Vel Tech
Rangarajan Dr. Sagunthala
R&D Institute of Science and Technology
(Deemed to be University Estd. u/s 3 of UGC Act, 1956)

School of Mechanical and Construction

Department of Aeronautical Engineering

Specialized one credit course on

"Fundamentals of MEMS"

(10215AE102)

by

Prof. Dr. Lung- Jieh Yang,

Tamkang University, Taiwan

Held on

Date: 30 Aug 2023 to 1 Sep 2023

Vel Tech
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School of Mechanical & Construction Engineering
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Specialized Credit Course on "Fundamentals of MEMS (1 Credit)"

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TAMKANG UNIVERSITY

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Office of International Relations

Adjunct / Visiting Professor Programme

Ref.No: VTU/23-24/IHL/ 026

School: SOMC **Department:** Aero

Course Category: Industry/ Higher Institute Learning

Professor & Course Details

Name of the Professor	Prof. Dr.L J.Yang	
Designation	Professor	
University & Country	Tamkang University & Taiwan	
Course Code	10215AE102	
Course Title	Fundamentals of MEMS	
Tentative Course Duration	**From:** 30-Aug-23	**To:** 03-Sep-23
Total No. of	**Credits:** 1	**Hours:** 15
Course Content	Attached	
Mode of Delivery	ON Campus	

Vaishnavi. AG 24/07
Coordinator – Intl. Relations

Dean – Intl. Relations
Dr. P. Suresh
Dean - International Relations

Dept Coordinator

HoD
Dr. R. Jaganraj
Head of the Department
Aeronautical Engineering

Dean
Prof. Dr. N. Lenin
Dean - School of Mechanical and Construction

Dean (Academics) 25/7
Prof. Dr. A. T. Ravichandran
Dean - Academics

Vice Chancellor
Prof. S. Salivahanan
Vice Chancellor

CURRICULUM VITAE

1. *Personal data*

- Lung-Jieh Yang
- Nationality: TAIWAN, R.O.C.
- Sex：Male
- DOB: Aug. 07, 1965
- Corresponding Address: Department of Mechanical and Electro-Mechanical Engineering, TamkangUniversity, #151, Ying-Chuan Rd., Tamsui, 25137, Taipei, TAIWAN, R.O.C.
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2. *Education*

- Ph.D., Institute of Applied Mechanics, National Taiwan University, TAIWAN, R.O.C., Dec., 1996
- M.S., Institute of Mechanical Engineering, Tamkang University, TAIWAN, R.O.C., June, 1991
- B.S., Department of Aerospace Engineering, National Cheng-Kung University, TAIWAN, R.O.C., June, 1987

3. *Current position and relevant experience*

Current position： Professor, Department of Mechanical and Electro-Mechanical Engineering, Tamkang University, TAIWAN (since Aug., 2012)

Relevant experience：

- Editor-in-Chief, Tamkang Journal of Science and Engineering, ISSN 1560-6686 (since Aug. 2011)
- Adjoint Research Fellow, National Applied Research Lab, TAIWAN (Aug. 2008~Aug. 2011)

- Professor, Department of Mechanical and Electro-Mechanical Engineering, Tamkang University, TAIWAN (since Aug., 2007)
- Director, Incubation Center, Tamkang University (Aug. 2008~Jul. 2009)
- Director, Instrument and Experiment Center, Tamkang University (Aug. 2003~Jul. 2008)
- Associate Professor, Department of Mechanical and Electro-Mechanical Engineering, Tamkang University, TAIWAN (Aug., 2002~Jul., 2006)
- Assistant Professor, Department of Mechanical Engineering, Tamkang University, TAIWAN (Aug., 1997~Jul., 2002)
- Visiting Associate, Department of Electrical Engineering, California Institute of Technology, USA (Sep., 2000~Aug., 2001)

4. ***Fields of specialty (limit to fields related to research)***
   - MEMS (micro electro mechanical systems)
   - Micro Aerial Vehicles

5. ***Major awards and honors***
   - IEEE *International Conference on Nano/Micro Engineered and Molecular Systems* (IEEE NEMS), TPC members: 2009-2012
   - Co-Chair, The 10th International Heat Pipe Symposium, Nov. 6-9, 2011.
   - Tamkang Research Awards: 1998, 2000, 2002-2012
   - Best Student Paper Award (Adviser), 2009 International Conference on Mechatronic System of Integration and Application, Tainan, Dec. 4-5, 2009.
   - Best Paper Award, The 10th Conference on Nano Engineering and Micro System Technology of Taiwan, Nov. 30-Dec. 1, 2006.
   - Best Student Paper Award (Adviser), The Third Asia-Pacific Conference On Transducers (APCOT-2006), Singapore, June 25-28, 2006.
   - NSC Research Awards: 1998.

Significant project-related publications in the past five years, including: journal papers, patents, periodical articles, or books, etc.

Journal papers:

1. Lung-Jieh Yang, Chung-Yu Kao, and Chin-Kwang Huang, 2012, "Development of flapping ornithopters by precision injection molding," ***Applied Mechanics and Materials***, v. 163, pp. 125-132.
2. Lung-Jieh Yang, A-Fu Kuo, and Cheng-Kuei Hsu, 2012, "Wing stiffness on light flapping micro aerial vehicles," ***Journal of Aircraft***, v. 49, n. 2, pp. 423-431.Lung-Jieh Yang and Tzu-Yuan Lin, 2011, "A PDMS-based thermo-pneumatic micropump with parylene inner walls," ***Microelectronic Engineering***, v. 88, n. 8, pp. 1894-1897.
3. Lung-Jieh Yang, 2010, "On gas-permeation in PDMS," ***Journal of Micromechanics and Microengineering***, v. 20, n. 11, 115033.
4. Yung-Chiang Chung, Li-Wei Lai, Lung-Jieh Yang, and Wei-Jie Liao, 2010 "Comparison of different metal film thicknesses of COC-substrate polymerase chain reaction chips with single-side and double-side heaters,"***Journal of Micro/Nanolithography, MEMS, and MOEMS***, v. 9 (3), 031006.
5. Yung-Chiang Chung,Guo-Yuan Hess, Fu-Wen Yeh, Hsieh-Cheng Han,Chien-Yuan Chen, Ching-Jiun Lee, Horn-Jiunn Sheen, and Lung-Jieh Yang, 2010, "Fabrication and testing of surface ratchets primed with hydrophobic parylene and hexamethyldisilazane for transporting droplets," ***Journal of Micro/Nanolithography, MEMS, and MOEMS***, v. 9 (1), 013035.
6. Lung-Jieh Yang, Cheng-Kuei Hsu, Hsieh-Cheng Han, and Jr-Ming Miao, 2009, "A light flapping micro-aerial-vehicle using electrical discharge wire cutting technique,"***Journal of Aircraft***, v. 46, n. 6, pp. 1866-1874.
7. Lung-Jieh Yang, Cheng-Kuei Hsu, Chun-Yu Kao, Fu-Yuen Hsiao, and Chao-Kung Feng, 2009, "Weight reduction of flapping micro aerial vehicles using electrical discharge wire machining," ***Journal of Aeronautics, Astronautics and Aviations-Series A***, v. 41, n. 3, pp. 165-172.
8. Lung-Jieh Yang, 2009, "Gas permeation in PDMS in-situ monitoring by silicon pressure sensors," ***Advanced Materials Research***, v. 74, pp. 113-116.
9. P.-L. Lu, C.-L. Fan, L.-J. Yang, C.-W. Lin, F.-S. Jaw, 2009, "Novel fabrication of full parylene-isolated neuroprobes,"***Journal of Bionanoscience***, v. 3, n. 1, pp. 58-60.
10. Yu-Cheng Ou, Chih-Wen Hsu, Lung-Jieh Yang,Hsieh-Cheng Han, Yi-Wen Liu, and Chien-Yuan Chen, 2008, "Attachment of tumor cells to the micropatterns of glutaraldehyde (GA)-crosslinked gelatin," ***Sensors and Materials***, v. 20, n. 8, pp. 435-446.
11. Ling-ChihChien, Nan-Fu Chiu, Adam Shih-Yuan Lee, Lung-JiehYang,Yao-Joe Yang, Kuang-Chong Wu, Chih-Kung Lee, and Chii-Wann Lin, 2007, "Electrochemical detection of high-sensitivity C-reactive protein based on biomimic design of electroactive nanoassembly multilayers,"***Journal of Bionanoscience***, v. 1, n. 1, pp. 44–50.
12. Lung-Jieh Yang, Hsin-Hsiung Wang, Po-Chiang Yang, Y.-C. Chung, and T.-S. Shen, 2007, "New packaging method using PDMS for piezoresistive pressure sensors," ***Sensors and Materials***, v. 19, n. 7, pp. 391-402.

13. Lung-Jieh Yang, C.-K. Hsu, J.-Y. Ho, and C.-K. Feng, 2007, "Flapping wings with PVDF sensors to modify the aerodynamic forces of a micro aerial vehicle," ***Sensors and Actuators A: Physical***, v. 139, pp. 95-103.
14. Lung-Jieh Yang, K.-C. Ko, and J.-M. Wang, 2007, "A circular microchannel integrated with embedded spiral electrodes using for fluid transportation,"***Sensors and Actuators A: Physical***, v. 139, pp. 172-177.
15. Yan-You Lin, Chi-Wann Lin, Lung-Jieh Yang, and An-Bang Wang, 2007, "Micro-viscometer based on electrowetting on dielectric," ***ElectrochimicaActa***, **v. 52, pp. 2876-2883.**
16. Lung-Jieh Yang, C.-K. Hsu, C.-K. Feng, J.-Y. Ho, G.-H. Feng, and H.-M. Shih, 2007, "A flapping MAV with PVDF-parylene composite skin," ***Transactions of the Aeronautical and Astronautical Society of the Republic of China***, v. 39, n. 3, pp. 195-202.
17. Lung-Jieh Yang and Kuan-Chun Liu, 2007, "Surface tension-driven microvalves with large rotating stroke," ***Tamkang Journal of Science and Engineering***, v. 10, n. 2, pp. 141-146.
18. Lung-Jieh Yang, Hsin-Hsiung Wang, Jiun-Min Wang, Kuan-Chun Liu and Kai-Chung Ko, 2006, "Buckled-type valves integrated by parylene micro-tubes," ***Sensors and Actuators A: Physical***, Vol. 130-131, pp. 241-246.
19. Lung-Jieh Yangand Yu-Cheng Ou, 2005, "The micro patterning of glutaraldehyde (GA)-crosslinked gelatin and its application to cell-culture," ***Lab on a Chip***, Vol. 5, No. 9, pp. 979-984.
20. C. L. Dai, H. J. Peng, M. C. Liu, C. C. Wu, H. M. Hsu, L. J. Yang, 2005, "A micromachined microwave switch fabricated by the complementary metal-oxide semiconductor post-process of etching silicon dioxide," ***Japanese Journal of Applied Physics***, Vol. 44, No. 9A, pp. 6804-6809.
21. Lung-Jieh Yang,Hsin-Hsiung Wang, Kuan-Chun Liu and Kai-Chung Ko, 2005, "The bowed-type parylene valves," ***Tamkang Journal of Science and Engineering***, v. 8, n. 3, pp. 245-248.
22. Jiun-Min Wang and Lung-Jieh Yang, 2005, "Electro-hydro-dynamic (EHD) micropumps with electrode protection by parylene and gelatin," ***Tamkang Journal of Science and Engineering***, v. 8, n. 3, pp. 231-236.
23. Wei-Chih Lin and Lung-Jieh Yang, 2005, "A liquid-based gravity-driven etching-stop technique and its application to wafer level cantilever thickness control of AFM probes", ***Journal of Micromechanics and Microengineering***, v. 15, n. 5, pp. 1049-1054.
24. C.-L. Dai, H.-J. Peng, M.-C. Liu, C.-C. Wu, L.-J. Yang, 2005, "Design and fabrication of RF MEMS switch by the CMOS process," ***Tamkang Journal of Science and Engineering***, v. 8, n. 3, pp. 197-202.
25. Lung-Jieh Yang, Chen-Chun Lai, Ching-Liang Dai and Pei-Zen Chang, 2005, "A piezoresistive micro pressure sensor fabricated by commercial DPDM CMOS process," ***Tamkang Journal of Science and Engineering***, v. 8, n. 1., pp. 67-73.

26. Lung-Jieh Yang, Y.-T. Chen, S.-W. Kang and Y.-C. Wang, 2004, "Fabrication of SU-8 embedded microchannels with circular cross- section," ***International Journal of Machine Tools and Manufacture***, V. 44, pp. 1109-1114.
27. Lung-Jieh Yang, Tze-Jung Yao and Yu-Chong Tai, 2004, "The marching velocity of the capillary meniscus in a microchannel", ***Journal of Micromechanics and Microengineering***, v. 14, n. 2, pp. 220-225.
28. Lung-Jieh Yang, Jiun-Min Wang and Yu-Lin Huang, 2004, "The micro ion drag pump using ITO electrodes to resist aging", ***Sensors and Actuators A: Physical***, v.111, n.1, pp.118-122.
29. C.S. Chen, L.J. Yang and C.F. Chou, 2003, "A study of viscous air damping in laterally oscillating micro comb structures", ***Transactions of the Aeronautical and Astronautical Society of the Republic of China***, v. 35, n.1, pp.99-105.
30. Lung-Jieh Yang, W.-Z. Lin, T.-J. Yao and Y.-C. Tai, 2003, "Photo-patternable gelatin as protection layers in surface micromachinings", ***Sensors and Actuators A:Physical***, v.103, n.1-2, pp.284-290.
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35. Lung-Jieh Yang, Tsung-Wei Huang and Pei-Zen Chang, 2001, "CMOS microelectromechanical bandpass filters,"***Sensors and Actuators A: Physical,*** v. 90, n. 1-2, pp. 148-152.
36. Lung-Jieh Yang,K.-Y. Hsieh, J.-H. Chiou, J.-Y. Chen, C.-L. Chang and P.-Z. Chang, 1999, "Fabrication of 3-D microcoils with ferromagnetic cores using a standard CMOS process," ***Sensors and Materials***, v. 11, n. 6, pp. 359-367.
37. Pei-Zen Chang and Lung-Jieh Yang, 1998, **"A method using V-grooves to monitor the thickness of silicon membrane with μm resolution,"** *Journal of Micromechanics and Microengineering***,** v. 8, n. 3, pp. 182-187.
38. Yang, L.-J., Chang, P.-Z., Chiang, C.-C., 1997, "**The application of V-groove slot-array method to the piezoresist1ve pressure sensors,**" *Journal of the Chinese Institute of Engineers, Transactions of the Chinese Institute of Engineers,Series A*, v. 20, n. 3, pp. 335-341.
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Conference papers:

1. Lung-Jieh Yang, Aug. 19-24, 2012, "Wingtip trajectory of a flapping micro-air-vehicle in its forward flight," the 23rd International Congress of Theoretical and Applied Mechanics (ICTAM2012), Beijing, China, FS-06-010
2. L.-J. Yang, C.-Y. Kao, and C.-K. Huang, Mar. 23-25, 2012, "Development of flapping ornithopters by precision injection molding," Proc. of the 9th International Conference on History of Mechanical Technology and Mechanical Design, Tainan, Taiwan, pp. 123-130
3. L.-J. Yang and B.-H. Chen, Mar. *5-8, 2012,* "Blood vessels by fractal gelatin," The 7th IEEE International Conference on Nano/Micro Engineered and Molecular Systems (IEEE NEMS 2012), Kyoto, Japan, pp. 242-245
4. L.-J. Yang et al., Nov. 6-9, 2011, "An ultra-small Wankel engine by MEMS process," The 10th International Heat Pipe Symposium, Tamsui, Taiwan, pp.272-276
5. L.J. Yang, C.W. Hsu, and Y.C. Ou, "The minimum time estimation for initiating tumor-cell attachment," June 5-9, Technical Digest of the 16th International Conference on Solid-State Sensors, Actuators and Microsystems (Transducers '11), Beijing, China, pp. 2386-2389, 2011
6. L.J. Yang, I.C. Huang, Y.S. Chen, W.T. Tang, and A.B. Wang, "A parylene-LED wingbeating indicator for visual remote sensing," June 5-9, Technical Digest of the 16th International Conference on Solid-State Sensors, Actuators and Microsystems (Transducers '11), Beijing, China, pp. 422-425, 2011
7. A-Fu Kao, Lung-Jieh Yang, Fu-Wen Yeh, *Feb. 20-23, 2011,* "Fractal grooves applied to passive micro-mixers," The 6th IEEE International Conference on Nano/Micro Engineered and Molecular Systems, IEEE NEMS 2011, Kaohsiung, Taiwan
8. Lung-Jieh Yang, *Chia-Chan Lee, Po-Hung Chen, Chih-Wen Hsu, Feb. 20-23, 2011,* "Confined fractal patterns in gelatin," The 6th IEEE International Conference on Nano/Micro Engineered and Molecular Systems, IEEE NEMS 2011, Kaohsiung, Taiwan
9. L.-J. Yang and T.-Y. Lin, Sep. 19-22, 2010, "A PDMS-based thermopneumaticmicropump with parylene inner walls," MNE 2010, Genoa (Italy)
10. L.-J. Yang, J.-M. Maio, A.-F. Kuo, and C.-K. Hsu, Jun. 28-Jul.1, 2010, "Effect of flexural stiffness on the aerodynamic forces of flapping MAVs," The 28th AIAA Applied Aerodynamics Conference, Chicago (art. no. AIAA 2010-5077)
11. K.-F. Chang, Y.-C. Tsai, W. -P. Shih, and L.-J. Yang, Jan. 24-28, 2010, "An electro-active nano-valve array for reusable drug delivery system," Proceeding of the 23rd IEEE MEMS（**MEMS'10**）, Hongkong, pp. 1039-1042
12. Yang, L.-J., Jan. 20-23, 2010, "Gas permeation in PDMS monitored by on-site pressure sensors," The 5th IEEE International Conference on Nano/Micro Engineered and Molecular Systems, IEEE NEMS 2010, Xiamen, China, pp. 348-351
13. Yi-Shao Chen , Pei-Chun Weng, Po-Hung Chen, and Lung-Jieh Yang, 4-5 Dec, 2009, "Flexural stiffness effect on lift force of flapping micro aerial vehicles,"Proc. of 2009 International Conference on Mechatronic System of Integration and Application

(ISBN 978-986-02-1190-0), Tainan, Taiwan, pp. 132-137.**(Best Student Paper Award-Silver medal)**

14. Ou, Y.-C., Hsu, C.-W., Yang, L.-J., Han, H.-C., and Chen, C.-Y., 18-21, Oct., 2009, "A cell culture system with better spatial and time resolution," Proc. of the 3rd IEEE International Conference on Nano/Molecular Medicine and Engineering (NanoMed 2009), Tainan, Taiwan, pp. 89-93
15. M.-D. Wu, Y.-C. Tsai, J.-J. Chen, W.-P. Shih, S.-H. Chang, P.-Z. Chang, J.-T. Huang, and L.-J. Yang, Jul., 2009, "Rapid dielectrophoresis assembly of single carbon nanocoil on an AFM probe tip," Technical Digest of the 15th International Conference on Solid-State Sensors, Actuators and Microsystems (**Transducers '09** - Denver), pp. 2250-2253
16. Y.-C. Tsai, N.-F. Chiu, P.-C. Liu, Y.-C Ou, H.-H. Liao, Y.-J. Yang, L.-J. Yang, U. Lei, F.-S. Chao, S.-S. Lu, C.-W. Lin, and W. -P. Shih, Jan. 25-29, 2009, "Fabrication processes of integrated multi-analyte biochip system for implantable applications", Proceeding of the 22nd IEEE MEMS（**MEMS'09**）, Sorrento, Italy, pp. 204-207
17. Ou, Y.-C., Hsu, C.-W., Yang, L.-J., Han, H.-C., Liu, Y.-W., Chen, C.-Y., 2009, "The micropatterns of glutaraldehyde-crosslinked gelatin as ECM for attachment of tumor cells," 4th IEEE International Conference on Nano/Micro Engineered and Molecular Systems, NEMS 2009, art. no. 5068585, pp. 314-318
18. Yeh, F.-W., Yang, L.-J., Hess, G.-Y., Lee, C.-J., Chu, C.-C., Sheen, H.-J., 2009, "The arrowed surface ratchets with hydrophobic parylene for droplet transportation," 4th IEEE International Conference on Nano/Micro Engineered and Molecular Systems, NEMS 2009, art. no. 5068595, pp. 359-362
19. L.-J. Yang, Cheng-Kuei Hsu, Fu-Yuen Hsiao, Yung-Kang Shen, 5-8, Jan., 2009, "A micro-aerial-vehicle (MAV) with figure-of-eight flapping induced by flexible wing frames," 47th AIAA Aerospace Science Meeting, Orlando, USA (art. no. AIAA-2009-0875).
20. L.-J. Yang and Cheng-Kuei Hsu, 24-30, Aug., 2008, "A biomimetic figure-of-eight flapping induced by flexible wings," the 22nd International Congress of Theoretical and Applied Mechanics (ICTAM-2008), Adelaide, Australia.
21. L.-J. Yang et al., Jun. 23-26, 2008, "A biomimetic figure-of-eight flapping of micro aerial vehicles (MAVS) illuminated by LEDS," **APCOT-2008**, Tainan, TAIWAN, p. 145.
22. Lin, T.-Y., Ou, Y.-C., Yang, L.-J., 2008, "**A thermopneumaticvalvelessmicropump with PDMS-based nozzle/diffuser structure for microfluidic system,**" *2008 Proceedings of the ASME Micro/Nanoscale Heat Transfer International Conference, MNHT 2008*, PART A, pp. 293-296
23. Lung-Jieh Yang,Cheng-Kuei Hsu, Chao-Kang Feng, H.-M. Shih, G.-H. Feng and M.-W. Gao, June 10-14, 2007, "Smart flapping wings with a PVDF sensor to modify aerodynamic performance of a micro UAV," Technical Digest of the 14th International Conference on Solid-State Sensors, Actuators and Microsystems (Transducers '07 - Lyon), pp. 1705-1708

24. Pen-Li Lu, Chu-Lin Fan, Lung-Jieh Yang, Chii-Wan Lin, Yao-Joe Yang and Fu-Shan Jaw, Jan. 16-19, 2007, "Completely parylene-coated neuroprobe for chronic recording," 2nd IEEE NEMS, paper ID: 74, Bangkok, Thailand.
25. Jiun-Min Wang and Lung-Jieh Yang, Jan. 16-19, 2007, "EHD micro-boat," 2nd IEEE NEMS, paper ID: 174, Bangkok, Thailand.
26. K.-C. Ko, K.-Y. Ho, H.-H. Wang and Lung-Jieh Yang, Jun. 25-28, 2006,"A circular microchannel integrated with embedded spiral electrodes using for fluid transportation,"The 10th Conference on Nano Engineering and Micro System Technology of Taiwan, Nov. 30, 2006., Hsin-Chu, p.165 **(Best Paper Award)**
27. Jiun-Min Wang and Lung-Jieh Yang, Jun. 25-28, 2006, "Zeta-potential effect on EHD flows," **APCOT-2006**, Singapore, p.159. (C-28)
28. J.-M. Wang, Y.-J. Lin, K.-C. Ko, H.-H. Lin, Y.-C. Ou, L.-J. Yang, C.-W. Lin, Y.-J. Yang and W.-C. Lin, Jun. 25-28, 2006,"Design and fabrication of a diaphragm type thermo-buckled microactuators," **APCOT-2006**, Singapore, p. 265 (AT-A0267)
29. C.-K. Hsu, J.-Y. Ho, G.-H. Feng, H.-M. Shih and Lung-Jieh Yang, Jun. 25-28, 2006, "A flapping MAV with PVDF-parylene composite skin," **APCOT-2006**, Singapore, p. 253 (SASN-A0019)**Best Student Paper Award- poster category.**
30. Hsin-Hsiung Wang, Chun-Wei Hsu, Wei-Hao Liao, Lung-Jieh Yang and Ching-Liang Dai, Jan. 22-26, 2006, "Micro pressure sensors of 50 um size fabricated by a standard CMOS foundry & a novel post process," Proc. of the 19TH IEEE MEMS **(MEMS'06)**, Istanbul, Turkey, pp. 578-581.
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35. Lung-Jieh Yang,Kuan-Chun Liu and Kai-Chung Ko, June, 2005, "Buckled-type valves integrated byparylene micro-tubes," Technical Digest of the 13th International Conference on Solid-State Sensors, Actuators and Microsystems (Transducers '05 - Seoul), pp. 656-659
36. Wei-Chih Lin, Lung-Jieh Yang et al., Jan. 30-Feb.02, 2005, "A liquid-based gravity-driven etching-stop technique and its application to wafer level cantilever thickness control of AFM probes," Proc. of the 18TH IEEE MEMS conf. **(MEMS'05)**, Miami,

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39. J.-M. Wang, H.-H. Lin and Lung-Jieh Yang, 2004/07, "A new method of anti-stiction for parylene MEMS process," ICEE/APCOT-2004 (Asia Pacific Conference on Transducers), Sapporo, Japan, pp. 563-567.

40. H.-H. Wang, P.-C. Yang and Lung-Jieh Yang, 2004/07, "The pressure-sensor array using as an experiment platform for microfluidics," ICEE/APCOT-2004 (Asia Pacific Conference on Transducers), Sapporo, Japan, pp. 362-367.

41. Wei-Chih Lin and Lung-Jieh Yang, Jan 25-29, 2004, "The patterning of GA cross-linked gelatin," Proc. of the 17TH IEEE MEMS conf. **(MEMS'04)**, Maastricht, Netherlands, pp. 173-176

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43. Lung-Jieh Yang et al., Jan 20-23, 2003, "The micro ion drag pump using ITO electrodes," Proc. of the 16TH IEEE MEMS conf. **(MEMS'03)**, Kyoto, Japan, pp.112-115.

44. Lung-Jieh Yang et al., Jan 20-24, 2002, "Marching velocity of capillary meniscuses in microchannels," Proc. of the 15TH IEEE MEMS conf. **(MEMS'02)**, Las Vegas, USA, pp. 93-96.

45. Lung-Jieh Yang et al., Jan 20-24, 2002, "Photo-patternable gelatin as protection layers in surface micromachinings," Proc. of the 15TH IEEE MEMS conf. **(MEMS'02)**, Las Vegas, USA, pp.471-474.

46. L. J. Yang, C.J. Chang, and Y. M. Chang, May 18-20, 1999, "A new strategy to reduce the chip size of the bulk-machining micro sensors", Proceeding I of SENSOR 99, Nuernberg, Germany, pp.397-402

47. L.J. Yang and S.W. Kang, 1999, "A micro fluidic system of micro channels with on-site sensors by the silicon bulk micromachining", SPIE's Symp. on Micromachining and Microfabrication, Sep. 20-22, Proc. SPIE v. 3877-37

48. L.J. Yang and Y.M. Chang, 1999, "Micro pressure sensor with sub-mm size by the silicon bulk micromachining", SPIE's Symp. on Micromachining and Microfabrication, Sep. 20-22, Proc. SPIE v. 3876-32, pp.260-266

49. Kang, Shung-Wen, Yang, Lung-Jieh, Yu, Chung-Sheng, Chen, Jong-Shun, 1999, "**Performance test and analysis of silicon-based microchannel heat sink,**"

Proceedings of SPIE - The International Society for Optical Engineering 3795, pp. 259-270

50. Yang, L.-J., Chang, P.-Z., Lee, C.-K., Teng, J.-T., 1997, "**A new method to fabricate diffractive blazed gratings by an-isotropic etching on (110) silicon wafers,**" Proceedings of SPIE - The International Society for Optical Engineering 3242, pp. 46-51

Patents:

1. Lung-Jieh Yang, 壓阻式壓力感測器及其封裝方法, ROC (Taiwan) patent, I258,868, 06/01/2005.
2. Yih-Min Chang and Lung-Jieh Yang, "Manufacturing method for the miniaturization of silicon bulkmachined pressure sensor," US patent 6,308,575, 10/30/2001.

Books:

Some Knowing about MEMS (in Chinese：認識微機電), Tsang-Hai Book Corp.（滄海書局）, TAIWAN, 1st ed. (ISBN 957-2079-31-X), 2001.

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Office of International Relations
IHL Courses (VTR UGE 21)

Course Code	Course Title	L	T	P	C
10215AE102	Fundamentals of MEMS	1	-	-	1

- **COURSE CATEGORY**

  Industry / Institute Higher Learning

- **COURSE OBJECTIVE:**

  Sensors and actuators are now two main pillars of transducers in micro electro mechanical systems (MEMS). Sensors are devices which transfer the physical signals (temperature, pressure, light intensity…) to electrical signals. On the contrary, actuators transfer electrical commands into the real application of physical manifestation of heating/cooling, displacement, and light illumination. Miniaturization is of the primary concern of the transducer technology for pursuit of small size, high performance and low cost. The applications of sensors and actuators to smart engineering and IoTs will also be addressed.

- **COURSE CONTENT**

  - Introduction to MEMS and transducers
  - Thermal sensors
  - Pressure sensors
  - Accelerometers
  - Biosensors
  - Thermal actuators
  - Electrostatic and magnetic actuators
  - Optical MEMS technology
  - Microfluidic valves and pumps
  - VIVA and final exam

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List of students registered and eligible for the course

S.No	VtU No	Student Name	Total	Att %	Eligibility
1	VTU23954	OHMJAYADEVAR M	15	100	Eligible
2	VTU23905	SONI KUMARI	15	100	Eligible
3	VTU27189	SIDDARTH S CHAKRAVARTHY	15	100	Eligible
4	VTU19071	SAMUEL J G	15	100	Eligible
5	VTU21516	THIRISHITH J	15	100	Eligible
6	VTU22182	SADU REVANTH	15	100	Eligible
7	VTU22209	BIJAY KUMAR SAH	15	100	Eligible
8	VTU22418	BHAGAWATI PRASAD YADAV	15	100	Eligible
9	VTU22745	KANAPARTHI SIVA VIGHNESH	15	100	Eligible
10	VTU22794	ANANTHI.G	15	100	Eligible
11	VTU23140	DHANUSH S B	15	100	Eligible
12	VTU23295	DASARI VENKATA KAVYA	15	100	Eligible
13	VTU23429	SHOURYA GUPTA	12	80	Eligible
14	VTU23692	AJAY M	15	100	Eligible
15	VTU24267	ENNADULA NAMITHA ANUSHAKA RAJ	15	100	Eligible
16	VTU24268	JITENDRA SAH	15	100	Eligible
17	VTU24271	AMAN DAS THARU	15	100	Eligible
18	VTU24292	KARANEESHWARAN M S	15	100	Eligible
19	VTU21900	YANAMALA ROHITH	15	100	Eligible
20	VTU23259	ANNA ANGELIN M	15	100	Eligible
21	VTU23856	SHAIK IMRAN	15	100	Eligible
22	VTU23869	S HARIKESH	15	100	Eligible
23	VTU23918	AMEENUL RAHMAN M	15	100	Eligible

Course coordinator

HoD Aero

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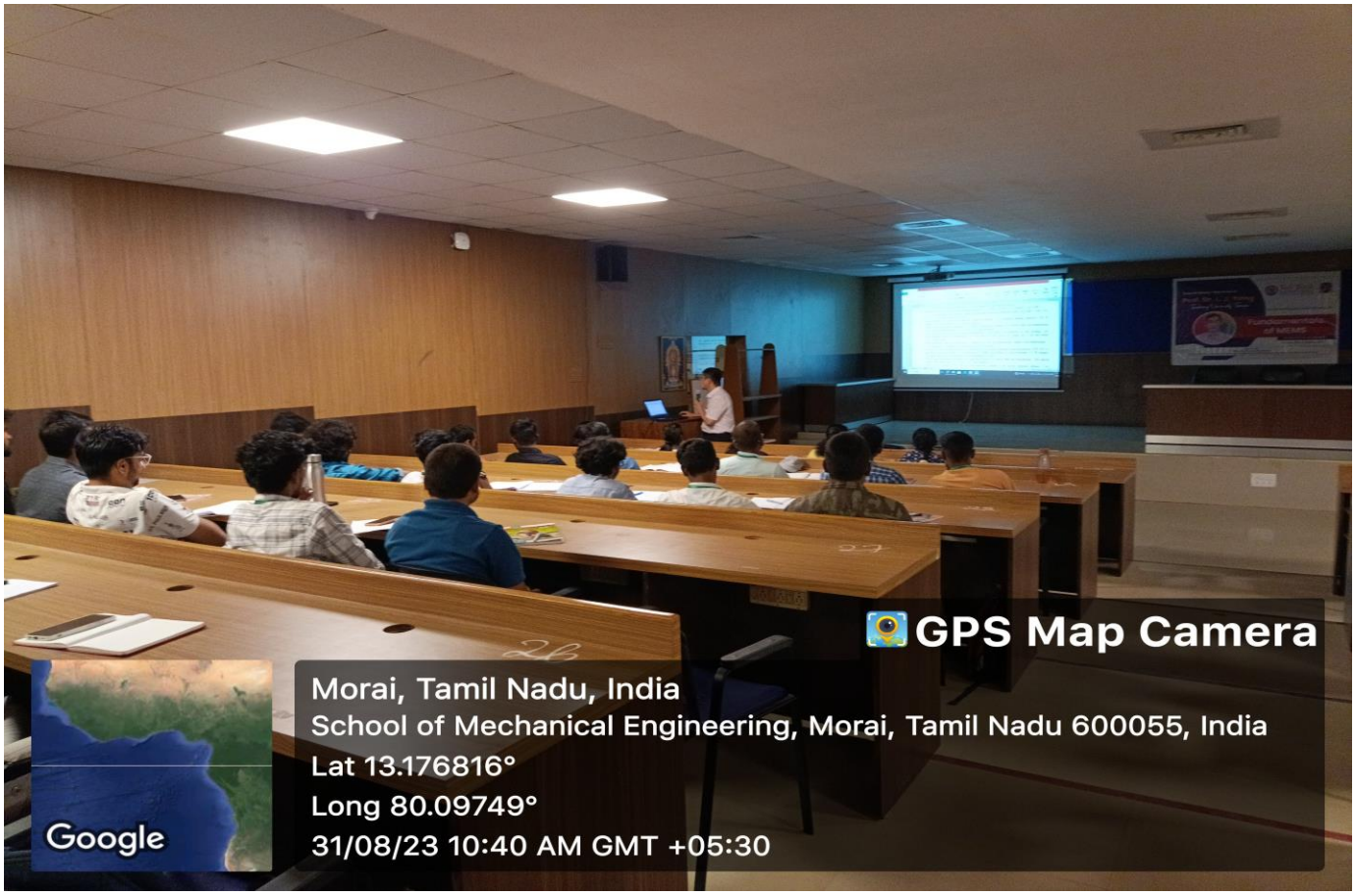
Students Marks statement for the course

S.No	VtU No	Student Name	T1%	T2%	T3%	Marks (Average)
1	VTU23954	OHMJAYADEVAR M	50	50	74	***58***
2	VTU23905	SONI KUMARI	81	61	68	***70***
3	VTU27189	SIDDARTH S CHAKRAVARTHY	81	50	74	***68***
4	VTU19071	SAMUEL J G	50	44	74	56
5	VTU21516	THIRISHITH J	73	72	68	***71***
6	VTU22182	SADU REVANTH	54	72	74	***67***
7	VTU22209	BIJAY KUMAR SAH	73	56	53	***60***
8	VTU22418	BHAGAWATI PRASAD YADAV	69	50	53	***57***
9	VTU22745	KANAPARTHI SIVA VIGHNESH	54	78	68	***67***
10	VTU22794	ANANTHI.G	58	56	58	***57***
11	VTU23140	DHANUSH S B	77	56	58	***63***
12	VTU23295	DASARI VENKATA KAVYA	62	50	68	***60***
13	VTU23429	SHOURYA GUPTA	85	50	74	***69***
14	VTU23692	AJAY M	81	61	68	***70***
15	VTU24267	ENNADULA NAMITHA ANUSHAKA RAJ	38	61	68	***56***
16	VTU24268	JITENDRA SAH	69	50	74	***64***
17	VTU24271	AMAN DAS THARU	81	67	53	***67***
18	VTU24292	KARANEESHWARAN M S	73	72	79	***75***
19	VTU21900	YANAMALA ROHITH	54	78	68	***67***
20	VTU23259	ANNA ANGELIN M	62	56	74	***64***
21	VTU23856	SHAIK IMRAN	73	72	68	***71***
22	VTU23869	S HARIKESH	62	72	63	***66***
23	VTU23918	AMEENUL RAHMAN M	73	72	63	***69***

Course coordinator

HoD Aero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School of Mechanical Engineering, Morai, Tamil Nadu 600055, India
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Long 80.09749°
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GPS Map Camera
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Lat 13.176816°
Long 80.09749°
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Students feedback

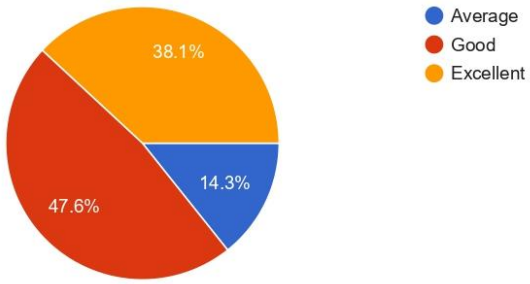
IHL - Fundamentals of MEMS Feedback-SS2324

21 responses

Publish analytics

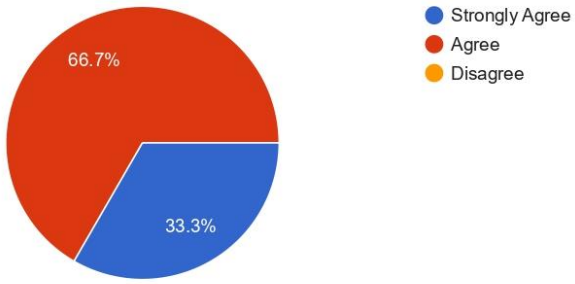
1) I heard words and phrases of Teacher and understood clearly in the classroom. Copy

21 responses



2) The Teacher explained important concepts/ideas in ways that I can understand. Copy

21 responses



3) Students were encouraged to ask questions and were given meaningful answers.

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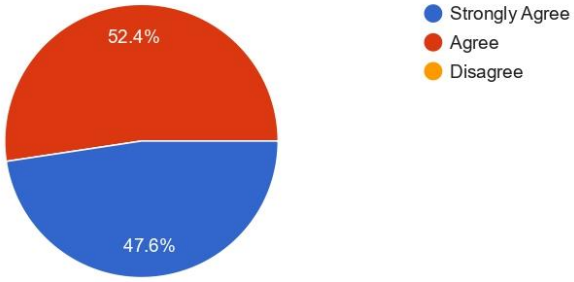
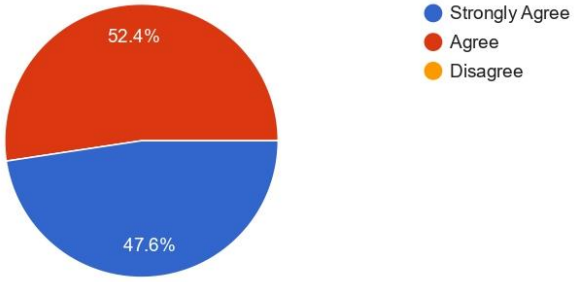
21 responses



4) The Teacher used appropriate teaching techniques to enhance my learning.

Copy

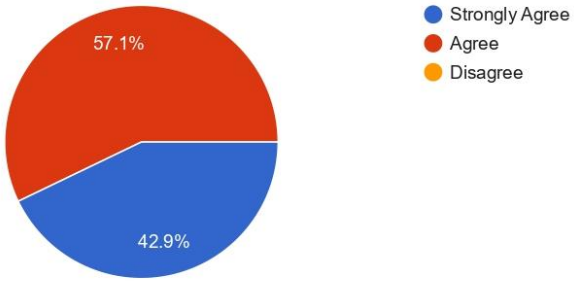
21 responses



5) I could access required materials easily for my learning activities

Copy

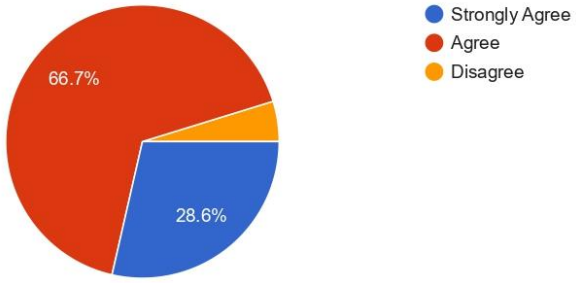
21 responses



6) I have learned and understood the subject materials of this course

Copy

21 responses



7) The Teacher discussed all the course outcomes clearly in class.

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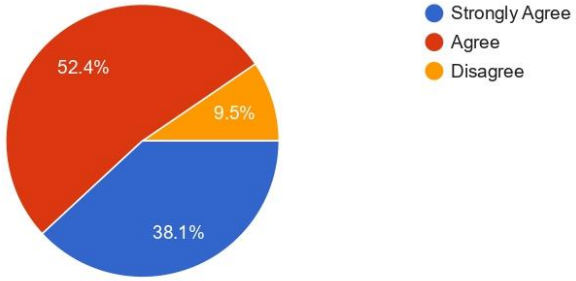

8) The Teacher completed syllabus portion in-time before tests / exams

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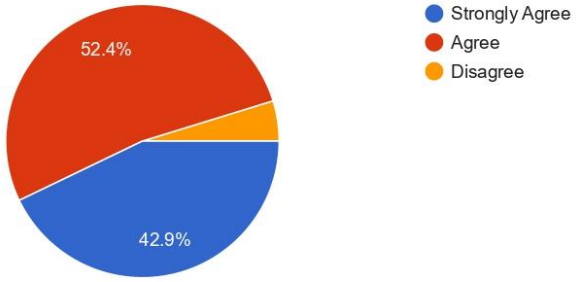

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Feedback on Visiting Faculty Course

Course Title	Fundamentals of MEMS
Visiting Faculty Name & University	Prof.Dr. Lung-Jieh Yang, Department of Mechanical and Electro-Mechanical Engineering, Tamkang University, Taiwan
Training Program Date	**30-Aug-2023 to 1-Sep-2023**
Course Duration	15 hours
Department	Aeronautical Engineering
No of Participants	23
Venue	ECE Gallery Hall

Impact on Students Learning Outcomes:

Impact on students learning outcomes is good. As the course is very relevant to Flight Mechanics, the participants got benefitted a lot. Moreover, many novel ideas were given by the Recourse person to implement in their project work.

Quality of Course Delivery& Course Materials:

The course was delivered very well. As the Recourse person used Indian Accent, our students were able follow easily. For all the modules, course materials were given in the form PDF file and they were posted in the group mail in time. The quality of the course materials is very good.

Recommendation of this Course Again for Next Batch of Students:

Since the course is very useful and the Resource person is continuously updating his course materials, this course may be recommended for our next batch of students.

Any Improvement required in the Course Content & Delivery Methods: The course opened up mainly vistas. To excavate further, the same course can be conducted for 2 credits by including a case study or many projects works for each student in future.

Feedback about assessment: The assessment has been conducted through offline mode with many application-oriented descriptive questions were in the final exam. The assessment was good and fair.

Any other Comments:

Signature of Head of the Department

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School of Mechanical and Construction

Department of Aeronautical Engineering

Value Added Course on

"Drone Technology and Its Applications"

AVIATOR
Vel Tech, Chennai

Held on

Date: 10 Oct 2023 to 13 Oct 2023

SCHOOL OF MENCHANICAL & CONSTRUCTION

DEPARTMENT OF AERONAUTICAL ENGINEERING

DRONE TECHNOLOGY AND ITS APPLICATIONS

WORKSHOP SCHEDULE

DAY-1

DATE	SESSION	ACTIVITIES	SPEAKER	TIME
10-Oct-2023	FN (1ST)	INAUGURATION OF WORKSHOP	MR.M. SENTHILKUMAR PRINCIPAL MEMBER, COE,FE R&D, TAFE.	10:00AM-1:00PM
		INTRODUCTION OF OFFICE BEARERS OF AVIATOR CLUB		
		DRONE IN AGRICULTURE BY INDUSTRY EXPERT		
	AN/2ND	DESIGN OF UAV	DR. G. SURENDAR ASSISTANT PROFESSOR/AERO	2:00 PM - 5:30PM

DAY-2

DATE	SESSION	ACTIVITIES	SPEAKER	TIME
11-Oct-2023	FN/3RD	DRONE PARTS AND FUNCTIONS	MR. G. GOWTHOM ASSISTANT PROFESSOR/AERO	09:00AM-12:30PM
	AN/4TH	SIMULATOR TRAINING	MR. T. KUMARAN ASSISTANT PROFESSOR/AERO	2:00 PM - 5:30PM

DAY-3

DATE	SESSION	ACTIVITIES	SPEAKER	TIME
12-Oct-2023	FN/5TH	HANDS ON EXPERIENCE ON DRONES	DR. SIVANESH PRABHU M ASSISTANT PROFESSOR/AERO	09:00AM-12:30PM
	AN/6TH	DRONE RULES AND REGULATIONS	DR. R. JAGANRAJ HEAD/AERO	2:00 PM - 5:30PM

DAY-4

DATE	SESSION	ACTIVITIES	SPEAKER	TIME
13-Oct-2023	FN/7TH	TYPE CERTIFICATION PROCESS	DR. R. JAGANRAJ HEAD/AERO	09:00AM-12:30PM
	FN/8TH	TYPE CERTIFICATION PROCESS		2:00 PM - 5:30PM
		FEEDBACK COLLECTION/CERTIFICATE ISSUE		

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List of Registered students

S.No	VTU	STUDENT NAME
1	VTU23429	SHOURYA GUPTA
2	VTU22418	BHAGAWATI PRASAD YADAV
3	VTU24267	ENNADULA NAMITHA ANUSHAKA RAJ
4	VTU24271	AMAN DAS THARU
5	VTU27189	SIDDHARTH CHAKRAVATHY
6	VTU23295	DASARI VENKATA KAVYA
7	VTU24214	VELANGI NEETHUSRI
8	VTU24260	AKENA AMARA NAGA TEJA
9	VTU21516	THIRISHITH.J
10	VTU23692	AJAY M
11	VTU24292	KARANEESHWARAN M.S
12	VTU23905	SONI KUMARI
13	VTU24268	JITENDRA SAH
14	VTU22209	BIJAY KUMAR SAH
15	VTU21900	ROHITH YANAMALA
16	VTU22745	KANAPARTHI SIVA VIGHNESH
17	VTU27043	A.PRANAV SRI RAMA MURTHY
18	VTU22182	SADU REVANTH
19	VTU24254	Deepak Kumar (Civil)
20	VTU22794	ANANTHI G
21	VTU23856	SHAIK IMRAN
22	VTU23298	SANJAY B
23	VTU23978	M.MADHU SUDHAN REDDY
24	VTU19071	SAMUEL J G
25	VTU21222	KRISHNA PRIYA A
26	VTU19385	LEELA PRASAD D
27	VTU21465	ELENI HAILU ABETU
28	VTU19726	GADUPUDI UMASANKER
29	VTU23951	T.A BALAJI
30	VTU20803	NUSUM SAI RAM
31	VTU21028	KHUSHI SHARMA
32	VTU19641	J JEBIN
33	VTU19581	M S AKHIL
34	VTU19310	PRASHANT GAUR

35	VTU21311	ROHAN BASTOLA
36	VTU20612	PRAHALAD T
37	VTU23954	M.OHMJAYADEVAR
38	VTU20887	SAYOOJ K
39	VTU20319	MUHAMMED SHAMMAS P
40	VTU20034	MOLLETI HARI
41	VTU21214	U.HARSHITHA
42	VTU20449	KEERTHI MISHRA
43	VTU21302	T.MAITHREYEE
44	VTU20627	P.KARAN
45	VTU21175	D.JAHNAVI
46	VTU12073	MALLAMPALLY LALITH SRAVYA
47	VTU17325	M V N S UJWAL PRASAD
48	VTU17072	BYREDDY PRUDHVINATH REDDY
49	VTU16835	ANKIT KUMAR MOURYA
50	VTU17260	DARIVEMULA MALLESH BABU
51	VTD1229	V.SRINIVASAN

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List of students eligible for the course

S.No	VtU No	Student Name	Att %	Eligibility
1	VTU23429	SHOURYA GUPTA	100	Eligible
2	VTU22418	BHAGAWATI PRASAD YADAV	100	Eligible
3	VTU24267	ENNADULA NAMITHA ANUSHAKA RAJ	100	Eligible
4	VTU24271	AMAN DAS THARU	100	Eligible
5	VTU27189	SIDDHARTH CHAKRAVATHY	100	Eligible
6	VTU23295	DASARI VENKATA KAVYA	100	Eligible
7	VTU24214	VELANGI NEETHUSRI	100	Eligible
8	VTU24260	AKENA AMARA NAGA TEJA	100	Eligible
9	VTU21516	THIRISHITH.J	100	Eligible
10	VTU23692	AJAY M	100	Eligible
11	VTU24292	KARANEESHWARAN M.S	100	Eligible
12	VTU23905	SONI KUMARI	100	Eligible
13	VTU24268	JITENDRA SAH	80	Eligible
14	VTU22209	BIJAY KUMAR SAH	100	Eligible
15	VTU21900	ROHITH YANAMALA	100	Eligible
16	VTU22745	KANAPARTHI SIVA VIGHNESH	100	Eligible
17	VTU27043	A.PRANAV SRI RAMA MURTHY	100	Eligible
18	VTU22182	SADU REVANTH	100	Eligible
19	VTU24254	Deepak Kumar (Civil)	100	Eligible
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49	VTU16835	ANKIT KUMAR MOURYA	100	Eligible
50	VTU17260	DARIVEMULA MALLESH BABU	100	Eligible
51	VTD1229	V.SRINIVASAN	100	Eligible

Course coordinator HoD Aero


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53FX+Q2X, New Vellanur, Tamil Nadu 600055, India
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Long 80.097663°
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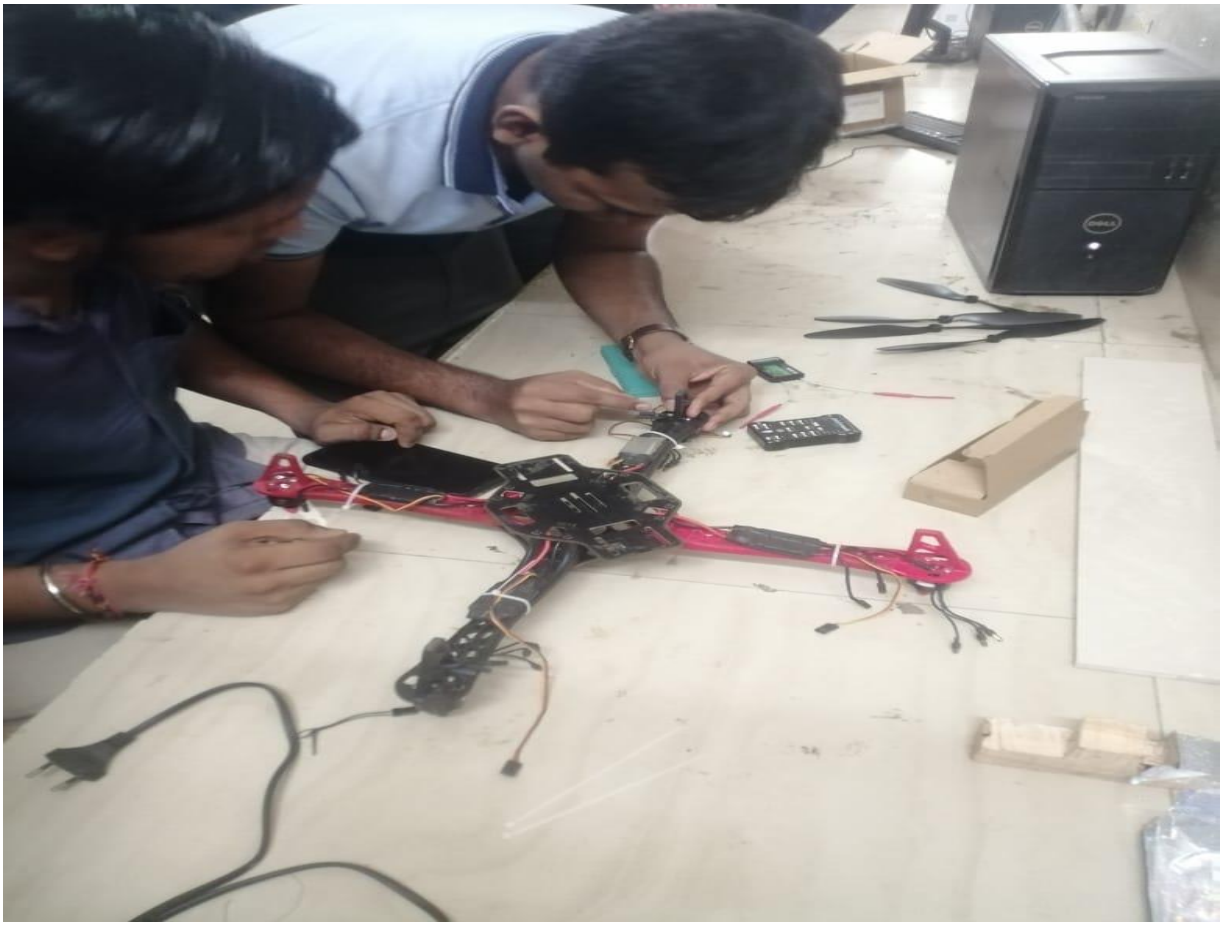
Google

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Students feedback

Drone Technology and Its Applications Feedback-SS2324

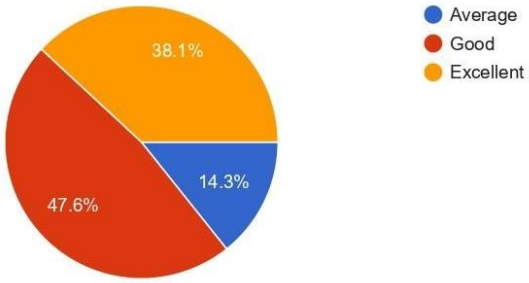
SS2324

21 responses

Publish analytics

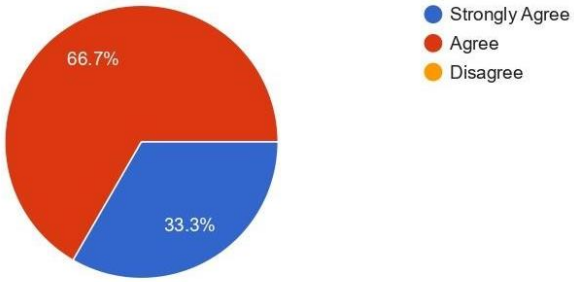
1) I heard words and phrases of Teacher and understood clearly in the classroom. Copy

21 responses



2) The Teacher explained important concepts/ideas in ways that I can understand. Copy

21 responses



3) Students were encouraged to ask questions and were given meaningful answers.

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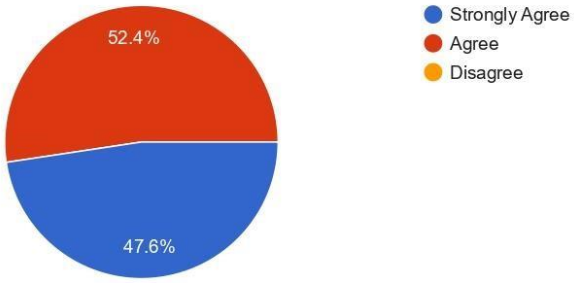
21 responses



4) The Teacher used appropriate teaching techniques to enhance my learning.

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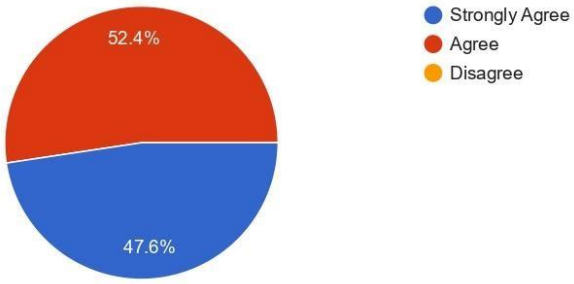
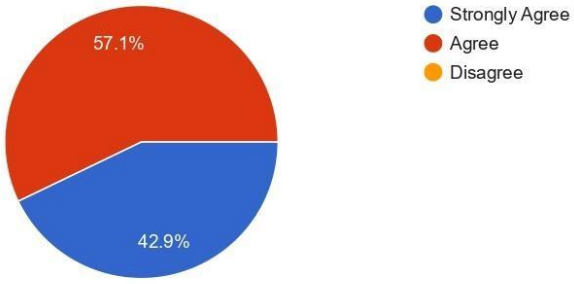
21 responses



5) I could access required materials easily for my learning activities

Copy

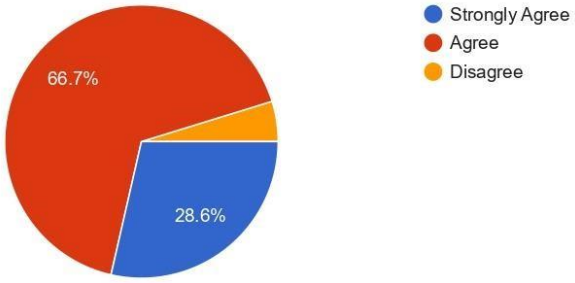
21 responses



6) I have learned and understood the subject materials of this course

Copy

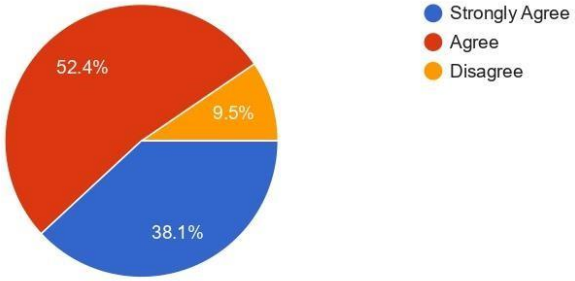
21 responses



7) The Teacher discussed all the course outcomes clearly in class.

Copy

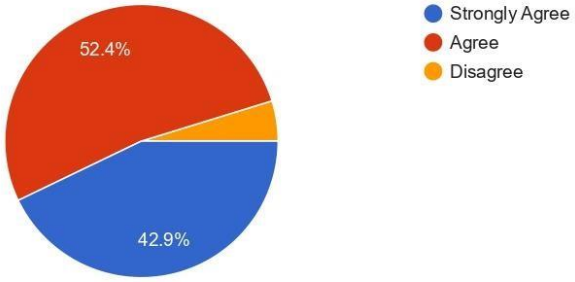
21 responses



8) The Teacher completed syllabus portion in-time before tests / exams

Copy

21 responses



Vel Tech
Rangarajan Dr. Sagunthala
R&D Institute of Science and Technology
(Deemed to be University Estd. u/s 3 of UGC Act, 1956)

Feedback on Visiting Faculty Course

Course Title	**Drone Technology and Its Applications**
Visiting Faculty Name & University	Prof.Dr. Lung-Jieh Yang, Department of Mechanical and ElectroMechanical Engineering, Tamkang University, Taiwan
Training Program Date	**10 Oct 2023 to 13 Oct 2023**
Course Duration	30 hours
Department	Aeronautical Engineering
No of Participants	51
Venue	Aero CAD Lab, FMC Lab

Impact on Students Learning Outcomes:

Impact on students learning outcomes is good. As the course is very relevant to Flight Mechanics, the participants got benefitted a lot. Moreover, many novel ideas were given by the Recourse person to implement in their project work.

Quality of Course Delivery& Course Materials:

The course was delivered very well. As the Recourse person used Indian Accent, our students were able follow easily. For all the modules, course materials were given in the form PDF file and they were posted in the group mail in time. The quality of the course materials is very good.

Recommendation of this Course Again for Next Batch of Students:

Since the course is very useful and the Resource person is continuously updating his course materials, this course may be recommended for our next batch of students.

Any Improvement required in the Course Content & Delivery Methods:

The course opened up mainly vistas. To excavate further, the same course can be conducted for 2 credits by including a case study or many projects works for each student in future.

Feedback about assessment:

The assessment has been conducted through offline mode with many application-oriented descriptive questions were in the final exam. The assessment was good and fair.

Any other Comments:

Signature of Head of the Department

Vel Tech
Rangarajan Dr. Sagunthala
R&D Institute of Science and Technology
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Accredited by NAAC with HIGHEST GRADE A++

Recognised as CATEGORY-1 DEEMED TO BE UNIVERSITY by the UGC University Grants Commission

School of Mechanical & Construction

Department of Aeronautical Engineering

Organize a

Four - Day Value Added Course on

"Recent Advances in Gas Turbine Combustion"

Resource Person

Shri. S. Subramanian

Co-Founder, Indagatus Solutions Pvt. Ltd., Chennai

Topics to be Covered: **Premixed and non-premixed flame, Bluff body stabilized combustion,Thermo acoustic interactions Hands on session on Combustion and resonance**

19 to 22 March 2024

Class room (2123)

In the Presence of

Col. Prof. Vel. Dr. R. Rangarajan
Founder President & Chancellor

Dr. Sagunthala Rangarajan
Foundress President

Prof. S. Salivahanan
Vice Chancellor

Organizer
Mr. C. Rakesh Kumar
Assistant Professor

Department of Aeronautical Engineering
School of Mechanical & Construction

1800 212 7669

Tollfree

Website

A four-day value-added course on "Recent Advances in Gas Turbine Combustion" was conducted from 19th to 22nd March 2024 at Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology. The course was organized to provide participants with a comprehensive understanding of the latest developments in gas turbine combustion technology, which plays a critical role in various industries, including aviation, power generation, and mechanical engineering.

Objective

The primary objective of the course was to bridge the gap between academic knowledge and industry practices by focusing on the recent advancements in gas turbine combustion. The course aimed to equip participants with the latest theoretical insights and practical skills, enhancing their ability to contribute effectively to the field of gas turbine technology.

Participants

The course was attended by 44 participants, including third and final year undergraduate students, faculty members, researchers, and industry professionals. The diverse group of participants enriched the learning experience, bringing different perspectives and fostering collaborative learning.

S.No	Vtu No	Name
1	VTU21465	ELENI HAILU ABETU
2	VTU20434	KATAKAM UDAY KUMAR
3	VTU21222	KRISHNA PRIYA A
4	VTU19596	KANCHANI MAHENDRA REDDY
5	VTU21214	UPPADA HARSHITHA
6	VTU19726	GADUPUDI UMASANKER
7	VTU23951	BALAJI T A
8	VTU19366	MARAPPAGARI VIJAY VENKAT RAMAN
9	VTU19633	CHAMIDISETTY PRABHU KUMAR
10	VTU20803	NUSUM SAI RAM
11	VTU19440	MAROTHU LEELA RAVI VARMA PRASAD
12	VTU23954	OHMJAYADEVAR M
13	VTU19071	SAMUEL J G

14	VTU19310	PRASHANT GAUR
15	VTU20627	P KARAN
16	VTU21311	ROHAN BASTOLA
17	VTU23978	MALLI REDDY MADHU SUDHAN REDDY
18	VTU20034	MOLLETI HARI
19	VTU20679	SARFAZ ANFAL A
20	VTU20612	PRAHALAD T
21	VTU20887	SAYOOJ K
22	VTU21175	DADIREDDY JAHNAVI
23	VTU21302	TANUKU MAITHREYEE
24	VTU19544	NIVED SUNIL P
25	VTU20944	PALLEM DEVISRI
26	VTU19385	LEELA PRASAD D
27	VTU20319	MUHAMMED SHAMMAS P
28	VTU19581	M S AKHIL
29	VTU19999	MOHAMMED ANSAF
30	VTU20449	KEERTHI MISHRA
31	VTU21028	KHUSHI SHARMA
32	VTU19641	J JEBIN
33	VTU27285	NABILA A
34	VTU15052	MATHARI RAMACHANDRAN
35	VTU18417	ADIBOINA LOKESH
36	VTU18649	ABIN BHATTA
37	VTU18699	AMITH SUSHIL BABU
38	VTU18701	ISHIMWE ISRAEL YVAN
39	VTU18704	ANIRUDDHA DAS
40	VTU18716	AWADESH PAL
41	VTU18719	MOHAN RIJAL
42	VTU12001	S SHAM PREETHI
43	VTU12011	SIYA SINGH
44	VTU18597	MOMTAR KARAMKAR UPTI

Course Content

The course was structured into a series of lectures, hands-on sessions, and discussions covering the following key topics:

1. **Fundamentals of Gas Turbine Combustion:**
   - Overview of gas turbine engines
   - Basic principles of combustion
   - Combustion chamber design
2. **Advances in Combustion Technology:**
   - Lean combustion technology
   - Emission reduction techniques
   - Advanced materials for combustion chambers

3. **Modeling and Simulation:**
   - Computational Fluid Dynamics (CFD) in combustion analysis
   - Modeling techniques for combustion processes
   - Simulation of combustion instabilities
4. **Experimental Techniques:**
   - Diagnostic tools for combustion research
   - Experimental setups for studying combustion
   - Case studies and practical applications
5. **Emerging Trends and Future Directions:**
   - Innovations in alternative fuels for gas turbines
   - Developments in low-emission combustors
   - Future challenges and opportunities in gas turbine combustion

Learning Outcomes

By the end of the course, participants gained:

- A solid understanding of the fundamental principles of gas turbine combustion.
- Awareness of the latest advancements in combustion technologies.
- Practical skills in using simulation tools and experimental techniques for combustion research.
- Insights into the future trends and challenges in the field of gas turbine combustion.

Photos


FORCED CONVECTION
TEST APPARATUS


Recent Advances in Gas Turbine Combustion

Vel Tech
Rangarajan Dr. Sagunthala
R&D Institute of Science and Technology
(Deemed to be University Estd. u/s 3 of UGC Act, 1956)

School of Mechanical and Construction
Department of Aeronautical Engineering

Value Added Course Report

Course Name: Finite Element Analysis

Date **:** 25-03-2024 to 30-03-2024

27-2-2024

From

Dr. Ganesan S,
Professor,
Department of Aeronautical,
Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology,
Avadi.

To

The Vice Chancellor,
Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology,
Avadi.

Respected Sir,

Sub: Requesting permission to conduct Workshop/Value Added course.

I would like to organise a five-day workshop on "Finet Element Analysis" for students and faculties from 22 -03-2024 to 26 -03-2024. The budget detail is given below. For this programme four sessions will be conducted by three external members from Industry and Educational Institutions and remaining sessions will be conducted by faculty members of SOMC. We need Rs 30,000/- (Rupees Thirty Thousand only) to conduct the workshop.

So, I kindly request you to give permission and sanction the amount to conduct the workshop smoothy.

Thanking you

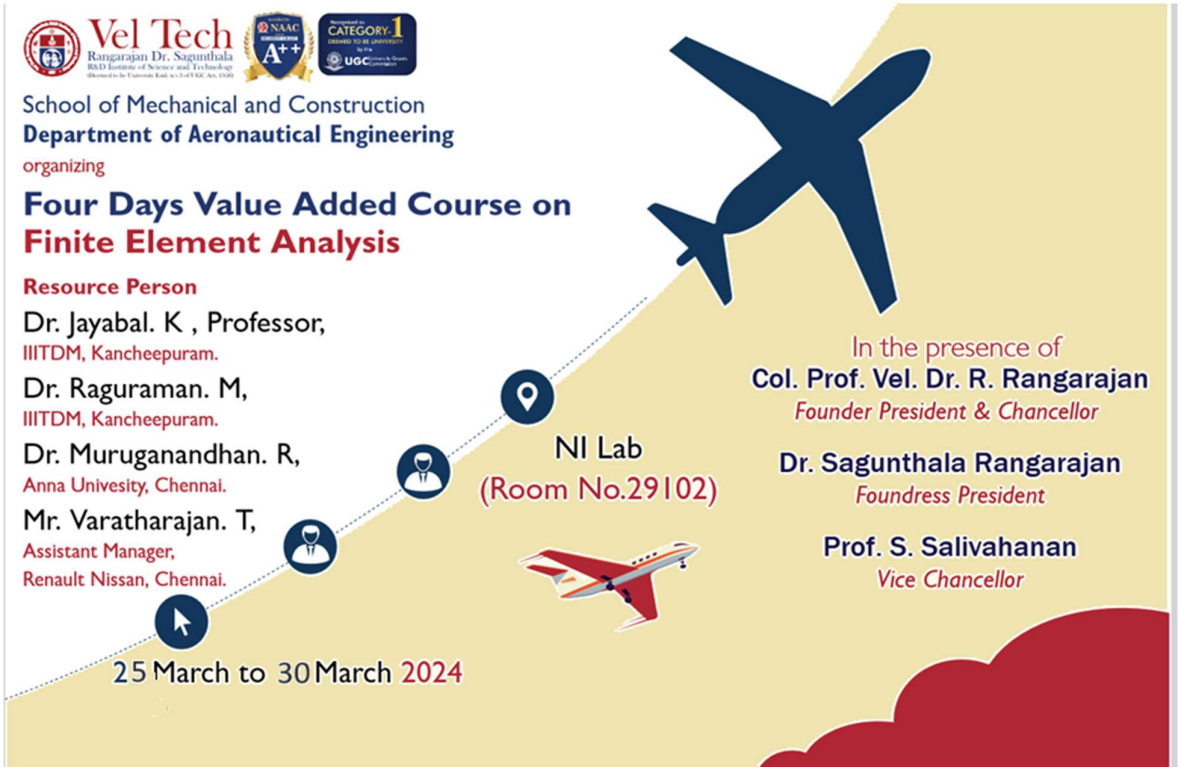
S. No	Item	Amount (Rs)
1	Honorarium No. of Resource Person: Four (Rs.5000x4)	20000
2	Travelling allowance (4x2000)	8000
3	Banner, Shawl and certificate	2000
	Total (Rupees Thirty Thousand)	30,000/-

Yours Faithfully,

Dr. S Ganesan
Coordinators.

School of Mechanical and Construction
Department of Aeronautical Engineering

BANNER



School of Mechanical and Construction
Department of Aeronautical Engineering

Course Schedule

Course : Finite Element Analysis

S. No	Date	Name of the Expert	Name of the Organization
1	25-03-2024	Dr. Raguraman Munusamy	Associate Professor, IIITDM, Kancheepuram.
2	26-03-2024	Dr. Muruganandhan. R	Associate Professor, Anna University
3	27-03-2024	Prof. Dr.Jayabal. K	Professor and Dean (Academics) IIITDM, Kancheepuram.
4	28-03-2024	Dr. Ganesan S	Professor, Vel Tech University.
5	30-03-2024	Mr. Senthil Kumar	Renault Nissan

S. No	FN	AN
	Day-1	
1	Basic Concepts of Finite Element Analysis	One Dimensional Problems
	Day -2	
2	Two Dimensional Problems: Structural	Hands on Training using Ansys software.
	Day-3	
3	Two-Dimensional Heat Transfer Problems	Hands on Training using Ansys
	Day-4	
4	Plane Stress, Plane Strain	Hands on Training using Ansys
	Day-5	
5	Hands on Training using Ansys	

School of Mechanical and Construction
Department of Aeronautical Engineering
Details of Participants

S. No	VTU No	Student Name
1	19071	SAMUEL J G
2	19244	MOHAMMED SHAJAN S
3	19310	PRASHANT GAUR
4	19366	M VIJAY VENKAT RAMAN
5	19385	LEELA PRASAD D
6	19440	MAROTHU LEELARAVIVARMAPRASAD
7	19544	NIVED SUNIL P
8	19581	M S AKHIL
9	19596	KACHANI MAHENDRA REDDY
10	19633	CHAMIDISETTY PRABHU KUMAR
11	19641	J JEBIN
12	19726	GADUPUDI UMASANKER
13	19999	MOHAMMED ANSAF
14	20034	MOLLETI HARI
15	20319	MUHAMMED SHAMMAS P
16	20434	K UDAY KUMAR
17	20449	KEERTHI MISHRA
18	20612	PRAHALAD T
19	20627	P KARAN
20	20679	SARFAZ ANFAL A
21	20725	RAFIQ MOHAMED.S
22	20803	NUSUM SAI RAM
23	20887	SAYOOJ K
24	20944	PALLEM DEVISRI
25	21028	KHUSHI SHARMA
26	21081	GANGA THILAK
27	21175	DADIREDDY JAHNAVI
28	21214	UPPADA HARSHITHA
29	21222	KRISHNA PRIYA A
30	21302	TANUKU MAITHREYEE
31	21309	MYTHISH G
32	21311	ROHAN BASTOLA
33	21465	ELENI HAILU ABETU
34	23951	BALAJI T A


Four Days Value Added Course on
Finite Element Analysis
Dr. Jayabal, K., Professor,
Dr. Raguraman, M.,
Dr. Muruganandhan, R.,
Mr. Varatharajan, T.,
NI Lab
(Room No.2F102)
25 March to 28 March 2024


ADVANCED COMPOSITES FOR
IMPACT LOADS
Dr. Raguraman Munusamy
Indian Institute of Information Technology, Design & Manufacturing
IIITD&M Kancheepuram, Chennai - 600 127


Derivation of strain-displacement matrix
Department of Mechanical Engineering

Sample Certificate

Vel Tech
Rangarajan Dr. Sagunthala
R&D Institute of Science and Technology
(Deemed to be University Estd. u/s 3 of UGC Act, 1956)

B.Tech.(Aero, Civil, CSE, ECE EEE & Mech)

Certificate of participation

This is to Certify that MOHAMMED ANSAF of III rd YEAR, AERONAUTICAL ENGG has Attended a Four Day Value Added Course on **"Finite Element Analysis"** held during 25th to 30th March 2024, organized by the Department of Aeronautical Engineering, School of Mechanical and Construction, Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology, Chennai, Tamil Nadu, India.

30/3/24

Dr.S. Ganesan
Professor - Aero
Coordinator

Dr. R. Jaganraj
HoD - Aero

Dr. N. Lenin
Dean - SOMC

Vel Tech
Rangarajan Dr. Sagunthala
R&D Institute of Science and Technology
(Deemed to be University Estd. u/s 3 of UGC Act, 1956)

B.Tech.(Aero, Civil, CSE, ECE EEE & Mech)

Certificate of participation

This is to Certify that MLRV PRASAD of III rd YEAR, AERONAUTICAL ENGG has Attended a Four Day Value Added Course on **"Finite Element Analysis"** held during 25th to 30th March 2024, organized by the Department of Aeronautical Engineering, School of Mechanical and Construction, Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology, Chennai, Tamil Nadu, India.

30/3/24

Dr.S. Ganesan
Professor - Aero
Coordinator

Dr. R. Jaganraj
HoD - Aero

Dr. N. Lenin
Dean - SOMC

Vel Tech
Rangarajan Dr. Sagunthala
R&D Institute of Science and Technology
(Deemed to be University Estd. u/s 3 of UGC Act, 1956)

B.Tech.(Aero, Civil, CSE, ECE EEE & Mech)

Certificate of participation

This is to Certify that M. VIJAY VENKAT RAMAN of III Yr. AERONAUTICAL ENGINEERING has Attended a Four Day Value Added Course on **"Finite Element Analysis"** held during 25th to 30th March 2024, organized by the Department of Aeronautical Engineering, School of Mechanical and Construction, Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology, Chennai, Tamil Nadu, India.

Dr.S. Ganesan
Professor - Aero
Coordinator

Dr. R. Jaganraj
HoD - Aero

Dr. N. Lenin
Dean - SOMC

29-3-2024

From

Dr. S. Ganesan, TTS No. 2406,
Professor
Department of Aeronautical Engineering,
Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology,
Avadi, Chennai.

To

The Vice Chancellor
Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology,
Avadi, Chennai.

Through Proper channel

Respected sir,

Sub: Requesting approval to close advance cash bill - regarding.

I would like to bring to your kind knowledge that four days value added course on Finite Element Analysis was conducted on 25,26,27 and 30 March 2023. For this program, we had arranged three subject experts from IIITDM and Anna University and one software Analysis expert from Ford, Chennai. All external experts and internal faculties delivered lecture on finite Element Analysis.

I received Rs.30,000/-for this program as advance cash. Here with, I have attached ML form and supporting bills along with this letter for your reference. I kindly request your kind approval to close the advance cash bill.

S. no	Particulars	Amount in Rs.
1	Honorarium and Travelling allowance for four external experts (4xRs.7000)	28,000
2	Certificates (50 x Rs13)	650
3	Shawl (3xRs320)	960
4	Water and tea for Guest	208
5	invitation	47
6	Repot binding	125
	Total	30,000
	Balance amount to be paid (30000-30000)	0

Thanking you,

Yours Sincerely,

Dr. S. Ganesan.

Vel Tech
Rangarajan Dr. Sagunthala
R&D Institute of Science and Technology
(Deemed to be University Estd. u/s 3 of UGC Act, 1956)

School of Mechanical and Construction

Department of Aeronautical Engineering

Value Added Course on

"Advanced Material Characterization Techniques"

Held on

Date: 13-03-2024 to 16-03-2024

Vel Tech
Rangarajan Dr. Sagunthala
R&D Institute of Science and Technology
(Deemed to be University Estd. u/s 3 of UGC Act, 1956)

Vel Tech
Rangarajan Dr. Sagunthala
R&D Institute of Science and Technology
(Deemed to be University Estd. u/s 3 of UGC Act, 1956)

NAAC A++

Recognized as CATEGORY-1 DEEMED TO BE UNIVERSITY by the UGC University Grants Commission

School of Mechanical & Construction
Department of Aeronautical Engineering

organizing

Four Days Value Added Course on

Advanced Material Characterization Techniques

Date : 13-03-2024 to 16-03-2024 | Venue : Room no.2224

Resource Person

Dr. K. Elangovan
Professor
Department of Rubber & Plastics
MIT, Chennai

In the presence of

Col. Prof. Vel. Dr. R. Rangarajan
Founder President & Chancellor

Dr. Sagunthala Rangarajan
Foundress President

Prof. S. Salivahanan
Vice Chancellor

Organizer

Dr. J V Sai Prasanna Kumar
Professor
Department of Aeronautical Engineering
School of Mechanical & Construction

Vel Tech
Rangarajan Dr. Sagunthala
R&D Institute of Science and Technology
(Deemed to be University Estd. u/s 3 of UGC Act, 1956)

FOUR -DAY PROGRAM SCHEDULE

Time	Day 1: Advanced Material Characterization Techniques
09:00 AM - 09:30 AM	Registration and Welcome Address
09:30 AM - 11:00 AM	Session 1: Introduction to Material Characterization
11:00 AM - 11:15 AM	Tea/Coffee Break
11:15 AM - 01:00 PM	Session 2: Microscopy Techniques (Part 1)
01:00 PM - 02:00 PM	Lunch Break
02:00 PM - 03:30 PM	Session 2: Microscopy Techniques (Part 2)
03:30 PM - 03:45 PM	Tea/Coffee Break
03:45 PM - 05:00 PM	Open Discussion and Q&A
Time	**Day 2: Advanced Material Characterization Techniques**
09:00 AM - 09:30 AM	Recap of Day 1 and Introduction to Day 2
09:30 AM - 11:00 AM	Session 3: Spectroscopy Techniques (Part 1)
11:00 AM - 11:15 AM	Tea/Coffee Break
11:15 AM - 01:00 PM	Session 3: Spectroscopy Techniques (Part 2)
01:00 PM - 02:00 PM	Lunch Break
02:00 PM - 03:30 PM	Session 4: Surface Analysis Techniques (Part 1)
03:30 PM - 03:45 PM	Tea/Coffee Break

03:45 PM - 05:00 PM	Session 4: Surface Analysis Techniques (Part 2)
Time	**Day 3: Advanced Material Characterization Techniques**
09:00 AM - 09:30 AM	Recap of Day 2 and Introduction to Day 3
09:30 AM - 10:30 AM	Session 5: Thermal Analysis Techniques (Part 1)
10:30 AM - 10:45 AM	Tea/Coffee Break
10:45 AM - 12:15 PM	Session 5: Thermal Analysis Techniques (Part 2)
12:15 PM - 01:15 PM	Lunch Break
01:15 PM - 02:30 PM	Session 6: Mechanical Testing Techniques (Part 1)
02:30 PM - 03:00 PM	Tea/Coffee Break
03:00 PM - 05:00 PM	Session 6: Mechanical Testing Techniques (Part 2)
Time	**Day 4: Advanced Material Characterization Techniques**
09:00 AM - 09:30 AM	Recap of Day 3 and Introduction to Day 4
09:30 AM - 11:00 AM	Session 7: Case Studies and Applications (Part 1)
11:00 AM - 11:15 AM	Tea/Coffee Break
11:15 AM - 01:00 PM	Session 7: Case Studies and Applications (Part 2)
01:00 PM - 02:00 PM	Lunch Break
02:00 PM - 03:15 PM	Session 8: Hands-On Demonstration
03:15 PM - 03:30 PM	Tea/Coffee Break
03:30 PM - 04:30 PM	Feedback Session and Certificate Distribution

Vel Tech
Rangarajan Dr. Sagunthala
R&D Institute of Science and Technology
(Deemed to be University Estd. u/s 3 of UGC Act, 1956)

List of Registered students

S. No	VTU No	Students Name
1	VTU24493	ABISHEK M J
2	VTU27269	ADABALA VIJAY KUMAR
3	VTU27100	AKKIREDDY BHASKAR KALYAN
4	VTU24515	AKSHAI KUMAR D
5	VTU27315	AMBATI ANANTHAIAH
6	VTU27311	ANGEL S
7	VTU24634	ANUSHKA SHARMA
8	VTU27059	ASWATH S
9	VTU24538	ASWIN S
10	VTU26923	ATMAKURI SAHITHI KEERTHANA
11	VTU26502	ATUL SINGH
12	VTU27209	C M AL AMEEN
13	VTU27307	CHINRAJ R
14	VTU24910	CHINTHAPATLA NANDA VARDHAN
15	VTU27382	DHANUSH GOPAL R
16	VTU27388	DODLA KANTHI KUMAR
17	VTU27404	G MUGILAN
18	VTU27357	GANISETTI GNANESWARI
19	VTU24985	HARSHIT LALL GUPT
20	VTU25149	HARSHPREET KAUR
21	VTU26915	JHON JUDSON J
22	VTU24727	K JAIPALREDDY
23	VTU27379	K MOHAMED SIRAJUDEEN
24	VTU25877	KASULA RAGHUVEER
25	VTU25331	KEVIN S
26	VTU27377	KUSHAL SHAHI
27	VTU24633	LOKESH S
28	VTU24810	M ARJUN KUMAR
29	VTU25195	MADDIPATI CHANDRA SAI PAVAN
30	VTU27354	MAHALAKSHMI S P
31	VTU27157	MALLEBOINA JEEVANA RAMA KRISHNA
32	VTU24696	MEDAM NITHIN KUMAR
33	VTU24635	MUKESH M
34	VTU27188	NAVEEN M
35	VTU26907	PALETI HARSHA SANDEEP RAJ
36	VTU26803	PANCHADI SRAVAN KUMAR
37	VTU27061	PARMINDER KAUR
38	VTU27289	PONUGOTI SARVANTHI
39	VTU27074	POOJA CHAUHAN
40	VTU24805	PRADEEP S
41	VTU25268	R DOYEL
42	VTU24314	R VILMER SAMUEL
43	VTU26792	RAJKUMAR K

44	VTU26670	RAVULAKARI AJAY
45	VTU26957	RIYA JAIN
46	VTU25233	S SADISH
47	VTU24604	S SHYAM SUNDAR
48	VTU26860	SAVIDIKANI REDDY RESHMA
49	VTU26932	SHAIK SAKEENA
50	VTU24907	SHINDE SUSHILKUMAR NANA
51	VTU27319	SIVAMAYA S
52	VTU27208	SOHAIL AHMED
53	VTU24313	SURYA S
54	VTU27346	VISWANANA VARSHITH SAI
55	VTU26325	JADHAV SAKSHI KISHOR
56	VTU27290	MANDALAPU VARSHA
57	VTU27280	MOHAMMED OLIF P N
58	VTU27306	NIVETHA S
59	VTU24950	PILERU RAHEEMA
60	VTU24533	ANBARASU R
61	VTU26960	KESANAKURTHI ROHITH VISHAL
62	VTU24684	S BHAVATHARANI

List of students eligible for the course

S. No	VTU No	Students Name	ATT%	Eligibility
1	VTU24493	ABISHEK M J	100	Eligible
2	VTU27269	ADABALA VIJAY KUMAR	100	Eligible
3	VTU27100	AKKIREDDY BHASKAR KALYAN	100	Eligible
4	VTU24515	AKSHAI KUMAR D	100	Eligible
5	VTU27315	AMBATI ANANTHAIAH	100	Eligible
6	VTU27311	ANGEL S	100	Eligible
7	VTU24634	ANUSHKA SHARMA	100	Eligible
8	VTU27059	ASWATH S	100	Eligible
9	VTU24538	ASWIN S	100	Eligible
10	VTU26923	ATMAKURI SAHITHI KEERTHANA	100	Eligible
11	VTU26502	ATUL SINGH	100	Eligible
12	VTU27209	C M AL AMEEN	100	Eligible
13	VTU27307	CHINRAJ R	80	Eligible
14	VTU24910	CHINTHAPATLA NANDA VARDHAN	100	Eligible
15	VTU27382	DHANUSH GOPAL R	100	Eligible
16	VTU27388	DODLA KANTHI KUMAR	100	Eligible
17	VTU27404	G MUGILAN	100	Eligible
18	VTU27357	GANISETTI GNANESWARI	100	Eligible
19	VTU24985	HARSHIT LALL GUPT	100	Eligible
20	VTU25149	HARSHPREET KAUR	100	Eligible
21	VTU26915	JHON JUDSON J	100	Eligible
22	VTU24727	K JAIPALREDDY	100	Eligible
23	VTU27379	K MOHAMED SIRAJUDEEN	100	Eligible
24	VTU25877	KASULA RAGHUVEER	100	Eligible

25	VTU25331	KEVIN S	100	Eligible
26	VTU27377	KUSHAL SHAHI	100	Eligible
27	VTU24633	LOKESH S	100	Eligible
28	VTU24810	M ARJUN KUMAR	100	Eligible
29	VTU25195	MADDIPATI CHANDRA SAI PAVAN	100	Eligible
30	VTU27354	MAHALAKSHMI S P	100	Eligible
31	VTU27157	MALLEBOINA JEEVANA RAMA KRISHNA	100	Eligible
32	VTU24696	MEDAM NITHIN KUMAR	100	Eligible
33	VTU24635	MUKESH M	100	Eligible
34	VTU27188	NAVEEN M	100	Eligible
35	VTU26907	PALETI HARSHA SANDEEP RAJ	100	Eligible
36	VTU26803	PANCHADI SRAVAN KUMAR	100	Eligible
37	VTU27061	PARMINDER KAUR	100	Eligible
38	VTU27289	PONUGOTI SARVANTHI	80	Eligible
39	VTU27074	POOJA CHAUHAN	100	Eligible
40	VTU24805	PRADEEP S	100	Eligible
41	VTU25268	R DOYEL	100	Eligible
42	VTU24314	R VILMER SAMUEL	100	Eligible
43	VTU26792	RAJKUMAR K	100	Eligible
44	VTU26670	RAVULAKARI AJAY	100	Eligible
45	VTU26957	RIYA JAIN	100	Eligible
46	VTU25233	S SADISH	100	Eligible
47	VTU24604	S SHYAM SUNDAR	100	Eligible
48	VTU26860	SAVIDIKANI REDDY RESHMA	100	Eligible
49	VTU26932	SHAIK SAKEENA	100	Eligible
50	VTU24907	SHINDE SUSHILKUMAR NANA	100	Eligible
51	VTU27319	SIVAMAYA S	100	Eligible
52	VTU27208	SOHAIL AHMED	100	Eligible
53	VTU24313	SURYA S	100	Eligible
54	VTU27346	VISWANANA VARSHITH SAI	100	Eligible
55	VTU26325	JADHAV SAKSHI KISHOR	100	Eligible
56	VTU27290	MANDALAPU VARSHA	100	Eligible
57	VTU27280	MOHAMMED OLIF P N	100	Eligible
58	VTU27306	NIVETHA S	100	Eligible
59	VTU24950	PILERU RAHEEMA	100	Eligible
60	VTU24533	ANBARASU R	100	Eligible
61	VTU26960	KESANAKURTHI ROHITH VISHAL	100	Eligible
62	VTU24684	S BHAVATHARANI	100	Eligible

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Rangarajan Dr. Sagunthala
R&D Institute of Science and Technology
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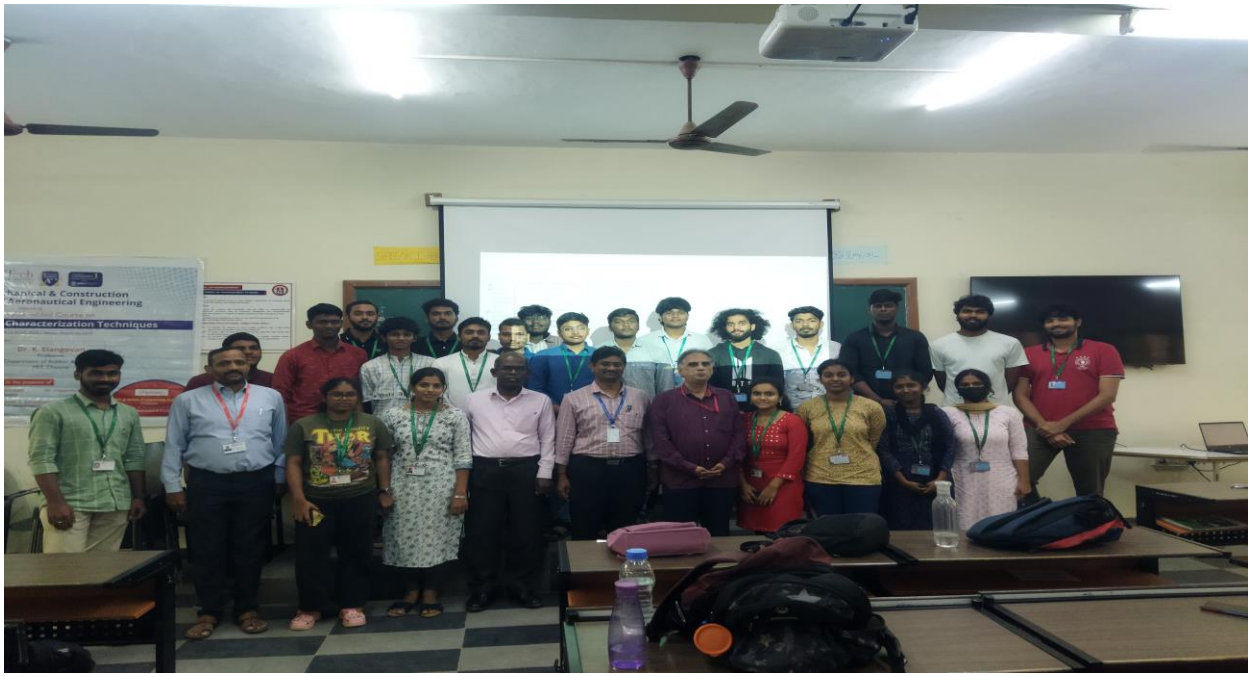

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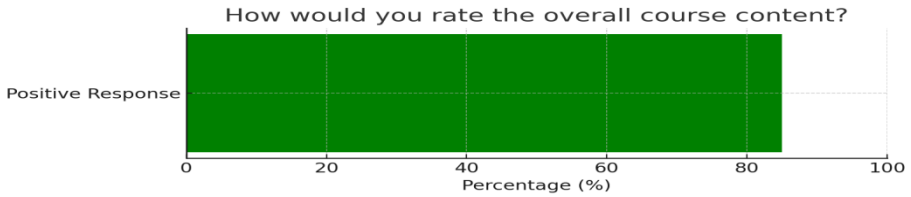
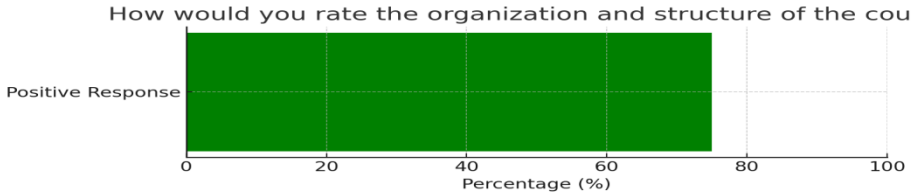
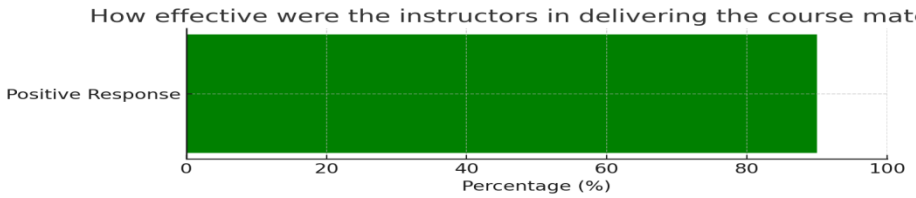
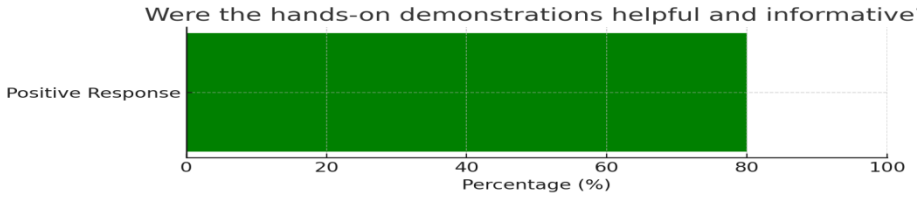
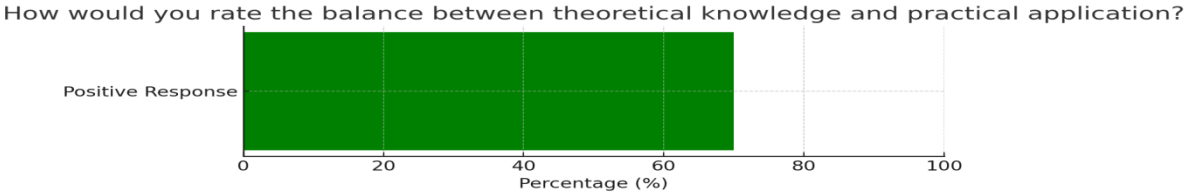
Feedback form

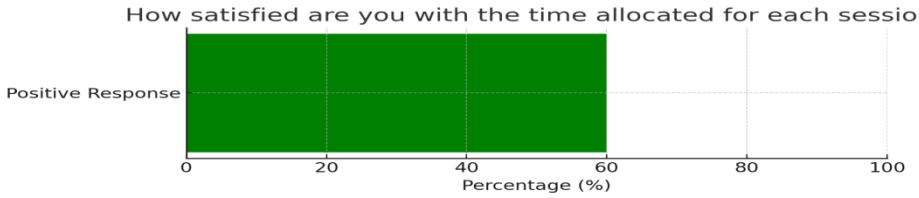


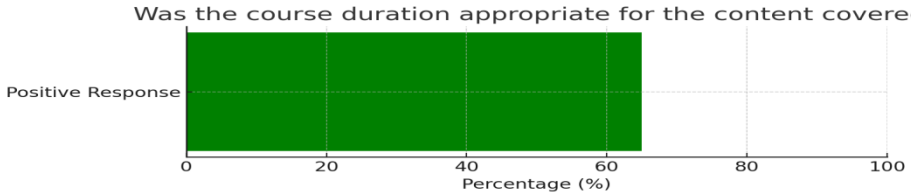


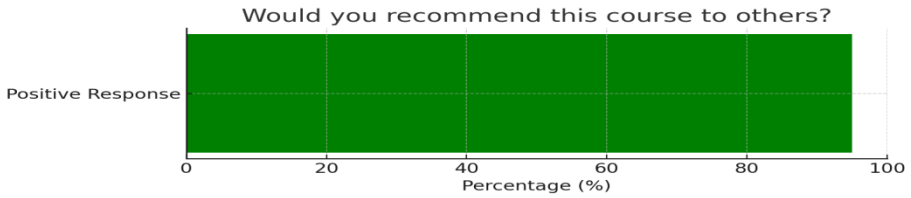












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- Accredited by NAAC with Highest grade A++
- Accredited by NBA under Tier 1 category for 3 Years
- Ranked in the band '11-50' in Innovation category by NIRF India Rankings 2023, the category erstwhile known as Atal Ranking of Institutions on Innovation Achievements (ARIIA)
- Ranked in Times Higher Education (THE) Rankings 2023 in Band 801-1000 in the world by THE World University Rankings 2023 in Engineering
- Ranked in the Band 651-700 in QS Asia University Rankings 2023

Insights

- Industrial Visit: WIL, CSIR-CLRI, IAF Visits
- A consultancy project from GE Aerospace is extended for the duration of six months
- Happy Bon-Voyage International Internship students

Department Vision

Excellence in education and research practices of Aeronautical Engineering.

Department Mission

- Nurture quality education ambiance by employing modern education pedagogies.
- Provide vital state-of-the-art research facilities to students and faculty members with opportunities to create, interpret, apply and disseminate knowledge.
- Develop linkages with world-class research organizations and institutions for excellence in teaching and research.
- Promote Industry Institute linkages; Nurture entrepreneurship

Newsletter – Published by
Department of Aeronautical Engineering,
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Vol.#, Issue #, July 2023

Inside

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HOD'S MESSAGE

Dr. R. Jagan Raj
Head of the
Department-Aero

Dear Students, Faculty, and Enthusiasts of Aeronautical Engineering,

I am delighted to welcome you to the vibrant and innovative Department of Aeronautical Engineering at Vel Tech. Since our establishment in 2007, we have embraced a vision of "Excellence in Education & Research practices in Aeronautical Engineering," and our journey has been nothing short of inspiring.

Our commitment to excellence is evident in every facet of our department. We take immense pride in being home to India's first NBA accredited B.Tech. Aero program, a testament to the quality of education we offer. Through innovative teaching methods, such as the Teachers Developers Initiative and Project Based Learning, we nurture a learning environment that challenges and prepares our students for the dynamic world of aeronautics.

Let's soar to new heights together!

Warm regards,
Dr. R. Jagan Raj
Head of Department,
Aeronautical Engineering Department,
Vel Tech University

NEWLY INTRODUCED COURSES

Embark on an in-depth journey through the computational aspects of aeronautical engineering. Explore wing dynamics, and Testing techniques for aircraft in flight. This courses primes students to contribute effectively to the creation of high-performance, safe and reliable aircraft in the ever-evolving world of aeronautics. Courses listed below.

- *10212AE108 Flapping Wing Dynamics*
- *10211AE203 High Speed Aerodynamics*
- *10211AE214 Aircraft Structural Dynamics*
- *10213AE101Wind Engineering*

ACTIVITY BASED LEARNING

Dr. S. Ganesan has demonstrated flapping flyers in subsonic wind tunnel to analyze the flow pattern for the course *10212AE108 Flapping Wing Dynamics.*

Mr. Rakeshkumar C demonstrated the working of rocket using water rocket for the subject 10211AE109 Rocket and Space Propulsion.

ICT ENABLED TOOLS

Mr. Rakeshkumar C used Flipped class room (ICT tools) for the subject 10211AE109 Rocket and Space Propulsion.

JOURNAL PUBLICATIONS

- Krishnamoorthi, Thiruselvam, **Ganesan Sudalaimuthu**, Damodharan Dillikannan, and Ravikumar Jayabal. "Influence of thermal barrier coating on performance and emission characteristics of a compression ignition engine fueled with delonix regia seed biodiesel." Journal of Cleaner Production 420 (2023): 138413. https://doi.org/10.1016/j.jclepro.2023.138413
- Li, Suiyi, V. Meenakshi, **S. Nithya**, Sulaiman Ali Alharbi, Saleh H. Salmen, Rajasree Shanmuganathan, Li Zhang, and Changlei Xia. "Impact of the combined effect of seawater exposure with wastewater and Fe2O3 nanoparticles on Chlorella vulgaris microalgae growth, lipid content, biochar, and bio-oil production." Environmental Research (2023): 116300. https://doi.org/10.1016/j.envres.2023.116300
- Arunkumar, K., G. Sravanthi, and T. Kumaran. "Experimental investigation of sandwich panels using foam filled corrugated cores." Materials Today: Proceedings (2023). https://doi.org/10.1016/j.matpr.2023.06.354
- Subramani, Nithya, and **Gowtham Gajapathy**. "Numerical analysis on the effect of passive control geometry in supersonic jet mixing enhancement." International Journal of Turbo & Jet-Engines 0 (2023). https://doi.org/10.1515/tjj-2023-0068

PATENT

Name: J. V. Sai Prasanna Kumar

Title: An apparatus for obtaining dispersed Carbon Nanotubes using liquid nitrogen

Publication date: 01/09/2023.

Application No: 2023410526774

BOOKS/ BOOK CHAPTERS

1. Author Name: Prof. Dr. Sai Prasanna Kumar J. V.
   Title: Engineering Materials and Metallurgy
   Publisher: J. V. Sai Prasanna Kumar
2. Author Name: Prof. Dr. Sai Prasanna Kumar J. V.
   Title: Manufacturing Technology(in press)
   Publisher: J. V. Sai Prasanna Kumar
3. Prof. Dr. R. Naren Shankar Edited a book tittled Artifical Intellegence Application In Aeronautical and Aerospavce Engineering

FDP

- Prof. Dr. Sai Prasanna Kumar J. V. participated two day (from 26 & 27/09/2023) program on Thermal barrier coating.
- Mr. Kumaran T, 3-day Face-to-Face FDP on the theme “Inculcating Universal Human Values in Technical Education” organized by All India Council for Technical Education (AICTE) at Vel Tech Dr. Shakunthala Rangarajan R&D Institute of Science and Technology, Chennai from 6th July to 8th July 2023.
- Dr. Joseph J Kakkassery participated in the profession development programme on Smart Manufacturing conducted by NIITTR, Chennai from 03/07/2023 to 07/07/2023.

FDP

- Dr. Joseph J Kakkassery participated in the profession development programme on Industry 4.0 and Internet of Things (IoT) Applications conducted by NIITTR, Chennai from 17/07/2023 to 21/07/2023.
- Dr. Joseph J Kakkassery participated in the profession development programme on Industrial Automation using PLC Pneumatics and Robotics conducted by NIITTR, Chennai from 07/08/2023 to 11/08/2023.

CONFERENCE

1. Prof Dr R Naren Shankar participated and presented a paper titled “Evaluations of Zirconium Coated Surface Attributes on Mechanical Characteristics and Wear Behavior of Nickel Based Super Alloy Material” in the International Conference on Emerging Technologies in Engineering and Science (ICETES) 11&12.082023, Organized by DVR & Dr. HS MIC College of Technology, Kanchikacherla, AP.

2. Prof Dr R Naren Shankar participated and presented a paper entitled An Estimation and Validation of Weibull Distribution Parameters from Failure Data of Nano Composites” in the 7th International Conference On Sustainable Materials and Recent Trends in Mechanical Engineering (SMARTME-2023), organized by School of Mechanical Engineering, Reva University, Bengaluru, held on11&12.08.2023.

3. Prof Dr R Naren Shankar Participated and presented a paper entitled “Enhancing Mechanical Characteristics and Cost-Efficiency of Composite Materials through Hybridization and Nanoparticle Incorporation” at 2nd International Conference on Smart Sustainable Materials and Technologies (ICSSMT 2023), organized by CARE College of Engineering, Trichy , held on 30 & 31.08.2023.

WORKSHOPS

- Dr. Ganesan. S has attended two days (24 & 25.08.2023) workshop on Advanced Composite Technologies for Aerospace Applications, SRMIST.
- Dr. S. Kasirajan and Dr. Ganesan. S has attended one day (08.09.2023) workshop on Design and copy Right Filling Procedures.
- Dr. Ganesan. S has attended two days (26 & 27.09.2023) workshop on Coating Technologies.
- Dr. Joseph J Kakkassery has attended two days (25 & 26.09.2023) workshop on 2D / 3D Radiological Imaging Technologies at IIT-Madras, Tamil Nadu.

FACILITIES CREATED

High-speed jet facilities are created in our propulsion laboratory. Wide range of purpose includes, aerodynamic testing, engine thrust testing, engine pressure testing, engine combustion testing, and engine component testing. These facilities are valuable tools for engineers and researchers in the aerospace industry. It allows students to conduct research and experiments on high-speed jet flows, aerodynamics, and combustion processes. And also, provides valuable insights into the behaviour and performance of jet engines, enabling students to develop advanced

CONSULTANCY

Title: Aviation Generator Prototype Testing

A consultancy project from GE Aerospace is extended for the duration of six months (July 2023 to December 2023) for Second prototype testing and sanctioned the amount of

₹ 15, 00,000.00 (For Extended period)

Project Status - Completed.

EHS (Environmental, Health, and Safety) recommendation provide by the GE EHS head was completed.

New Drive and the remote communication access issues were resolved.

Faculty Members

- Dr. B L Jaiswal
- Dr. Joseph. J Kakkassery

INDUSTRIAL VISIT

CSIR-CLRI (19/07/23)

one-day industrial visit to CSIR – CLRI. The main objective of the institute is to meet the needs of the leather and allied sectors through research, technology development and transfer, training and industrial support and formulation of policies and plan of action that ensures a technology based competitive advantage for Indian leather. It was a wonderful opportunity for the students visited there to learn about the manufacturing process of leather, varieties and restriction policies. Moreover, they were able to see the making of fish leather which is quite unconventional and in future scope.

IAF (17/08/23)

The Indian Air Force Station in Avadi is a major defence establishment located in the city of Chennai, Tamil Nadu. The station is managed by the Indian Air Force Educational & Cultural Society and has an affiliated school called Air Force School, Avadi. The one-day industrial visit for the students was more useful and they came to know about the rules and regulations followed by the Indian air force. Moreover, they were allowed to operate the military truck simulator to know about the operation of it and they were taught about how the fuel was transferred in ancient time and the upgradation of the systems and the firing of rifles.

INDUSTRIAL VISIT

Wheels India Limited:

Department of Aeronautical Engineering faculties visited Wheels India Limited (WIL), ambattur, Chennai along with the SOMC faculties visited Wheels India Limited on 31.07.2023. Manufacturing and testing process of different vehicle wheels were explained by the WIL Engineer.

Ph.D. AWARDED

Mr. I. Saranraj Ph.D. awarded on 29-8-2023 under the supervision of Dr.S.Ganesan

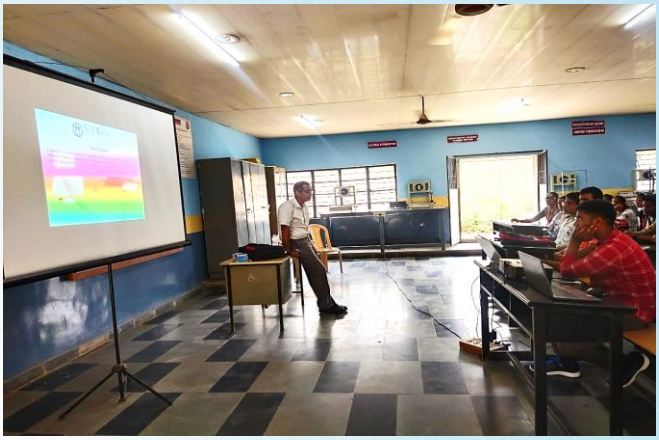
Mr. Ganesan V.G. Ph.D. awarded on 31.10.2023 under the supervision of Prof.Dr.R.Naren Shankar on the topic “Effect of increasing bypass ration on co-flow jet with critical LIP thickness”

International Internship

A student with industry internships, collaborative projects at international institution, start-up experience with TBI support, and career development training for job offers, emphasizing the divers and strong background. List of students attend international internship are as follows

S. No.	Name of the students	University
1	Muhammed Sayan	A Star Singapore, Singapore
2	Thanzeer Yahiya	
3	Reddy Chakrapani	Tamkang university, Taiwan
4	Kamasani Reddappa Reddy	
5	Paspunoori Shashank	
6	Siya Singh	
7	Venkata Durga Sai	National chung Hsing Univeristy, Taiwan
8	Chingkhei Meitei Kshetrimayum	
9	Ram Teja	
10	Apekshya Ghimire	University of Orleans, France
11	Isreal Yvan Ishimwe (Virtual Internship)	National Taiwan Normal university, Taiwan
12	|Awdhesh Pal (Virtual Internship)	
13	Shampreethi S	National Formosa University, Taiwan
14	Momantar Karmakar Upti	Chittagong University of Engineering & Technology (CUET), Bangladesh
15	Aadarsha Pokharel	National Innovation Centre, Nepal

EVENTS ORGANIZED FOR STUDENTS



On 10th August 2023 & 17th August 2023 organized an event on Induction cum Acquaintance Program (ICA) by Dr. Joseph. K.K and Dr. Kasirajan S. The explanation about the activities (Paper Hang Gliders and Water Rockets) and its importance was stressed in these two sessions and delivers the entire scope of the principles in Aeronautical Engineering.

EVENTS ORGANIZED FOR FACULTIES

On 17th August 2023 Dr. Joseph Kakkassery, Dept. of Aeronautical Engg. coordinated an one day FDP on Industrial needs and applications of NDT. As a Speaker Dr. Shyamsunder Mandayam shared his knowledge in this Programme.

UPCOMING EVENTS

Department of Aeronautical Engineering and Aviator Club organizing a workshop from 10 to 13.10.2023 on the topic "Drone Technology and its Applications". Chief guest, Mr.M. Senthilkumar, Principal Member, CoE,FE R&D, TAFE will share his knowledge and experience about the *Application drones in Agriculture sector*.

The section includes:

- Design of UAV
- Drone parts and its Functions
- Simulator Training
- Hands on Experience on Drones
- Drone Rules and Regulations

EDITORIAL BOARD

CONTACT US

Department of Aeronautical Engineering,
School of Mechanical & Construction,
Vel Tech Rangarajan Dr Sagunthala R&D Institute of Science and Technology,
400 feet Outer Ring Road,Avadi,
Chennai – 600 062,Tamil Nadu, India.
hodaero@veltech.edu.in

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- Ranked in Times Higher Education (THE) Rankings 2023 in Band 801-1000 in the world by THE World University Rankings 2023 in Engineering
- Ranked in the Band 651-700 in QS Asia University Rankings 2023

Insights

- Organized workshop on drone technology and its applications
- International collaborative projects.
- Students achieved Best Paper Award .

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Excellence in education and research practices of Aeronautical Engineering.

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- Nurture quality education ambiance by employing modern education pedagogies.
- Provide vital state-of-the-art research facilities to students and faculty members with opportunities to create, interpret, apply and disseminate knowledge.
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Head of Department,
Aeronautical Engineering Department,
Vel Tech University

NEWLY INTRODUCED COURSES

Embark on an in-depth journey through the computational aspects of aeronautical engineering. Explore system identification and scientific computation. This courses primes students to contribute effectively to the creation of high-performance, safe and reliable aircraft in the ever-evolving world of aeronautics. Courses listed below.

- *10213AE212 Data analysis and system identification*
- *10211AE210 Combustion & Gas dynamics*
- *10211AE204 Aircraft design rules and certification*
- *10211AE221 Aircraft stability and control*
- *10213AE205 Computational fluid dynamics*
- *10213AE205 Scientific computation*

INTERNSHIPS

International Internship

A student with industry internships, collaborative projects at international institution, start-up experience with TBI support, and career development training for job offers, emphasizing the divers and strong background. List of students attend international internship are as follows

Saptarshi Maji
University of Tours
France

Aniruddha Das
University of Tours
France

Abhin Bhatta
University of Tours
France

International Internship

T Venkata Krishna
NCH University
Taiwan

Amit Sushil Babu
University of Tours
France

Awadesh Pal
New Orleans
University France

Mohan Rijal
University of Tours
France

Sharadh Kumar Sharma
University of Tours
France

National Internship

A student with industry internships, collaborative projects at National Industries, start-up experience with TBI support, and career development training for job offers, emphasizing the divers and strong background. List of students attend national internship are as follows

Isreal yvan Ishimwe
UCAL R&D -Avironix

M Lalitha Sravya
UCAL R&D -Avironix

K Chaitanya
Raghu Vomsi Aerospace Pvt. Ltd

M Charan
Raghu Vomsi Aerospace Pvt. Ltd

Raghu Vamsi

Workshop on "Drone Technology and its Applications"

The Department of Aeronautical Engineering had conducted a four day workshop on "Drone Technology and its Applications" from 10-10-2023 to 13-10-2023. The workshop was inaugurated by Mr. Senthil Kumar Principal Member, CoE, FE R&D, TAFE . The event began with the chief guest's presentation on the different perspectives of development of drone technology in India followed by a hands on session and flying session for the upcoming days with a lecture on Type certification process and "Drone rules and regulations" by Dr R Jagan Raj Head Aeronautical Department, Vel Tech university and a guest lecture by Dr G Surender on "Different types of Drones".

Name: Dr G Surendar & Dr R Jaganraj

Title: Adjustable frame unmanned amphibious aerial vehicle with extended floats

Granted: 12/12/2023.

Application No: 201841044458

INTELLECTUAL PROPERTY INDIA

क्रम सं/SL No :044169200

सत्यमेव जयते

पेटेंट कार्यालय,भारत सरकार | The Patent Office, Government Of India

पेटेंट प्रमाण पत्र | Patent Certificate

(पेटेंट नियमावली का नियम 74) | (Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	:	480724
आवेदन सं. / Application No.	:	201841044458
फाइल करने की तारीख / Date of Filing	:	26/11/2018
पेटेंटी / Patentee	:	Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology
आविष्कारकों का नाम /Name of Inventor(s)	:	1.Surendar.G 2.Balasubramanian.E 3.Silambarasan M 4.Vikram. P 5.Jaganraj. R 6.Sarasu.P 7.Ramesh Kumar. C

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित *ADJUSTABLE FRAME UNMANNED AMPHIBIOUS AERIAL VEHICLE WITH EXTENDED FLOATS* नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख नवम्बर 2018 के छब्बीसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled *ADJUSTABLE FRAME UNMANNED AMPHIBIOUS AERIAL VEHICLE WITH EXTENDED FLOATS* as disclosed in the above mentioned application for the term of 20 years from the 26th day of November 2018 in accordance with the provisions of the Patents Act,1970.

अनुदान की तारीख : 12/12/2023
Date of Grant :

पेटेंट नियंत्रक
Controller of Patents

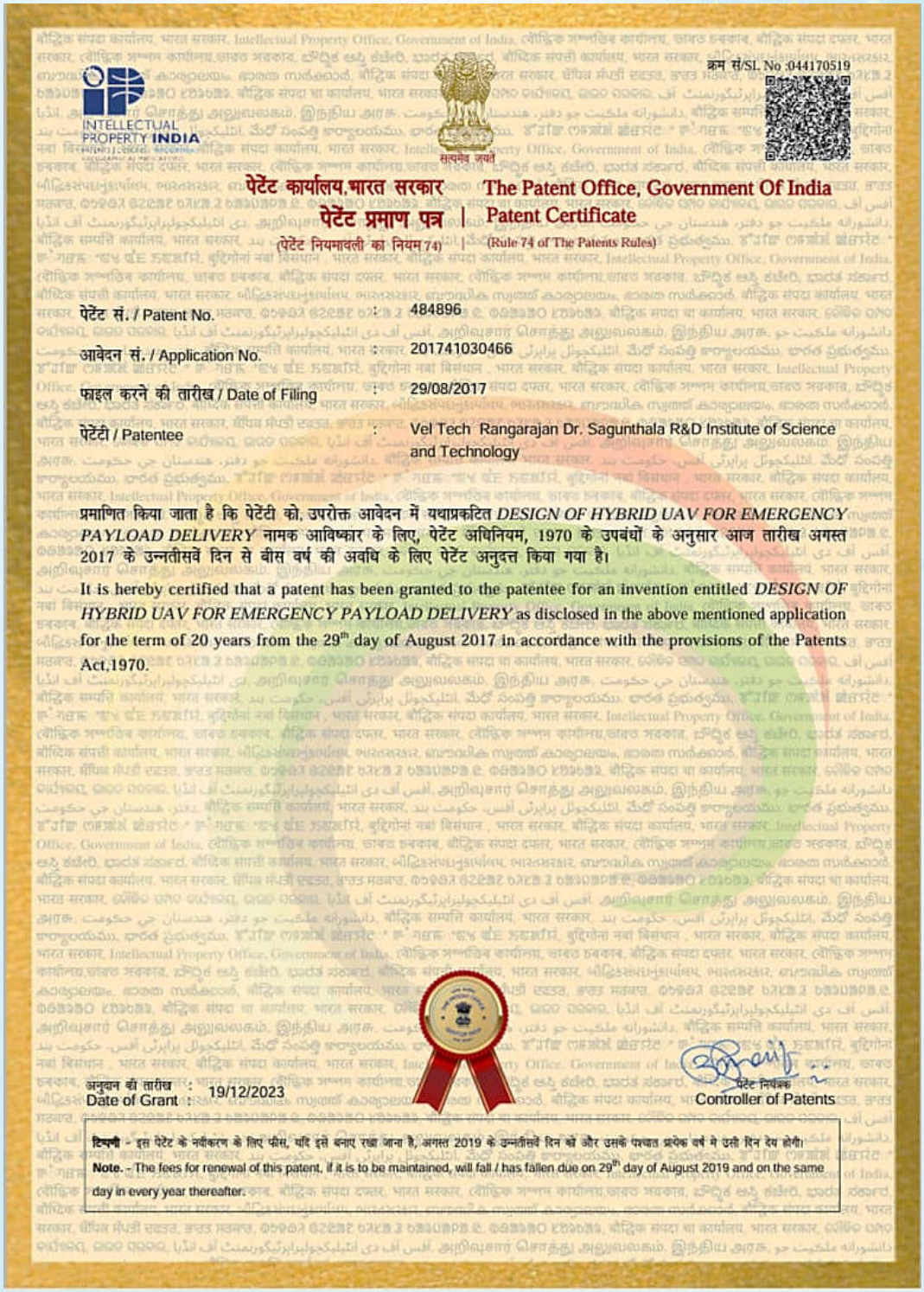
टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, नवम्बर 2020 के छब्बीसवें दिन को और उसके पश्चात प्रत्येक वर्ष मे उसी दिन देय होगी।

Note. - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 26th day of November 2020 and on the same day in every year thereafter.

Title: Design of hybrid UAV for emergency payload delivery

Granted: 19/12/2023.

Application No: 201741030466



क्रम सं/SL No :044170519

INTELLECTUAL PROPERTY INDIA

सत्यमेव जयते

पेटेंट कार्यालय,भारत सरकार | The Patent Office, Government Of India

पेटेंट प्रमाण पत्र | Patent Certificate

(पेटेंट नियमावली का नियम 74) | (Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No. : 484896

आवेदन सं. / Application No. : 201741030466

फाइल करने की तारीख / Date of Filing : 29/08/2017

पेटेंटी / Patentee : Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित *DESIGN OF HYBRID UAV FOR EMERGENCY PAYLOAD DELIVERY* नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख अगस्त 2017 के उन्तीसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled *DESIGN OF HYBRID UAV FOR EMERGENCY PAYLOAD DELIVERY* as disclosed in the above mentioned application for the term of 20 years from the 29th day of August 2017 in accordance with the provisions of the Patents Act,1970.

अनुदान की तारीख : 19/12/2023
Date of Grant :

पेटेंट नियंत्रक
Controller of Patents

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, अगस्त 2019 के उन्तीसवें दिन को और उसके पश्चात प्रत्येक वर्ष मे उसी दिन देय होगी।

Note. - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 29th day of August 2019 and on the same day in every year thereafter.

JOURNAL PUBLICATIONS

- Wasim Khan, M., Elayaperumal, A., Arulvel, S., & **Sivanesh Prabhu, M**. (2023). Influence of Pressureless Sintering under an Inert Atmosphere on Microstructural, Microhardness, and Tribological Properties of Uniaxial Compacted Crab Shell Particles. Journal of Materials Engineering and Performance, 1-13. https://doi.org/10.1007/s11665-023-08991-2
- Scwartz, I., **Naren Shankar**., Kumar, S., Kengaiah, V. & Ethirajan, R. (2023). Effect of velocity ratio and Mach number on thin lip coaxial jet. International Journal of Turbo & Jet-Engines. https://doi.org/10.1515/tjj-2023-0086

FDP

- **Mr.Suthagar.S** 5-day FDP on the theme "Recent Advancements in Materials, Manufacturing and Technology" organized by Swarnandhra College of Engineering & Technology, AP from 30 Oct to 04 Nov 23
- **Mr.Suthagar.S** 5-day FDP on the theme "Emerging Digital Technologies" organized by Vel Tech University, Avadi from 20 Nov to 24 Nov 23.
- **Mr.Suthagar.S** 5-day FDP on the theme "Additive Manufacturing " organized by Vel Tech University, Avadi from 26 Dec to 30 Dec 23.
- **Dr.Ganesan** 5-day FDP on the theme "Machine Learning" organized by Vel Tech University, Avadi from 09-Oct to 13 Oct 23.
- **Mr G. Gowtham 6** day FDP on the theme "Recent Advancements in Materials, Manufacturing and Technology" organized by Swarnandhra College of Engineering & Technology, AP from 30 Oct to 04 Nov 23.
- **Dr. Vinothkumar. M 6** day FDP on the theme "Recent Advancements in Materials, Manufacturing and Technology" organized by Swarnandhra College of Engineering & Technology, AP from 30 Oct to 04 Nov 23.

FDP

- **Mr B Kirubadurai 6** day FDP on the theme “Recent Advancements in Materials, Manufacturing and Technology” organized by Swarnandhra College of Engineering & Technology, AP from 30 Oct to 04 Nov 23.
- **Mr B Kirubadurai** 3 day FDP on the theme “VLSI Design and Modeling” organized by All India Council for Technical education, New Delhi from 14 Nov to 16 Nov 23.
- **S Kasirajan** 5-day FDP on the theme “Additive Manufacturing ” organized by Vel Tech University, Avadi from 26 Dec to 30 Dec 23.
- **Dr M Sivanesh Prabhu** 5-day FDP on the theme “Additive Manufacturing ” organized by Vel Tech University, Avadi from 26 Dec to 30 Dec 23.
- **Dr.G.Boopathy** 5-day FDP on the theme “Cutting Edge Developments and Research Frontiers in ME” organized by SRM, Madurai from 04 Dec to 09 Dec 23.
- **Dr.G.Boopathy** 5-day FDP on the theme “Emerging Digital Technologies” organized by Vel Tech University, Avadi from 20 Nov to 24 Nov 23.
- **Dr.G.Boopathy** 6-day FDP on the theme “Recent Technological Trends in Aerospace Engineering , SRM Institute of Science & Technology, Chengalpattu from 15 Oct to 20 Oct 2023.
- **Dr.G.Boopathy** 6 day FDP on the theme “Recent Advancements in Materials, Manufacturing and Technology” organized by Swarnandhra College of Engineering & Technology, AP from 30 Oct to 04 Nov 23.
- **Dr. Saiprasanna Kumar** 6 day FDP on the theme “Recent Development in advanced manufacturing, Karpagam Academy of Higher Education, Coimbatore from 20 Nov to 25 Nov 23.
- **Dr.Joseph J Kakkasery** 5 day FDP on the theme “National Institute of Technical Teachers Training & Research, Chennai from16 Oct to 20 Oct 23.
- **Mr.Rakesh kumar.C** 5-day FDP on the theme “Emerging Digital Technologies” organized by Vel Tech University, Avadi from 20 Nov to 24 Nov 23.

Title: Aviation Generator Prototype Testing

A consultancy project from GE Aerospace is extended for the duration of six months (July 2023 to December 2023) for Second prototype testing and sanctioned the amount of

₹ 15, 00,000.00 (For Extended period)

Project Status - Completed.

EHS (Environmental, Health, and Safety) recommendation provide by the GE EHS head was completed.

New Drive and the remote communication access issues were resolved.

Faculty Members

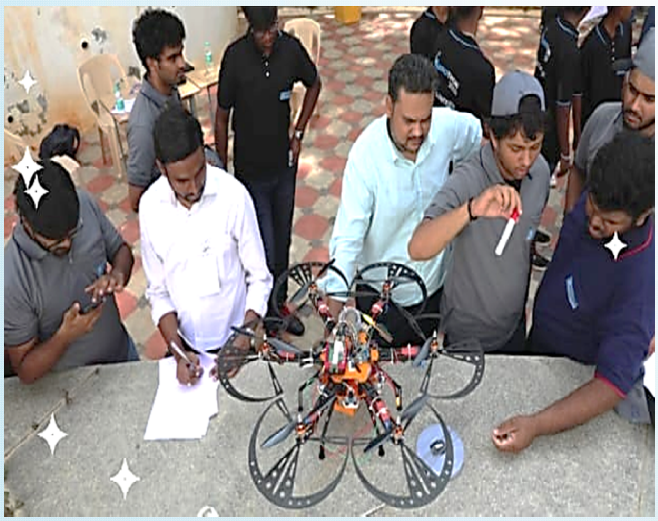
- Dr. B L Jaiswal
- **Dr. Joseph. J Kakkassery**

CONFERENCE

1. **Dr. Ganesan V G** participated and presented a paper titled "Computational Investigation of Ultra High By-pass Thich lip and Thin lip coaxial jets " in the 1st International Conference on Material Analysis and Advanced Manufacturing organized by Department of Mechanical Engineering, Vel Tech University during 31st Oct and 1st Nov 2023.

OUTREACH

- As a recourse person, **Dr G Surendar** delivered a lecture on Innovative Approaches to UAV Design and Development Professional for Development Programme on " Industrial Applications of UAV in National institute of technical teachers training and research (NITTTR), Chennai on 8th Nov 2023.
- **Dr R Jaganraj** invited as one of the Jury members in SAE India organized drone competition "Aerothan 23" held on 17th Nov 2023 at Bangalore .



COMPETITION

- **Mr. Isreal Yvan, Mr. Mohan Rijal, Mr. Awadesh Pal, Mr. madhusudhan Reddy and Mr. Balaji T** of Aeronautical department had participated in Aerothan-2023 represting team Vel-Tech Aero on 16-11-2023 which was conducted by SAEINDIA.

Ph.D. AWARDED

Mr. Ganesan V.G. awarded Ph.D. on 31.10.2023 under the supervision of Prof.Dr.R.Naren Shankar on the topic “Effect of increasing bypass ration on co-flow jet with critical LIP thickness”

Mr Sravanth Kumar of final year has received the best paper award on "Design and fabrication of compact unmanned aerial vehicle" in 1st International Conference on Material Analysis and Advanced Manufacturing (MAAM) on 31st Oct 2023 .

Ms. Irishi Angelina, Ph.D. scholar has received the best paper award on "Influence of velocity ratio on subsonic and correctly expanded sonic coaxial jets with thick lip thickness" in 1st International Conference on Material Analysis and Advanced Manufacturing (MAAM) on 31st Oct 2023 .

1. **Mr. Sravanth Kumar** participated and presented a paper titled "Design and fabrication of compact unmanned aerial vehicle" in the 1st International Conference on Material Analysis and Advanced Manufacturing organized by Department of Mechanical Engineering, Vel Tech University during 31st Oct and 1st Nov 2023.

2. Ms. Irish Angelin participated and presented a paper titled "Influence of Velocity Ratio on Subsonic and Correctly expanded sonic coaxial jets with Thick lip thickness" in the 1st International Conference on Material Analysis and Advanced Manufacturing organized by Department of Mechanical Engineering, Vel Tech University during 31st Oct and 1st Nov 2023.

3. Ms. Irish Angelin participated and presented a paper titled "Effect of Varying the primary jet exit mach number in a coaxial jet maintained at a constant secondary jet exit mach number" in the 1st International Conference on Material Analysis and Advanced Manufacturing organized by Department of Mechanical Engineering, Vel Tech University during 31st Oct and 1st Nov 2023

4. Mr. G Siva participated and presented a paper titled "Influence of Velocity Ratio on Subsonic and Correctly expanded sonic coaxial jets with Thick lip thickness" in the 1st International Conference on Material Analysis and Advanced Manufacturing organized by Department of Mechanical Engineering, Vel Tech University during 31st Oct and 1st Nov 2023.

5. Mr. G Siva participated and presented a paper titled "Effect of Varying the primary jet exit mach number in a coaxial jet maintained at a constant secondary jet exit mach number" in the 1st International Conference on Material Analysis and Advanced Manufacturing organized by Department of Mechanical Engineering, Vel Tech University during 31st Oct and 1st Nov 2023.

CONFERENCE

6. Ms. J Jeba Priyadharshini participated and presented a paper titled "Survey on Enhancing the Physio Chemical Properties of Organic and Inorganic Compounds using shockwave applications" in the 1st International Conference on Material Analysis and Advanced Manufacturing organized by Department of Mechanical Engineering, Vel Tech University during 31st Oct and 1st Nov 2023.

7. Mr. Saptharshi Maji participated and presented a paper titled "Survey on Enhancing the Physio Chemical Properties of Organic and Inorganic Compounds using shockwave applications" in the 1st International Conference on Material Analysis and Advanced Manufacturing organized by Department of Mechanical Engineering, Vel Tech University during 31st Oct and 1st Nov 2023.

EDITORIAL BOARD

CONTACT US

Department of Aeronautical Engineering,
School of Mechanical & Construction,
Vel Tech Rangarajan Dr Sagunthala R&D Institute of Science and Technology,
400 feet Outer Ring Road,Avadi,
Chennai – 600 062,Tamil Nadu, India.
hodaero@veltech.edu.in

Vel Tech
Rangarajan Dr. Sagunthala
R&D Institute of Science and Technology
(Deemed to be University Estd. u/s 3 of UGC Act, 1956)

AVIATORS

Accreditation & Rankings

- Ranked 87th in Engineering Category by NIRF
- Accredited by NAAC with Highest grade A++
- Accredited by NBA under Tier 1 category for 3 Years
- Ranked in the band '11-50' in Innovation category by NIRF India Rankings 2023, the category erstwhile known as Atal Ranking of Institutions on Innovation Achievements (ARIIA)
- Ranked in Times Higher Education (THE) Rankings 2023 in Band 801-1000 in the world by THE World University Rankings 2023 in Engineering
- Ranked in the Band 651-700 in QS Asia University Rankings 2023

Insights

- Organized workshop on Data analysis and system identification
- Three students placed in Capgemini.
- Students achieved Awarded 3rd Prize with 25000 cash prize in AeroGCS .

Department Vision

Excellence in education and research practices of Aeronautical Engineering.

Department Mission

- Nurture quality education ambiance by employing modern education pedagogies.
- Provide vital state-of-the-art research facilities to students and faculty members with opportunities to create, interpret, apply and disseminate knowledge.
- Develop linkages with world-class research organizations and institutions for excellence in teaching and research.
- Promote Industry Institute linkages; Nurture entrepreneurship

Newsletter – Published by
Department of Aeronautical Engineering,
School of Mechanical & Construction
Vol.#, Issue #, March 2024

Inside

ABOUT THE DEPARTMENT

The Department of Aeronautical Engineering at Vel Tech is a testament to innovation and excellence. Established in 2007, its vision of "Excellence in Education & Research practices in Aeronautical Engineering" is realized through a dynamic approach. With India's first NBA accredited B.Tech. Aeronautical Engineering program, innovative teaching methods, and integrated Project Based Learning, the department ensures a top-tier education. State-of-the-art facilities include a High-Speed Bearing Lab and a Drone Technology Lab, driving cutting-edge research. Collaborations with industries and higher institutes enrich practical learning foster the dynamic platform for students and faculty. The department's remarkable performance includes high publication rates, substantial R&D investments, successful placements, and fostering entrepreneurial ventures.

HOD'S MESSAGE

Dr. R. Jagan Raj
Head of the
Department-Aero

Dear Students, Faculty, and Enthusiasts of Aeronautical Engineering,

I am delighted to welcome you to the vibrant and innovative Department of Aeronautical Engineering at Vel Tech. Since our establishment in 2007, we have embraced a vision of "Excellence in Education & Research practices in Aeronautical Engineering," and our journey has been nothing short of inspiring.

Our commitment to excellence is evident in every facet of our department. We take immense pride in being home to India's first NBA accredited B.Tech. Aero program, a testament to the quality of education we offer. Through innovative teaching methods, such as the Teachers Developers Initiative and Project Based Learning, we nurture a learning environment that challenges and prepares our students for the dynamic world of aeronautics.

Let's soar to new heights together!

Warm regards,
Dr. R. Jagan Raj
Head of Department,
Aeronautical Engineering Department,
Vel Tech University

NEWLY INTRODUCED COURSES

Embark on an in-depth journey through the computational aspects of aeronautical engineering. Explore system identification and scientific computation. This courses primes students to contribute effectively to the creation of high-performance, safe and reliable aircraft in the ever-evolving world of aeronautics. Courses listed below.

- *20231AE207 FLIGHT DYNAMICS AND CONTROL*
- *20231AE206 AVONICS*
- *20231AE209 AIRCRAFT NAVIGATION, GUIDANCE AND CONTROL*
- *20231AE312 COMPUTER AIDED ENGINEERING LAB*
- *20231AE108 DRONE RULES AND REGULATIONS*
- *20231AE105 MATHEMATICS FOR AEROSPACE ENGINEERING*

INTERNSHIPS

International Internship

DARIVEMULA MALLESH BABU

Universiti Kuala Lumpur

Malaysian Institute Of Aviation Technology

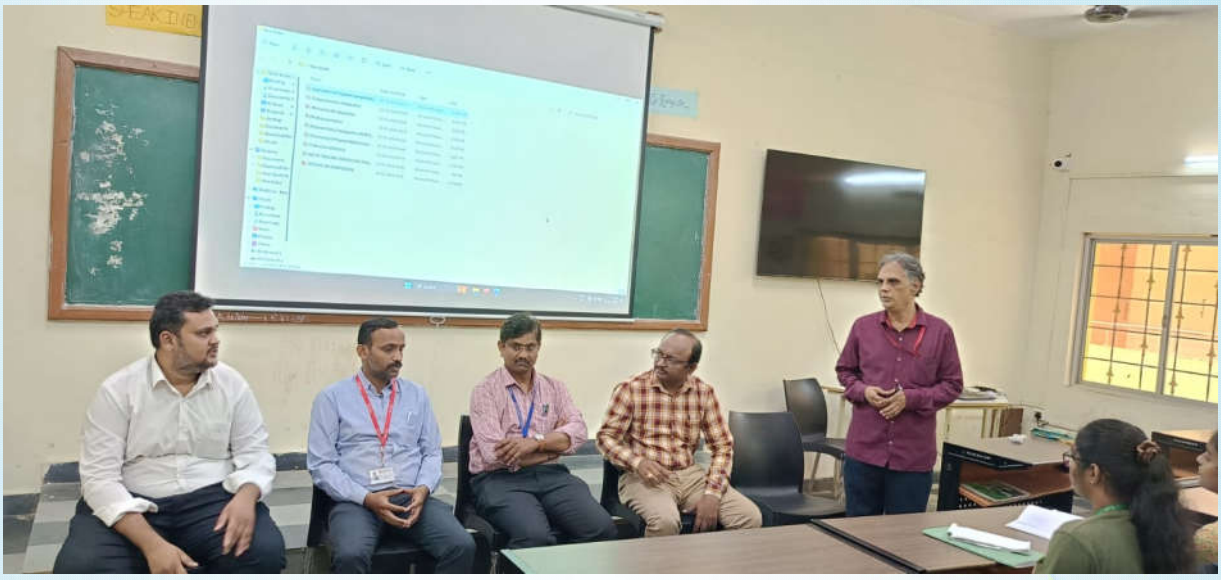
Study Period: (March 2024 – July 2024/ 5 Months)

Dates: 13.03.2024 to 16.03.2024

Resource person: Dr. K. Elangovan, Professor, Department of Rubber and Plastics, MIT, Chrompet.

Topic: Advanced Materials Characterization Techniques.

Organizer : Dr Sai Prasanna Kumar, Professor, Dept. of Aeronautical Engineering, Vel Tech University, Avadi.



Dates: 19.03.2024 to 22.03.2024

Resource person: Mr. S. Subramanian, Co-Founder, Indagatus Solutions Pvt. Ltd., Chennai

Topic: Recent Advances in Gas Turbine Combustion.

Organizer: Mr. C. Rakesh Kumar, Professor, Dept. of Aeronautical Engineering, Vel Tech University, Avadi.

Dates: 25.03.2024 to 27.03.2024 & 30.03.2024

Topic: Finite Element Analysis.

Organizer: Dr. Ganesan, Professor, Dept. of Aeronautical Engineering,
Vel Tech University, Avadi.

S. No	Date	Name of the Expert	Name of the Organization
1	25-03-2024	Dr. Raguraman Munusamy	Associate Professor, IIITDM, Kancheepuram.
2	26-03-2024	Dr. Muruganandhan. R	Associate Professor, Anna University
3	27-03-2024	Prof. Dr.Jayabal. K	Professor and Dean (Academics) IIITDM, Kancheepuram.
4	30-03-2024	Mr. Senthil Kumar	Renault Nissan

Workshop on "Data Analysis & System Identification"

The Department of Aeronautical Engineering had conducted a four day workshop on "Drone Technology and its Applications" from 04.03.2024 to 11.03.2024. Organized by Office of International Relations in association with Department of Aeronautical Engineering. **Prof. Dr. Phang Swee King**, Taylor's University, Malaysia, the event's chief guest delivered presentation on the title "Data Anal ysis & System Identification"

LAVAZA 2024 – EGGCHALLENGE AIRBORNE ADVENTURE

Department of Aeronautical Engineering organized a technical event "EGGCHALLENGE AIRBORNE ADVENTURE" (LAVAZA 2024) on 21.03.2024. Students from various institutions have participated and won the cash prizes.

1st Prize - Poojitha (Civil Dept, Narayana engineering college)

2nd Prize – Divya Sri (ECE Dept, SA engineering college)

SOLID BURNING TEST

A prototype of testing the propellant ignition is made in a small scale without compromising any original characteristic phenomenon. This arrangement is been used to test the propellant ignition time and rate of burning from one stage to another stage. The testing facility consists of electronic timer, electrodes, mini thruster, pressure regulating system and a nitrogen tank fitted to Mild steel sheet. A mixture of Ammonium Nitrate (AN) plus polymer binder Hydroxyl Terminated Poly Butadiene - (HTPB) and Ammonium DiChromate (ADC) catalyst is formulated in a particular ratio with Boron kept in a rectangular dye of 40mm length and 10mm diameter, heated in an oven at 55 deg celsius for 8 days. The mixture is tested in this facility to check burning time and calculation can be done to find its burning rate. This facility costs 15 lakhs and reestablishment costs 1.5 lakhs internally funded through SEED FUND. All tests are done using this facility comes under the project titled, "Experimental studies on Burn rate characteristics of Environmental friendly PyroTechnic compositions".

INDUSTRIAL VISIT

Students from the Department of Aeronautical Engineering attended one day visit "meet the scientist programme" on 5/03/2024 at Tamilnadu Science and Technology centre, Chennai. where the eminent scientist Dr.Swati mohan delivered a speech about her successful journey to be the lead scientist in Mars 2020 Guidance & Controls Operations, NASA's Jet Propulsion Laboratory.

S.NO	VTU NO	NAME	YEAR
1	VTU22794	ANANTHI G	IIYr
2	VTU23295	DASARI VENKATA KAVYA	IIYr
3	VTU24214	VELANGI NEETHUSRI	IIYr
4	VTU24260	AKENA AMARA NAGA TEJA	IIYr
5	VTU24267	ENNADULA NAMITHA ANUSHAKA RAJ	IIYr
6	VTU24634	ANUSHUKA SHARMA	I Yr
7	VTU25268	R DOYEL	I Yr
8	VTU26325	JADHAV SAKSHI KISHOR	I Yr
9	VTU26860	SAVIDIKANI REDDY RESHMA	I Yr
10	VTU26923	ATMAKURI SAHITHI KEERTHANA	I Yr
11	VTU27061	PARMINDER KAUR	I Yr
12	VTU27074	POOJA CHAUHAN	I Yr
13	VTU27289	PONUGOTI SRAVANTHI	I Yr
14	VTU27290	MANDALAPU VARSHA	I Yr
15	VTU27357	GANNISETTI GYANESWARI	I Yr
16	VTU25149	HARSHPREET KAUR	I Yr

The below mentioned students of B.Tech - Aeronautical Engineering Final year are placed in the company “Capgemini” with the salary package of 5 LPA.

Siya Singh

VTU 12011

B.TECH – AERO

Mathari Ramachandaran

VTU 15022

B.TECH - AERO

Mathari Ramachandaran

VTU 15022

B.TECH - AERO

Capgemini

Name: Dr Vinothkumar. M

Title: Portable washing machine

Granted: 11/01/2024.

Design No: 399528-001

INTELLECTUAL PROPERTY INDIA
PATENTS | DESIGNS | TRADE MARKS
GEOGRAPHICAL INDICATIONS

सत्यमेव जयते

ORIGINAL
क्रम सं/ Serial No. : 153224

पेटेंट कार्यालय, भारत सरकार **The Patent Office, Government Of India**

डिजाइन के पंजीकरण का प्रमाण पत्र | Certificate of Registration of Design

डिजाइन सं. / Design No.	:	399528-001
तारीख / Date	:	09/11/2023
पारस्परिकता तारीख / Reciprocity Date*	:	
देश / Country	:	

प्रमाणित किया जाता है कि संलग्न प्रति में वर्णित डिजाइन जो *PORTABLE WASHING MACHINE* से संबंधित है, का पंजीकरण, श्रेणी 15-05 में 1.Dr.Vinothkumar.M 2. Dr. C. Rameshkumar 3.Mr. Puthisikamani. K 4.Dr. G. Manikandan के नाम में उपर्युक्त संख्या और तारीख में कर लिया गया है।

Certified that the design of which a copy is annexed hereto has been registered as of the number and date given above in class 15-05 in respect of the application of such design to *PORTABLE WASHING MACHINE* in the name of 1.Dr.Vinothkumar.M 2. Dr. C. Rameshkumar 3.Mr. Puthisikamani. K 4.Dr. G. Manikandan.

डिजाइन अधिनियम, 2000 तथा डिजाइन नियम, 2001 के अध्यधीन प्रावधानों के अनुसरण में।
In pursuance of and subject to the provisions of the Designs Act, 2000 and the Designs Rules, 2001.

जारी करने की तिथि : 11/01/2024
Date of Issue :

महानियंत्रक पेटेंट, डिजाइन और व्यापार चिह्न
Controller General of Patents, Designs and Trade Marks

*पारस्परिकता तारीख (यदि कोई हो) जिसकी अनुमति दी गई है तथा देश का नाम। डिजाइन का स्वत्वाधिकार पंजीकरण की तारीख से दस वर्षों के लिए होगा जिसका विस्तार, अधिनियम एवं नियम के निबंधनों के अधीन, पाँच वर्षों की अतिरिक्त अवधि के लिए किया जा सकेगा। इस प्रमाण पत्र का उपयोग विधिक कार्यवाहियों अथवा विदेश में पंजीकरण प्राप्त करने के लिए नहीं हो सकता है।
The reciprocity date (if any) which has been allowed and the name of the country. Copyright in the design will subsist for ten years from the date of Registration, and may under the terms of the Act and Rules, be extended for a further period of five years. This Certificate is not for use in legal proceedings or for obtaining registration abroad.

JOURNAL PUBLICATIONS

- **Nithya, S.** (2024). Enhancing sustainable fuel solutions: Castor oil biodiesel with nanoparticles and ammonia, utilizing as a green substitute for diesel engines. Fuel, 368, 131597. https://doi.org/10.1016/j.fuel.2024.131597.
- **Nithya, S.,** (2024). Carbon neutrality with ammonia: An analysis of its feasibility as a fuel for diesel engines fuelled with spirulina microalgae and oxygenated additives. Fuel, 361, 130628. https://doi.org/10.1016/j.fuel.2023.130628
- **Sai Prasanna Kumar, J. V** (2024). Machining characteristics of silane-treated wheat husk biosilica in deionized water dielectric on EDM drilling of Ti-6Al-4 V alloy. Biomass Conversion and Biorefinery, 14(1), 199-206. https://doi.org/10.1007/s13399-022-02308-4
- **Sai Prasanna Kumar, J. V.,** (2024). Machining characteristics of silane-treated wheat husk biosilica in deionized water dielectric on EDM drilling of Ti-6Al-4 V alloy. Biomass Conversion and Biorefinery, 14(1), 199-206.

FDP

- **Ms.Nithya.S** attended 5-day FDP on the theme “Design for manufacturing and advanced automation for industry 4.0” organized by Reva University, Bangalore from 16 Jan to 20 Jan 24.
- **Mr G. Gowtham** attended 5-day FDP on the theme “Design for manufacturing and advanced automation for industry 4.0” organized by Reva University, Bangalore from 16 Jan to 20 Jan 24

FDP

- **Dr. Boopathy.G** attended 5-day FDP on the theme “Design for manufacturing and advanced automation for industry 4.0” organized by Reva University, Bangalore from 16 Jan to 20 Jan 24
- **Mr. Rakesh Kumar C** attended 5-day FDP on the theme “Design for manufacturing and advanced automation for industry 4.0” organized by Reva University, Bangalore from 16 Jan to 20 Jan 24.
- **Dr. Boopathy.G** attended 6-day FDP on the theme “Impact of industry 4.0 on industries and academia” organized by SRM Institute of science and technology, Delhi from 22 Jan to 27 Jan 24.
- **Dr. Boopathy.G** attended 5-day FDP on the theme “Advancements in Aerospace Materials” organized by Hindustan college of Engineering and technology, Coimbatore from 11 March to 15 March 24.
- **Mr.Suthagar.S** 5-day FDP on the theme “Unmanned Aerial Vehicles” organized by IIT Madras from 09 Jan to 13 Jan 24.
- **Dr.M Sivanesh Prabhu** 5-day FDP on the theme “Advances in materials technology for next generation manufacturing” organized by Ballari Institute of Technology, Ballari from 01 Feb to 05 Feb 24.

CONFERENCE

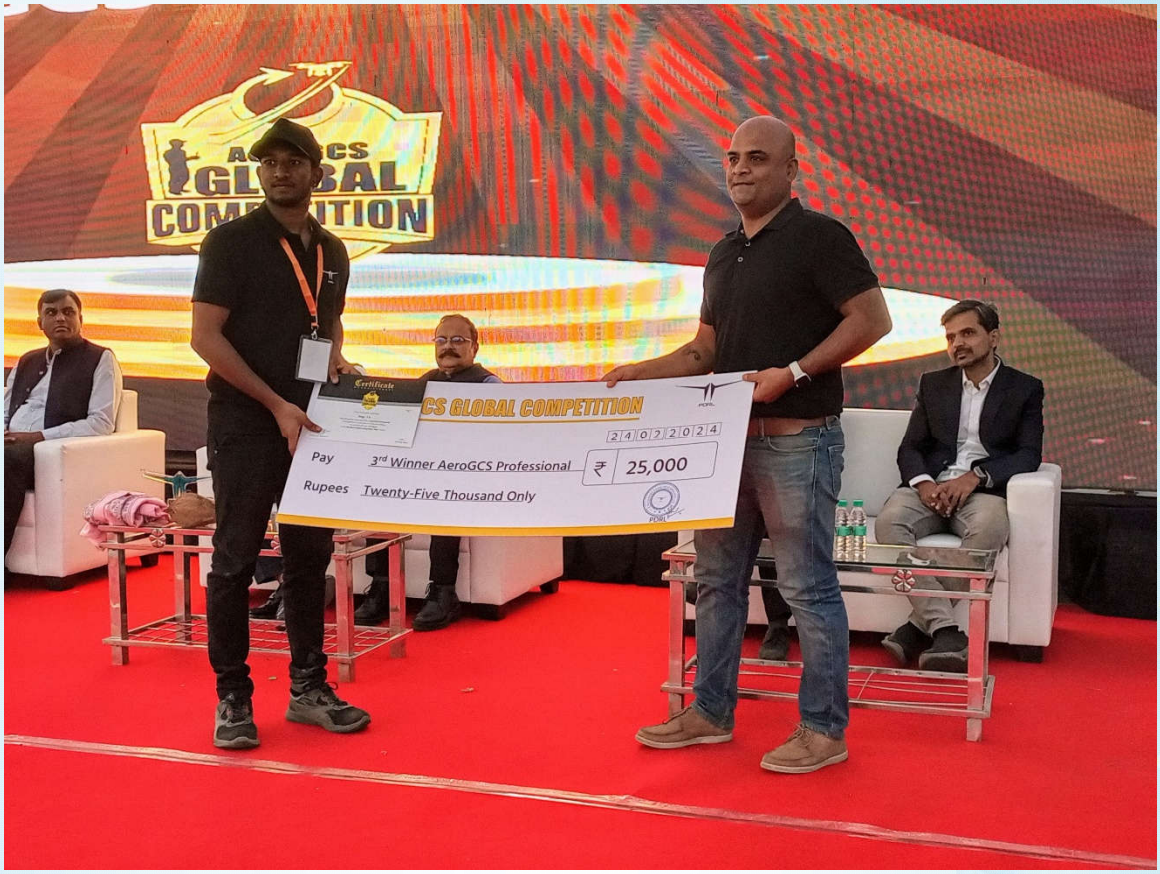
1. **Dr. Ganesan V G** participated and presented a paper titled “Integration and testing of multirotor unmanned aerial vehicle” in the 12th International Conference on contemporary engineering and technology organized by Organization of science and innovative Engineering and Technology (OSIET), Chennai, India during 23rd and 24th March 2024.

AWARDS AND ACHIEVEMENTS

Faculties received cash incentives for outstanding achievements in publications, granted patents, Funded projects and consultancy

S.No	Faculty	Contribution
1	Dr. Jaganraj. R	Patent
2	Dr Ganesan	Publications
3	Dr Sai Prasana Kumar J.V	Project
4	Dr. Narenshankar R	Project
5	Dr. Surendar.G	Patent & Publication
6	Mr. Kirubadurai B	Publication
7	Ms. Nithya S	Publication
8	Mr. Gowtham. G	Publication

AWARDS AND ACHIEVEMENTS



Mr Balaji T.A student of third year has award third prize with 25000 cash prize in AeroGCS Global competition 2024, Nashik .

CONFERENCE

1. **Mr. Sravanth Kumar, V Neethu Sri, A Amara Naga Teja** participated and presented a paper titled "Integration and testing of multirotor unmanned aerial vehicle" in the 12th International Conference on contemporary engineering and technology organized by Organization of science and innovative Engineering and Technology (OSIET), Chennai, India during 23rd and 24th March 2024.

CONFERENCE

2. Mr. Sravanth Kumar, V Neethu Sri participated and presented a paper titled "Investigation of the effects of die and core temperature on the mechanical properties and microstructure of Aluminium alloy" in the 12th International Conference on contemporary engineering and technology organized by Organization of science and innovative Engineering and Technology (OSIET), Chennai, India during 23rd and 24th March 2024.

3. Indra Sai, Mathri Ramachandran participated and presented a paper titled Experimental and Numerical investigation of Bio-Inspired Vertical Axis Wind organized by Turbine National Conference on Wind Engineering, VIT Chennai, India, during 15th and 16th March 2024.

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