806051217.pdf](https://www.iosrjen.org/Papers/vol8_issue6/Version-5/C0806051217.pdf).
31. **G.Shanmugasundar**, G&Sivaramakrishnan, R 2017, ‘Analytical and software method of Workspace Analysis for a Seven Degrees of Freedom Inspection Robot’, International Journal of Control Theory and Applications, vol. 10, no. 11, pp. 19-28, ISSN: 0974-5572. (Impact Factor: 0.53).
32. **G. Shanmugasundar**, R. Sivaramakrishnan, and S. Balasubramani, “Method of Trajectory Generation of a Generic Robot using Bresenham’s Circle Algorithm,” *Indian J. Sci. Technol.*, vol. 9, no. 48, 2017, doi: 10.17485/ijst/2016/v9i48/108476.
33. R. Sridhar, **G. Shanmugasundar**, and A. Srithar, “A Geometrical Modular Design for Handling of LPG Cylinders using Nested Kinematic Robotic Gripper,” in *Indian Journal of Science and Technology*, 2016, vol. 9, no. 48, doi: 10.17485/ijst/2016/v9i48/108474.
34. **G. Shanmugasundar** and R. Sivaramakrishnan, “Design and analysis of a newly developed seven degree of freedom robot for inspection,” *Int. J. Control Theory Appl.*, vol. 9, no. 24, pp. 393–402, 2016.
35. **G. Shanmugasundar** and R. Sivaramakrishnan, “Computer aided modelling and simulation of a generic robot for inspection,” *Int. J. Appl. Eng. Res.*, vol. 10, no. 24, pp. 44049–44056, 2015.
36. **G. Shanmugasundar**, R. Sivaramakrishnan, R. Sridhar, and M. Rajmohan, “Computer Aided Modelling and Static Analysis of an Inspection Robot,” in *Applied Mechanics and Materials*, 2015, vol. 766–767, doi: 10.4028/www.scientific.net/amm.766-767.1055.
37. **G. Shanmugasundar**, R. Sivaramakrishnan, and M. Rajmohan, “Computer aided simulation for workspace plot of a newly designed inspection robot,” in 2014 IEEE International Conference on Computational Intelligence and Computing Research, IEEE ICCIC 2014, 2015, doi: 10.1109/ICCIC.2014.7238470.
38. **G. Shanmugasundar**, R. Sivaramakrishnan, and S. Venugopal, “Modeling, design and static analysis of seven degree of freedom articulated inspection robot,” in *Advanced Materials Research*, 2013, vol. 655–657, pp. 1053–1056, doi: 10.4028/www.scientific.net/AMR.655-657.1053.
39. **G. Shanmugasundar** and R. Sivaramakrishnan, “Software Development for an Inverse Kinematics of Seven- Degrees of Freedom Newly Designed Articulated Inspection Robot,” *Int. J. Comput. Appl.*, vol. 58, no. 18, 2012, doi: 10.5120/9384-3858.
40. **Shanmugasundar, G., & Sivaramakrishnan, R.** (2012). A Survey on Development of Inspection Robots: Kinematics Analysis, Workspace Simulation and Software Development. *International Review Of Mechanical Engineering*, 6(7), 1493-1507.

## **Patents Details:**

1. Patent Published, Patent No. 201741042997 – “Exo Skeleton Arm using Block and Tackle Mechanism” - 08.12.2017.
2. Patent granted, Patent No . 201841025468 “ An Exo Frame Structure Utilizing Electrical Actuators For Arm Rehabilitation And Effortless Load “ – “09.07.2018.
3. Patent Published, Patent No- 202041011372 “A Seven Degrees Of Freedom Serial Robotic Manipulator For Detecting And Rectifying The Weld Defect On The Circumference Of The Storage Steel Cylindrical Canister” - 27/03/2020
4. Patent published , Patent no - 202041044652 “An Automatized Load Carrying Electric Vehicle with Custom Path Navigation” - 14/10/2020.
5. Patent published , Patent no- 202141046635 , “An Automated Guided Mobile Robot With Image Recognition”, - 03/12/2021.
6. Patent published , Patent no – 202141048478, “A Robotic Device To Clean Tanks/Drums”, - 26/11/2021.
7. Patent published , Patent no 202141026318, “ An Integrated Farming Equipment With Iot Control And Photovoltaic Arrangement” - 14/06/2021.

## **National & International Conference (s) :**

1. Presented a paper in national conference on “ Recent Innovations in mechanical Engineering on 18.11.2021 through online organized by Jai Shriram Engineering College .
2. Presented a paper in national conference on “ Design and Development of Artificail Intelligent based inspection machine on 18.11.2021 through online organized by Jai Shriram Engineering College .
3. Presented a paper in International Conference on Informatics, robotics and Communication on 7/02/2020 & 08/02/2020 at PERI institute of technology.
4. Presented a paper in International Conference on Science and Innovative engineering 2019 on 24/03/2019 held at Jawahar engineering College.
5. Presented a paper & Awarded as a best research Paper in 8 <sup>th</sup> International Conference on Innovation, Entrepreneurship And Economy For Sustainable Development on 10/08/2018 & 11/08/2018 at Sri Sairam institute Management Studies .
6. Presented a paper in International Conference on Innovations & Discoveries in Science, engineering & technology ( ICIDSET- 18) on 17 /04/2018 & 18/04/2018 at KCG College of Technology .
7. Presented a paper in International Conference on Advances in Materials, Manufacturing and Applied Sciences (ICAMMAS"17) on 30 th and 31 stMarch, 2017 at Sri Sairam Institute of Technology.
8. Presented a paper in International Conference on Mechanical, Materials and Manufacturing

Systems – ICMMMS”16 held at Sri Sairam Engineering College on Feb,2016.

9. Presented a paper in International Conference on “Advances in materials and Manufacturing engineering” held in Sri Sairam Institute of Technology, Chennai during 19th & 20th Dec 2014.
10. Presented a paper in thirteenth Biennial Conference on Entrepreneurship held at EDI Gujarat on 20/02/2019 to 22/02/2019.

### **Programs Organized :**

1. Total no of online programs organized ( related to innovation , Entrepreneurship & technology development) = 09 ( Year 2021- 2022)
2. Total no of online programs organized ( related to innovation , Entrepreneurship & technology development) = 16 ( year 2020 -2021 )
3. Organised a one day IPR awareness program for students and faculty under MHRD IIC on 19.02.2020.
4. Organised a First Annual Innovation Festival of MHRD’s Innovation Cell ( to celebrate Innovation Day on 15th October 2019 to mark Dr. A. P. J. Abdul Kalam’s Birth Anniversary ).
5. Served in the part of organizing committee for the One day Workshop on “ Women Entrepreneurship “ at CEG , Anna university, Chennai On 20/03/2019 .
6. Organised A Three Days Entrepreneurship Awareness Camp (EAC) Funded By Entrepreneurship Institute Of India Gujarat, Govt.of. India , under DST NIMAT Project Schemes from 10/09/2018 to 12/09/2018.
7. Served in the part of organizing committee for the One day Workshop on “ Women Entrepreneurship “ at CEG , Anna university, Chennai On 10/03/2018 .
8. Serviced as Organizing Co-Secretary in AICTE ISTE sponsored refreshed Induction program on “ Modern Pedagogy for Engineering teachers in Making digital India ” from 21.05.2018 to 26.05.2018 .
9. Serviced as Organizing Co-Secretary in AICTE sponsored two weeks Faculty Development Programme on BioDegradable, Green and Nano Composites for Industrial Applications: ManufacturingMethodologies and Properties from 20 th October to 02nd November, 2017 at Sri SaiRam Institute of Technology, Chennai-44.
10. Serviced as a coordinator for “ Technology Based Entrepreneurship Training Program On Computer Numerical Controlled Machines And Operations (TEDP) “ from DST NIMAT – EDI INDIA from 05.09.2016 to 15.10.2016.
11. Organised A Three Days Entrepreneurship Awareness Camp (EAC) Funded By Entrepreneurship Institute Of India Gujarat, Govt.of. India , under DST NIMAT Project Schemes from 06/07/2016 to 09/07/2016.
12. Organised A Three Days Entrepreneurship Awareness Camp (EAC) Funded By Entrepreneurship Institute Of India Gujarat, Govt.of. India , under DST NIMAT Project Schemes from 20/10/2016 to 22/10/2016.
13. Anna University approved seven days Faculty Development Program on “Kinematics of

machinery “from 5-12th December 2016, at Sri Sai Ram Institute of Technology, Chennai- 44.

14. Serviced as a co-coordinator in DST –NIMAT sponsored 6 weeks Technology Based Entrepreneurship Development Program(TEDP) “CNC Machining Technology and Practices for Automobile Part Manufacturing” from 05.09.2016 to 15.10.2016 at Sri Sai Ram Institute of Technology, Chennai-44.
15. Serviced as Organizing Co-Secretary in AICTE sponsored two weeks Faculty Development Programme on Processing and Characterization of Composite Materials including Natural Fibre Reinforced Composites from 18 th March to 31 st March, 2015 at Sri Sai Ram Institute of Technology.

### **Programs Attended:**

1. Total no of online programs/ Webinars attended (2021 -2022) = 18
2. Total no of online programs/ Webinars attended (2020 -2021) = 12
3. Participated in two days campus ambassador training program on entrepreneurship Development organised by MHRD IIC at RMK engineering college on 08.01.2020 & 09.01.2020.
4. Participated in First Annual Innovation festival of MHRD IIC on 11/09/2019 at AICTE head quarters, New Delhi.
5. Participated in Regional orientation Session on IIC 2.0 and ARIIA 2020 organised by MHRD IIC at VelTech Ranarajan Dr. Sagunthala R and D Institute of Science & Technology on 31/07/2019 .
6. Participated in anna university Faculty development training program on Finite element analysis from 18.09.2019 to 23.09.2019 at sri Sairam Institute Of technology Chennai.
7. Participated in ACITE Sponsored two weeks Faculty development Program on The role of Smart Materials in digital Manufacturing and fourth industrial revolution (factors for Future) at KCG College of Technology from 10/10/2019 to 23/10/2019.
8. Participated in SERB Sponsored Five days National level workshop on Advanced welding Techniques for joining Dissimilar high strength alloys for aerospace applications ( AWT 2019) on 29/04/2019 to 03/05/2019 at IITD&M kancheepuram.
9. Participated in ACITE Sponsored Five days Faculty development Program on Entrepreneurship Career Development program at sri Sairam Institute of Management studies from 08.04.2019 to 12.04.2019.
10. Participated & Guided a project in NIOT SAV under water competition held at IIT madras on 24/01/2019.
11. Participated in AICTE sponsored two weeks Faculty Development Programme on Processing and Characterization of Composite Materials including Natural Fibre Reinforced Composites from 18 th March to 31 st March, 2015 at Sri Sai Ram Institute of Technology.
12. Participated in seven days Faculty Development Programme on Engineering Mechanics Sponsored by Anna University 2/12/14 to 8/12/14 at KarpagaVinayaga college of engineering.

**13.** Participated in seven days Faculty Development Programme on “Kinematics of Machinery” at GKM College of Engineering & Technology from 1st to 8th June 2012.

### **Funds Received from AICTE,/ UGC / DST/ TNSCST, etc:**

1. Served as a Co- Coordinator and received Rs 3,00,000/- for “ Technology Based Entrepreneurship Training Program On Computer Numerical Controlled Machines And Operations (TEDP) “ from DST NIMAT – EDI INDIA.
2. Served as a program coordinator and received Rs 2,50,000/- for PMKVY course on CNC technology from AICTE .
3. Served as a Co- PI and received Rs 4,80,000/- for “ Technology Based Entrepreneurship Training Program “ funded by DST NSTEDB, Govt.of India , Delhi .
4. Served as a coordinator for MOE – IIC Funded (Rs 2,50,000/-) mentor mentee scheme.
5. Project funding of Rs 7500/- sanctioned by Tamilnadu state council for science & Technology in the year 2019-2020.  
Title of the Project : Design and fabrication of solar powered surveillance drone for women safety.
6. Project funding of Rs 7500/- sanctioned by Tamilnadu state council for science & Technology in the year 2021-2022.  
Title of the Project : Design and fabrication of smart voice controlled robotic wheel chair (VCR BOT- V1) for disabled people.