BIO-DATA



**1.** **Name** : SANJEEV DAMODAR SURYAWANSHI

**Designation** : Professor and Head

**Department** : Mechanical Engineering

**2. Date of Birth** : 1st June 1967

**3. Father’s Name** : Damodar Jagannath Suryawanshi

**4. Address** : ‘Amey’, 17, Anmol Nagar, In front of Rajiv Gandhi High school

Deopur, Dhule – 424 002

Mobile: 9423080717

**5. E-mail id and Phones** : [sanjeevsuryawanshi1@gmail.com](mailto:sanjeevsuryawanshi1@gmail.com) (02562) 272713 Extn – 350

Mobile: 9423080717

**6. Educational Qualification:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sr.**  **No** | **Exam Passed** | **Title of Degree** | **Board/University** | **Year** | **% of Marks** | **Class** |
| 1 | S.S.C | SSC | Pune | 1983 | 83.71 | First class with DISTINCTION (National merit) |
| 2 | DIPLOMA | D.M.E. | B.T.E. Mumbai | 1987 | 62.54 | First class |
| 3 | BACHELOR | B.E. Mech. | Pune University | 1992 | 60.53 | First class |
| 4 | MASTER | M. E. Mech. (Heat Power) | Shivaji University, Kolhapur | 2004 | 73.80 | First class with DISTINCTION |
| 5 | Ph.D. | Ph.D. Mechanical  Engineering | Shivaji University,  Kolhapur | 2010 | -- | -- |
| 6 | Energy Auditor | Energy Auditor (EA1826) | Bureau of Energy Efficiency (BEE) | 2005 | 65.55 | First class |

**7. Details of Job :( Total Experience – 32years)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr.**  **No** | **Name of Employer** | **Designation** | **From** | **To** |
| 1 | SSVPS’BSD, Polytechnic, Dhule | Lecturer | 26 Sept.1992 | 31 Nov 2002 |
| 2 | SSVPS’BSD, Polytechnic, Dhule | Senior Lecturer | 1 Dec.2002 | 12 Jan 2009 |
| 3 | College of Engineering, Pune | Lecturer | 13 Jan 2009 | 2 Feb 2011 |
| 4 | College of Engineering, Pune | Associate Professor | 3 Feb 2011 | 13 Oct 2014 |
| 5 | SSVPS’ BSD, College of Engineering, Dhule | Professor and Head  Dept. of Mech. Engineering | 14 Oct 2014 | Till Date |

**8. Details of Approval of Services in Teaching –**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr.**  **No.** | **Designation** | **From** | **To** | **University letter No. and Name of University/College** |
| 1 | Lecturer | 26 Sept.1992 | 31 Nov 2002 | 2/NPG/1097/40231Dated 9 Dec.1997  BTE, Mumbai |
| 2 | Senior Lecturer | 1Dec 2002 | 12 Jan 2009 | 2/NPG/1097/40231Dated 9 Dec.1997  BTE, Mumbai |
| 3 | Lecturer | 13 Jan 2009 | 2 Feb 2011 | **COEP/EST-1/2008/6209 Dated Dec 30 2008** |
| 4 | Associate Professor | 2 Feb 2011 | 13 Oct 2014 | **COEP/EST-1/2010-11/728 Dated Feb 1 2011** |
| 5 | Professor | 27 June 2016 | Till date | NMU/18/1197/2016 North Maharashtra University, Jalgaon |

**9. Awards and Achievements**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr. No.** | **Type of award** | **Year** | **Brief Description of Project/Paper** | **Awarding Authority** |
| 1 | AVISHKAR | 2011 | Wind energy harvesting inside the moving train at window by VAWT | Shivaji University Kolhapur |
| 2 | Outstanding Project Award | 2011 | Liquid desiccant Dehumidification System | Forbes Marshall, Pune |
| 3 | AVISHKAR | 2017 | Mixed axis water turbine | NMU |
| 4 | AVISHKAR | 2019 | Solar Disinfector | Doctor Babasaheb Ambedkar Technological University, Lonere, Maharashtra |
| 5 | Gaurav Guruvaryancha | 2021 | Work in teaching learning and research | Divya Marathi (Dainik Bhaskar group) |
| 6 | I2OR | 2022 | Innovative Educator | International Institute of Organised Research (I2OR) |
| 7 | Best research Paper Award | July 2022 | Evaluating Frontal Crash Test of Developed Vehicle Chassis Frame Structure to Identify Crashworthiness Through Scaled Model for Injury Reduction | Dept. of Mechanical Engg.Sandip University, Nasik |
| 8 | Rotary Nation Builder award | 2022 | Rotary Nation Builder award | Rotary international, Rotary club of Dhule cross road |
| 9 | First and second prize of Rs 1 lakh In Innovation Pavilion at MET + HMT 2022 conference, Mumbai | 2022 | 1.Design, development and evaluation of solar tunnel dryer for seasoning and straightening of bamboos  2.Efficient Solar Distillation System | ASM international |
| 10 | Material Advantage Students Charter  Titled *“SSVPS Material Advantage Chapter”* | 2023 | Faculty Adviser | ASM international |
| 11 | BEST RESEARCH PAPER | 2022 | Evaluating Frontal Crash Test of Developed Vehicle Chassis Frame Structure to Identify Crashworthiness Through Scaled Model for Injury Reduction | ICETET-2022, Sandeep Foundation Nasik |
| 12 | AVISHKAR (University level) | 2023 | Design, development and evaluation of solar tunnel dryer for seasoning and straightening of bamboos | Doctor Babasaheb Ambedkar Technological University, Lonere, Maharashtra |
| 13 | AVISHKAR Zonal | Dec 2023 | Three Projects of UG under my Guidance Two Got Gold medal and one Bronze Medal | Doctor Babasaheb Ambedkar Technological University, Lonere, Maharashtra |
| 14 | AVISHKAR (State level) Post PG Category | 2023 | Development of Impact Energy Absorbing systems for vehicle (Post PG) | KBC NMU, Jalgaon |
| 15 | First, second and Third prize of Rs 1 lakh In Innovation Pavilion at MET + HMT 2022 conference, Mumbai |  | 1.Sustainable Ventilation  2.Modular Solar Dryer cum Disinfector  3.Hemisprerical Solar Water Heater | ASM international |

**10. Patent awarded:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sr. No.** | **Nation** | **Patent Application No.** | **Name of the Patent** | **Date of Filing** | **Date of Award** | **Patent No.** |
| 1 | India | 201621022124 | Curved Surface Absorber Type Solar Fluid Heater | 28-12-2016 | Oct-21 | 378587 |
| 2 | US | P8023US00 | Curved Surface Absorber Type Solar Fluid Heater | 06-05-2019 | Oct-21 | PCT Pub No. WO2018/122870 |
| 3 | China | PCT/IN2017 /050619 | Curved Surface Absorber Type Solar Fluid Heater | 06-04-2019 | Oct-21 | PCT Pub No. WO2018/122870 |
| 4 | India | 2185/MUM/2011 | Multipurpose Cooling Apparatus | 02-08-2011 | Jan-21 | 356049 |
| 5 | India | 1753/MUM/2015 | Multipurpose Hollow Hemispherical Solar Collector | 01-05-2015 | Sep-21 | 377915 |
| 6 | India | 6386/  E-2/1040/2016-MUM | Brick Box Type Solar Cooker | 11-04-2016 | Mar-23 | 424247 |
| 7 | India | 2728/  E-2/ 315/ 2018-MUM | Solar Collector Using Plastic Glazing | 16-02-2018 | Sept-23 | 455451 |
| 8 | India | 1753/MUM/2015 | Modular Solar dryer | 03-11-2020 | 28 March 2024 | 530948 |
| 9 | India | 201621000959 | Self-Cleaning Steps | 11-01-2016 | 6 March 2024 | 521043 |
| 10 | India | 201621015234 | Pedal operated oscillating cylinder  reciprocating pump | 02-05-2016 | 13June 2024 | 541810 |

**11. Patent Applied:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr. No.** | **CBR No / Reference No.** | **Patent Application No.** | **Name of the Patent** | **Date of Filing the patent** |
| 1 | 6386/  E-2/1040/2016-MUM | 201621012701 | Brick Box Type Solar Cooker | 11-04-2016 |
| 2 | 9157/ E-2/886/ 2017-MUM | 201721013090 | Ice to Water Converter Cum Water Treatment Apparatus Based on Solar Energy | 12-04-2017 |
| 3 | 6735/ E-2/ 771/ 2018-MUM | 201721013090 | Curved Surface Absorber Type Foldable Solar Fluid Heater | 11-04-2018 |
| 4 | TEMP/E-1/44626/2018- MUM | 201821041516 | Solar Cooker with Heat Storage | 02-11-2018 |
| 5 | TEMP/E-1/8803/2020-MUM | 202021008250 | Sliding Vehicle Chassis frame to minimize the intensity of frontal | 27-02-2020 |
| 6 | TEMP/E-1/9330/2020-MUM | 202021008734 | Sliding and Interlocking vehicle chassis frame | 29-02-2020 |
| 7 | TEMP/E-1/2480/2021-MUM | 202121002275 | Vehicle Chassis Frame with sliding and Interlocking System | 18-01-2021 |
| 8 | TEMP/E-1/3541/2021-MUM | 202121003496 | Solid Damping System with Variable Length Facility | 27-01-2021 |
| 9 | TEMP/E-1/22107/2022-MUM | 202221019975 | Wood Seasoning Cum Straightening Device | 01-04-2022 |
| 10 | TEMP/E-1/24904/2022-MUM | 202221022532 | Solar Distillation System with Evaporative Surface Augmentation | 16-04-2022 |
| 11 | 202023047973 18/251,584 | WO2022/097170 A1 | Modular Solar Dryer (US) | 03-05-2023 |
| 12 | PCT/IN2021/051048 | P00202304299 | Modular Solar Dryer  (Indonesia) | 17-05-2023 |
| 13 | PCT/IN2021/051048 | WO 2022/097170 | Modular Solar Dryer (Vietnam) | 02-06-2023 |
| 14 | PCT/IN2021/051048 | PI2023002688 | Modular Solar Dryer (Malesia) | 27-05-2023 |

**12. Achievements/Research project grants:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sr.**  **No.** | **Project** | **Sanctioning Year** | **Year of completion** | **Brief Description of project** | **Cost of Project in Rs** | **Sanctioning Authority** |
| 1 | Energy Efficiency Improvement Program | 2011 | 2012 | Energy Efficiency Improvement Program in COEP hostel campus installations of SWHS of appx.25 thousand LPD, LED street lighting, fan regulators, (FTL, T5) | **Rs 25 Lacks** | Govt. of Maharashtra (MEDA) |
| 2 | Installation of 6 kW mixed axis water turbine on right canal of Akkalpada Dam. | 2018 | 2020 | It will generate electrical energy by harvesting kinetic energy of flowing stream. Generated power is being utilized at dam location itself if excess can be pumped into the greed | **2.96 Lacks** | District Planning Commission  (DPC) |
| 3 | Design development of Tubular hemispherical Solar Water Heater | 2018 | 2019 | 500 LPD solar water heater system is installed at boy’s Hostel | **40000** | JSS Air Technology Pune and legend Irrigation System Nasik |
| 4 | Design, development and analysis of sustainable ventilation system for thermal comfort in building | 2023 | 2025 | Sustainable ventilation system for thermal comfort in building specifically in sheet metal roof top building. Developing simulation module using Simulia software of Dassault Systems | **4 Lacks** | “Dassault Systèmes Foundation” |
| 5 | Development of Large Capacity Hemispherical Solar Dryer (HSD) for Rural Ecosystem | 2025 | 2025 | The modular hemispherical solar dryer maximizes the internal volume of the drying chamber while minimizing insulation requirements. This design makes it suitable for drying and disinfection applications along with retention of colour, aroma, flavour and nutritional content are added features. | **8.26**  **Lacks** |  |

**13 Recognition:**

**Recognized PhD guide in Mechanical Engineering from October 2017 at KBC North Maharashtra University, Jalgaon**

**14 Details of Research Paper:**

**14.1 National conferences:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr.** | **Title of Paper** | **Title of Conference** | **Organizer of Conference and Place** | **Year of Conference** |
| 1 | Tubular Heat Exchanger | National Conference at. ‘eTIME04’ A | KDK College of Engg., Nagpur | 2004 |
| 2 | Amalgamation of Passive Architecture and Non-Conventional Energy Sources for human Comfort’ | National Conference on ‘Energy and Fuel Issues for Future’ (NCEFIF- 04), | PIET Pune (COEP) | 2004 |
| 3 | Performance analysis of waste to best solar water heater | National conference on energy and environmental for sustainable development 5-6 July 2022 | Govt. College of Engineering and research, Avasari Khurd, Taluka Ambegaon, District, Pune | July 2022 |
| 4 | Design, development and evaluation of solar tunnel dryer for seasoning and straightening of bamboos | National conference on energy and environmental for sustainable development 5-6 July 2022 | Govt. College of Engineering and research, Avasari Khurd, Taluka Ambegaon, District, Pune | July 2022 |
| 5 | Experimental and Numerical Simulation of Flows over Wetted Surfaces of Different Cross Section Profile Pipes | National conference on energy and environmental for sustainable development 5-6 July 2022 | Govt. College of Engineering and research, Avasari Khurd, Taluka Ambegaon, District, Pune | July 2022 |
| 6 | Performance of Natural Ventilation System in Winter Season | Inventions and Innovations in Science and Technology (I2ST-2K24) | Shri Chhatrapati Shivaji Maharaj college of Engineering, Nepti, Ahmednagar | 04th and 05th, April 2024. |

**14.2 International conferences:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr.**  **No** | **Title of Paper** | **Title of Conference** | **Organizer of Conference and Place** | **Year of Conference** |
| 1 | Natural Convection Heat Transfer Enhancement in Horizontal Rectangular Fin Array with Inverted Notch | 18th National and 7th ISHMT-ASME heat and Mass Transfer Conference, | IIT Guwahati, | 2006 |
| 2 | Natural Convection Heat Transfer Enhancement in Horizontal Rectangular Fin Array with Inverted Notch | Notch’19thNational and 8th ISHMT-ASME Heat and Mass Transfer Conference | JNTU Hyderabad, | 2008 |
| 3 | Innovative Evaporative Cooling for Domestic Applications | International Conference on Emerging Trends in Engineering ICETE2010. | Dr. J. J. Magdum College of Engineering,Jaysingpur Sangli | 2010 |
| 4 | Schlieren Shadowgraph Flow Visualization Studies of Horizontal Rectangular Fin Arrays under Natural Convection | Poster Presented in **ASME**. International Mechanical Engg. Congress and Exposition 09 ***(IMECE)*** at | International Mechanical Engg. Congress and Exposition 09 ***(IMECE)* Florida U.S** | 2009 |
| 5 | Flow Patterns using Smoke Technique from Inverted Notched Horizontal Rectangular Fin Arrays, Losing Heat in Natural Convection Conditions | Poster Presented in **ASME**. International Mechanical Engg. Congress and Exposition 09 ***(IMECE)*** at | International Mechanical Engg. Congress and Exposition 09 ***(IMECE)* Florida U.S** | 2009 |
| 6 | Efficient techniques of Air Conditioning | I-COST 2011 | SSVPS B S Deore, College of Engineering, Dhule | 13 – 15  Jan 2011 |
| 7 | Shape Optimization and CFD Analysis for Nozzle in Low Wind Velocity Regime for Natural Ventilation | I-COST 2011 | SSVPS B S Deore, College of Engineering, Dhule | 13 – 15  Jan 2011 |
| 8 | Efficient techniques of Air Conditioning | WCE-2011 | World Congress on Engineering 2011 (WCE 2011) in London, U.K. | 6-8 July, 2011 |
| 9 | Solar dryer cum sterilization system | National Conference on Energy and Sustainable Development, | College of Engineering Pune | 28 -29 Feb.2012 |
| 10 | Wind Energy Harnessing in Moving Trains | National Conference on Energy and Sustainable Development, | College of Engineering Pune   ISSN: 2319-6890 | 28 -29 Feb.2012 |
| 11 | Solar dryer cum sterilization system | National Conference on Energy and Sustainable Development, | College of Engineering Pune | 28 -29 Feb.2012 |
| 12 | Bio-wastes for Heating Water | National Conference on Energy and Sustainable Development, | College of Engineering Pune | 28 -29 Feb.2012 |
| 13 | Energy Conservation Opportunities at CoEP Hostel Campus | National Conference on Energy and Sustainable Development, | College of Engineering Pune | 28 -29 Feb.2012 |
| 14 | CFD simulation of solar chimney for natural ventilation | National Conference on Energy and Sustainable Development, | College of Engineering Pune | 28 -29 Feb.2012 |
| 15 | AAC Solar Cooker | International conference on recent trends in Engineering and Technology | SNJB’s College of Engineering Chandwad | 28 -30 April 2016 |
| 16 | Analysis of Vehicle Accidents in a Parameter of Quantitative study and Evaluation of Safety Parameters | 2 nd international conference and exposition on Advances in Mechanical Engineering (ICAME-2022) | College of Engineering Pune | 23 – 25 June 2022 |
| 17 | Evaluating Frontal Crash Test of Developed Vehicle Chassis Frame Structure to Identify Crashworthiness Through Scaled Model for Injury reduction | International conference on Emerging trends in Engineering and Technology | Department of Mechanical Engineering,  Sandip Institute of Engineering and management, Sandip foundation, Nashik | 20 – 21 July 2022 |
| 18 | Pebble Bed Thermal Storage for Building Cooling with Evaporative Cooling System | 4th International Conference on Engineering and Technology and business Management (ICAETBM) | NMVPM’s and PCET’s Nutan Maharashtra Institute of Technology,Pune, (NMIET) | 24-25 May 2024 |
| 19 | Developments in natural ventilation: a survey | International conference on Smart Technologies for Energy, Environment & Sustainable Development (ICSTEESD-20) | G H Raisoni College of Engineering, Nagpur, Maharashtra, INDIA | 4-5 December, 2020 |
| 20 | MET+HTS 2024 | It's fifth edition of International Exhibition and Conference on Materials, Engineering, technology and advances in Heat Transfer MET+ HTS 2024 | ASM International Mumbai exhibition center | 4-6 Sept 2024 |

**14.3 Journal Publications :( International)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sr.No | Title of Paper | Name of Journal | ISSN No. | Date | Place |
| 1 | “Natural Convection Heat Transfer from Horizontal Rectangular Inverted Notched Fin Arrays”, | ASME Journal of Heat Transfer Vol.131, Iss.8 | 0022-1481 | Aug.2009 | US |
| 2 | “Parametric Study of Rectangular Inverted Notched Fin Arrays in Natural Convection Heat Transfer”, International Journal of Computing and Applications | International Journal of Computing and Applications (**IJCA**)Vol. 4 No.2 | 0973-5704 | December 2009 | Gaziabad, U.P. India |
| 3 | “Natural Convection Heat Transfer from Horizontal Rectangular Inverted Notched Fin Arrays” | International Journal of Engg. Research and Industrial Applications (**IJERIA**) Vol.2 No.VII. | 0974-1518 | 2009 | Pune |
| 4 | “Flexible Coupling-A New Approach" | International Organization of Scientific research **IOSR** Jouranal.Vol.6 | 2278-8727 | 2013 | Ghaziabad |
| 5 | ”Effect on Comfort using Evaporative cooling assisted building Ventilation with rooftop ventilators” | International Journal of Engg. Research and Technology (**IJERT**) | 2278-0181 | 2014 | Gandhi Nagar Gujrat |
| 6 | CFD Analysis of Double Pass Foldable Cum Portable Solar Air Heater | International Research Journal of Engineering and Technology (IRJET) | e-ISSN: 2395 -0056  p-ISSN: 2395-0072 | 2017 | Fast Track Publication India |
| 7 | Design and Virtual Validation of Ambulance Stretcher as per Automotive Industry Standard | International Journal of Innovative Research in Science, Engineering and Technology | ISSN(Online): 2319-8753 ISSN (Print) : 2347-6710 | 2017 | Tamilnadu, India |
| 8 | Design and Analysis of Shaft Used in SelfDriven Step Mechanism by Human Weight | Imperial Journal of Interdisciplinary Research (IJIR) | ISSN:2454-1362 | Vol-3, Issue-2, 2017 | http://www.onlinejournal.in/ |
| 9 | Heat Transfer Analysis of Autoclaved Aerated Concrete (AAC) Brick Box Type Solar  Cooker with Side Loading | International Journal of Advance  Research and Innovative Ideas In Education | ISSN(O)2395-4396 | 2019 | New Delhi |
| 10 | Hydrodynamic Analysis of Spar buoyancy Platform for Floating Vertical Axis Wind Turbine in Shallow Water | International Journal of Advanced Science and Technology Vol. 29, No. 7, (2020), pp. 8683-8696 | ISSN: 2005-4238 IJAST | 2020 | PO Box 5014, Sandy Bay TAS 7005, Australia |
| 11 | Analysis of Vehicle Accidents in a Parameter of Quantitative study and Evaluation of Safety Parameters | Materials today | Elsevier Publications | 16 September 2022 | https://doi.org/10.1016/j.matpr.2022.09.052 |
| 12 | Evaluating Frontal Crash Test of Developed Vehicle Chassis Frame Structure to Identify Crashworthiness Through Scaled Model for Injury reduction | Mathematical Statistician and Engineering Applications | ISSN: 2094-0343  2326 9865 | 19 July2022 | https://philstat.org/index.php/MSEA |
| 13 | Thermal Analysis of Copper Tube Receiver of Solar Parabolic Dish Collector using Computational Fluid Dynamics | International Journal of Advances in Engineering and Management (IJAEM) | ISSN :2395-5252 | July 2022 | https://www.ijaem.net/ |
| 14 | Thermal performance analysis of serpentine tube flat plate collector used for Effluent Treatment | The Indian Journal of Technical education (ISTE Journal) | ISSN : 0971 3034 | July 2023 |  |
| 15 | Experimental Investigation of false ceiling using bubble sheet for sustainable ventilation | ID: MSME23013 is accepted for MSME-2023 publications in journals At BIT Ranchi | **ISSN: 2584-0495**  https://doi.org/10.5281/zenodo.13329256 | July 2024  **Vol. 2, Issue 7, pp. 1010-1016** |  |
| 16 | "A Recapitulation of Solar Dryers in Realm - Evaluating Geometry, Modes, Thermal Energy Storage, and Applications in Agricultural Produce.” | Journal of Thermal Engineering, 2024 | 2024, (SCOPUS), IF:1.1. | Vol.: 10, Issue: 4, |  |
| 17 | Pebble Bed Thermal Storage for Building Cooling with  Evaporative Cooling System | isteonline journal | Sept 2024 | Vol 47 Special issue | [www.isteonline.in](http://www.isteonline.in) |
| 18 | Design Development of a Hemispherical Solar Air Heater as a self-Heated tent | Materials Proceeding a Journal from ASM INDIA INTERNATIONAL TRUST | Oct 2024 | Vol.2 issue 1 |  |
| 19 | Sustainable Ventilation | Materials Proceeding a Journal from ASM INDIA INTERNATIONAL TRUST | Oct 2024 | Vol.2 issue 1 |  |
| 20 | Development and efficiency Analysis of a hemispherical Solar Dryer cum Disinfector | Materials Proceeding a Journal from ASM INDIA INTERNATIONAL TRUST | Oct 2024 | Vol.2 issue 1 |  |

**15 National and International conferences: 24 Papers**

**16 International Journal Publications: 15 Publications**

**17 Special Lectures Delivered: 65+ on Energy Conservation, Audit and Innovations in Solar Thermal**

**Applications, IPR etc.**

**18 Patent filed (24) /granted (10)**

**1 Indian patent granted on multipurpose evaporative cooling**

***2* Indian patent granted on multipurpose hollow hemispherical solar collector**

***1* Indian patent granted on curved surface absorber type solar fluid heater**

***2* international Patent Granted: 01 in USA, 01 in China (Solar Water Heater)**

**1 Indian Patent is granted on Brick Box Type Solar Cooker**

**1 Indian Patent is granted on Solar Collector Using Plastic Glazing**

**1 Indian Patent is granted on self-cleaning step**

**1 Indian Patent is granted on Pedal operated oscillating cylinder**

**reciprocating pump**

***14 P*atents filed and in process**

**One PhD Awarded, Guiding 5 PhD. Students**

I declare that the above furnished information is correct to the best of my knowledge and belief.

Signature Date:20/05/2025

**Dr. Suryawanshi Sanjeev Damodar**

Professor and Head Place: Dhule

Mechanical Engineering Department,

SSVP Sanstha's, Bapusaheb Shivajirao Deore,

College of Engineering, Dhule-424002