Dr. Adarsh S. H.

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Education

	Degree	Year	Institute	Specialization
1	B. E.	2006	National Institute of Technology Karnataka	Mechanical Engineering
2	M. Tech.	2010	RVCE, Bangalore	Machine Design
3	Ph.D.	2020	Indian Institute of Technology, Madras	Material and Metallurgical Engineering

Professional Experience

	Date (from-to)	Designation	Organization
1	2011 – Till date	Assistant Professor	Siddaganga Institute of Technology, Tumakuru

Positions held

(Please give details of any administrative posts, co Ordinator roles/ responsibilities held)

- Institute Start-up activity coordinator.
- Member of SC, ST and BCM Committee at Institute level.
- Examination section coordinator for more than 10 times.
- Department Test coordinator for more than 10 times.
- Department ISO coordinator for 3 years.
- Department Major project coordinator for 2 years.
- Department NBA Criteria coordinator.

Awards and Honors

- Recipient of Elevate Unnati 2021 startup winner from Government of Karnataka.
- **Best paper award** for the paper entitled **"Artifical Neutral Network-Based Prediction of Function Fatigue Behaviour of an Niti Shape Memory Alloy"**

(authored by S. H. Adarsh, Swaminathan G and V. Sampath) presented at the International Conference on Recent Developments in Mechanical Engineering (ICRDME-2022) organized held during June 24-25, 2022, at **Tumakuru, Karnataka**.

- **Best paper award** for the paper entitled "**Modelling of Tensile Behaviour of NiTinol SMA wire by Finite Element Analysis"** (authored by S. H. Adarsh and V. Sampath) presented at the International Conference on Materials Engineering and Smart Materials, ICMESM – 2016, Singapore 26-28 June, 2016.

Courses Taught

Undergraduate Courses

- Kinematics of Machines
- Dynamics of Machines
- Mechanical Vibrations
- Finite Element Methods
- Design of Machine Elements – II
- Elements of Mechanical Engineering
- Research Methodology & IPR

Research Guidance

Sl. no	Name of the Scholar	Title	Year of completion
1	Kiran Jadhav (M.Tech.)	Determination of Transformation Temperatures of SMAs by varying the force using dead weight method	2016
2	Roshith Kumar R V (M.Tech.)	Thermomechanical Processing of FeMnAlNi Shape Memory Alloy	2023

Research Areas

- Additive Manufacturing
- Shape Memory Alloys
- Structure-Property Correlation in Materials
- Thermo-Mechanical Processing of Alloys

Sponsored Projects

Ongoing Projects:

1. Title: **Structural Integrity Evaluation of Extrusion – based 3D Printed Polyether Ether Ketone Parts and Correlation Studies with Thermal Processing**
   Funding Agency: **DST – SERB, (EMEQ Scheme)**
   Amount: **Rs. 42.66 Lakhs**
   Duration: **3 Years**
   Role: **Principal Investigator**

Completed Projects:

1. Title: **Effect of Silver addition on stress corrosion cracking resistance of Aluminium alloy AA-7085**
   Funding Agency: **DRDO, New Delhi**
   Amount: **Rs. 71.14 Lakhs**
   Duration: **3 Years**
   Role: **Co- Principal Investigator**

2. Title: **Additive Manufactured 3D Printed PEEK Parts for Dental Implant Applications**
   Funding Agency: **Govt. of Karnataka, (Startup project)**
   Amount: **Rs. 20.00 Lakhs**
   Duration: **1 year**
   Role: **Principal Investigator**

Publications

Journals

- G. Swaminathan, S. H. Adarsh, and M. Bharathi, “Modified Boltzmann sigmoidal model for predicting functional fatigue behaviour of NiTi shape memory alloys,” *Appl. Phys. A Mater. Sci. Process.*, vol. 131, no. 6, pp. 1–11, 2025, doi: 10.1007/s00339-025-08609-5.
- S. H. Adarsh and M. Nagamadhu, “Effect of Printing Parameters on Mechanical Properties and Warpage of 3D-Printed PEEK/CF-PEEK Composites Using Multi-Objective Optimization Technique,” *J. Compos. Sci.*, vol. 9, no. 5, 2025, doi: 10.3390/jcs9050208.
- A. Jayanthi, S. H. Adarsh, V. Ahirwar, and B. Ravisankar, “Comparative study on constitutive modeling and artificial neural networks of hot deformation behavior of Ferrium® C64 case carburizing steel and simulation of input pinion for military helicopter transmission assembly,” *Int. J. Interact. Des. Manuf.*, 2025, doi: 10.1007/s12008-025-02277-8.
- S. Ganesan, S. Vedamanickam, and A. S. Huchappa, “Influence of applied stress on shape memory characteristics of Ni50Ti45Cu5 (at.%) alloy subjected to thermomechanical cycling,” *Proc. Inst. Mech. Eng. Part L J. Mater. Des. Appl.*, vol. 238, no. 9, pp. 1771–1777, 2024, doi: 10.1177/14644207241232900.
- R. V. Roshith Kumar, S. Prashantha, S. H. Adarsh, and P. C. Arun Kumara, “A Review Article on FeMnAlNi Shape Memory Alloy,” *J. Mines, Met. Fuels*, vol. 70, no. 8, pp. 355–359, 2022, doi: 10.18311/jmmf/2022/31997.
- S. H. Adarsh and M. G. Vijay Kashimatt, “Artificial Neural Network with Taguchi Method for Face Shield Manufacturing Integrating Additive Manufacturing and Injection Molding,” *J. Inst. Eng. Ser. D*, 2023, doi: 10.1007/s40033-023-00607-2.

- G. Swaminathan, V. Sampath, and S. H. Adarsh, “Influence of Aging Temperature on Functional Fatigue Behavior of a Ti50Ni45Cu5 Shape Memory Alloy,” *Trans. Indian Inst. Met.*, vol. 74, no. 10, pp. 2435–2446, 2021, doi: 10.1007/s12666-021-02209-6.
- S. H. Adarsh and V. Sampath, “Prediction of high temperature deformation characteristics of an Fe-based shape memory alloy using constitutive and artificial neural network modelling,” *Mater. Today Commun.*, vol. 22, 2020, doi: 10.1016/j.mtcomm.2019.100841.
- S. H. Adarsh and V. Sampath, “Influence of microstructure on mechanical and magnetic properties of an Fe-Ni-Co-Al-Ta-B shape memory alloy,” *Mater. Res. Express*, vol. 6, no. 7, p. 75701, Apr. 2019, doi: 10.1088/2053-1591/ab127b.
- S. H. Adarsh and V. Sampath, “Hot deformation behavior of Fe–28Ni–17Co-11.5Al-2.5Ta-0.05B (at.%) shape memory alloy by isothermal compression,” *Intermetallics*, vol. 115, 2019, doi: 10.1016/j.intermet.2019.106632.
- S. H. Adarsh and V. Sampath, *Modelling of tensile behaviour of NiTinol SMA wire by finite element analysis*, vol. 895 MSF. 2017. doi: 10.4028/www.scientific.net/MSF.895.8.
- K. D. Jadhav, U. S. Mallikarjun, S. H. Adarsh, and S. Prashantha, “Determination of transformation temperatures of SMAs by varying the force using dead weight method” pp. 166–171, 2015, doi: 10.4028/www.scientific.net/AMM.813-814.166.
- S. H. Adarsh and U. S. Mallikarjun, *Validation of NiTinol SMA characteristics using finite element analysis and closed form solutions*, vol. 856. 2014. doi: 10.4028/www.scientific.net/AMR.856.147.

Editor/ Reviewer of Journal

- Materials Today Communications
- Journal of Materials Engineering and Performance
- Smart Materials and Structures
- Discover Materials

Patents

- Adarsh S. H, Indian Patent, Design Patent, Design Number: 392705-001 Date: 14/08/2023, Date of Issue: 05/10/2023, Extrusion Head for 3D Printing.