



# DR. S. R E N O L D E L S E N

ASSOCIATE PROFESSOR  
DEPARTMENT OF DESIGN AND AUTOMATION,  
SCHOOL OF MECHANICAL ENGINEERING, VIT VELLORE



## ABOUT

A passionate faculty with an exceptional blend of teaching, skill development, and research practises. Gains inspiration and motivation from activities in the field of research and academic. Have proven proficiency in the research field with 4 SCI Journals, 20 SCOPUS Indexed Journals and 2 indexed Journal publications, three book chapters as well as have registered 5 patents. Delivered many guest lectures and conducted more than 10 workshops, and attended more than 15 FDP's and workshops to hone teaching skills also presented more than 20 research papers in various national and international conferences.

## EXPERIENCE

With more than 12 years of teaching experience, he has 10 years of hands on experience in the areas of Design, Advanced Ceramics, and Finite Element Analysis. He worked in design and analysis of boiler components for a BHEL sponsored consultancy project in Association with National Institute of Technology-Trichy (NITT).

DESIGNATION AND PERIOD	INSTITUTION
Associate Professor (May 2018 Till Now)	Vellore Institute of Technology - Vellore
Assistant Professor (Sep 2017 – April 2018)	SRM Institute of Technology - Chennai
Assistant Professor (June 2012 – Sep 2017)	MIET Engineering College - Trichy
Senior Research Fellow (Jan 2010 – Jan 2012)	National Institute of Technology - Trichy
Lecturer (May 2009 - Jan 2010)	JJ College of Engineering and Technology - Trichy

## FUNDED PROJECTS

TITLE	SCHEME
CERAMIC COMPOSITE SCAFFOLD BY ADDITIVE MANUFACTURING TECHNIQUE FOR BONE TISSUE REGENERATION	SRG-SERB
DEVELOPMENT AND CHARACTERIZATION OF CARBON FIBER REINFORCED CEMENT BRAKE PAD WITH NANO ENCAPSULATED LUBRICANT FOR ENHANCING BETTER TRIBOLOGICAL AND BRAKING PERFORMANCE (Co-PI)	Armament Research Board
VISION SYSTEM ENHANCED SOURCE SEEKING MICROPHONE	Trans-disciplinary Research (VIT)
FABRICATION OF 3-PIECE CARBON FIBER WHEEL RIMS	AUTODESK
FABRICATION OF AUTONOMOUS SEED PLANTING ROBOT FOR AGRICULTURAL APPLICATION	AUTODESK
MECHANISED WATERLESS & ODOURLESS TOILET	Product Development Fund (VIT)
WHEEL CENTRE DESIGN USING GENERATIVE DESIGN	AUTODESK
LINEAR HYDRO IMPULSE ENERGY TO TORQUE CONVERTER DEVICE	Engineers Infinity (ELECRAMA)

## PATENT DETAILS

TITLE OF THE INNOVATION	APP. NO	STATUS
Linear Hydro Impulse Energy to Torque Converter Device	5215/CHE/2015	Granted
Machine Vision System for Teaching Orthogonal and Isometric Projections in Technical Drawings	5218/CHE/2015	FER Received
Reinforced Polymer composite from non-recyclable waste plastics	E-2/360/2016-CHE	FER Received
Mechanised Flush free toilet	201941031719	FER Received
Autonomous Seed sowing Robot for Agricultural Application	202021024131	Awaiting Examination

## CONTRIBUTION TO INSTITUTION

Has organised International Conference, Students competition and FDP in VIT with association with MATHLAB.

Has organised Students competition and Workshops in association with MATHLAB.

Has organised Value Aided program in Ergonomics for Faculty and students in VIT.

Is a member for NABL ACCREDITATION COMMITTEE in VIT.

Is a member for INDUSTRY - ACADEMIA CONCLAVE COMMITTEE in VIT.

Instrumental in obtaining the INTELLECTUAL PROPERTY RIGHTS AWARD - 2016 for MIET Engineering College-Trichy.

## CERTIFICATION

- Certified in MSME Six Sigma (Green Belt)
- Certified as ASNT LEVEL II Inspector in LPI and MPI.
- Certified in ISNT LEVEL II Inspector in LPI.
- Certified NABL Internal Auditor for Laboratories.

## AWARDS

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- Honoured with “BEST PAPER AWARD” for the paper presented in “ICDAC-2020” referred International Conference organised by VELLORE INSTITUTE OF TECHNOLOGY, Vellore, Tamil Nadu.
- Honoured with “APJ ABDUL KALAM ADVISOR AWARD” for outstanding performance in “FTRI-2019” organised by VELLORE INSTITUTE OF TECHNOLOGY, Vellore, Tamil Nadu.
- Honoured with “BEST PAPER AWARD” for the paper presented in “ICRAMID-2014” IEEE referred International Conference organised by PONJESLY COLLEGE OF ENGINEERING, Kanyakumari, Tamil Nadu.

## PUBLICATIONS

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- Optimization to develop multiple response hardness and compressive strength of zirconia reinforced alumina by using RSM and GRA, 'International Journal of Refractory Metals and Hard Materials-Elsevier',(2015),Vol-52,Pg-159-164.
- Analysis on the effects of powder forming process parameters on the compressive and dynamic hardness of zirconia toughened alumina composites, 'International Conference on Advances in Design & Manufacturing 2014 (ICAD&M'14)-',(2014),Vol-3,Pg-1087 - 1094.
- Optimization of Process Parameters of Zirconia Reinforced Alumina by Powder Forming Process Using Response Surface Method, 'Advanced Materials Research-Trans Tech Publications',(2014),Vol-984,Pg-129-139.
- Optimization of powder forming process parameters to achieve higher hardness of zirconia toughened alumina composites using response surface method, 'International Conference on Advances in Design & Manufacturing 2014 (ICAD&M'14)-',(2014),Vol-3,Pg-1095 - 1101.
- Development of Electricity free Automatic water filling system for house hold application, 'International Conference On Innovation Management IM-2015-',(2015).
- Analysis and optimization of dry sliding wear characteristics of zirconia reinforced alumina composites formed by conventional sintering using response surface method, 'International Journal of Refractory Metals and Hard Materials-Elsevier',(2016),Vol-58,Pg-92-103.
- X-Ray Diffraction Analysis of Mechanically Milled Alumina and Zirconia Powders, 'Nano Hybrids and Composites-Trans Tech Publications',(2017),Vol-17,Pg-96-100.
- Fact-Finding on Physical and Mechanical Properties of 3Y-TZP Toughened Alumina (ZTA) Composites Incorporation of Functionalized Multi-walled Carbon Nanotubes, 'Advances in Materials and Metallurgy-Springer, Singapore',(2019),Vol-,Pg-249-259.
- Limbs Related Handicap Drivable Non-Commercial Electric Shuttle Vehicle, 'SAE Technical Papers-SAE International',(2018).
- Bike with Modified Steering System to Assist People with Forearm Disability, 'SAE Technical Paper-SAE International',(2018).
- Multi-objective optimization of end milling process parameter for stir casted alumina reinforced aluminium metal matrix composite using RSM, 'IOP Conf. Ser. Mater. Sci. Eng-IOP',(2018),Vol-402,Pg-12193.
- A preliminary study on the physical and biocompatibility characteristics of zirconia-silicon nitride bio-ceramics, 'IOP Conf Ser Mater Sci Eng-IOP',(2018),Vol-402,Pg-12031.
- Design of Composite Fixture for Machining Ceramic Materials Using Abrasive Water Jet Machining (AWJM), 'ARPN Journal of Engineering and Applied Sciences-',(2014),Vol-9,Pg-388-392.
- Empirical and finite element prediction and validation of weld bead profile generated during TIG welding process, 'Global Journal of Pure and Applied Mathematics (GJPAM)-',(2016),Vol-12,Pg-15-20.
- A Comparative Study of Flow Characteristics of BMW M6 and AUDI R8 Commercial Sports Car Using Flow Design Software, 'Advances in Manufacturing Technology-Springer, Singapore',(2019),Vol-,Pg-243-253.
- Biodegradable Composites from Leaf Wastes for Packing Applications, 'Advances in Manufacturing Technology-Springer, Singapore',(2019),Vol-,Pg-233-241.
- A Parametric Study on Electro Thermally Actuated Novel Compliant Microgripper, 'SAE Technical Paper-SAE International',(2019).
- Motorist Warning system on road bends in hilly regions for safer riding, 'SAE Technical Paper-SAE International',(2020).
- Generative design study of a remote-controlled plane's wing ribs. AIP Conference Proceedings. Vol. 2283. No. 1. AIP, (2020).
- Design & Analysis of Bio-Scaffold for Bone Synthesis using Generative Design, IOP Conference Series, (2021)
- Effect of Drilling Process Parameters on Bahunia Racemosa/Glass Fiber Composites using Taguchi Method, 'International Conference on Advances in Mechanical Engineering, (2015),Vol-2,Pg-811-814.
- Taguchi Based Analysis on Hole Diameter Error of Drilled Glass/Bahunia Racemosa Fiber Polymer Composites, 'SAE Technical Paper-SAE International', (2017).
- Design and Fabrication of CFRP Wheel Centre for FSAE Race-Car, 'SAE Technical Paper-SAE International', (2019).
- Application of Response Surface Method to Optimize Waterjet Cutting Process Parameter of Glass Fiber Reinforced Polymer Matrix Laminates, 'SAE Technical Paper-SAE International', (2019).
- Modelling and fabrication of CFRP tubes for double wishbone suspension of Formula SAE race-car, 'SAE Technical Paper-SAE International', (2020).
- Design and Optimization of Laminated Composite Plate for Maximum Fundamental Frequency, 'SAE Technical Paper-SAE International', (2020).
- Finite Element modelling of elastic properties of flax fiber reinforced epoxy composites, 'SAE Technical Paper-SAE International', (2020).
- Finite element modeling and damping properties of micro cellulose Bahunia Racemosa fiber reinforced nylon/polyester hybrid composites." AIP Conference Proceedings. Vol. 2283. No. 1. AIP, (2020).
- Experimental studies on water absorption properties of acetic acid treated banana fiber composites, Materials Today: Proceedings, (2021).

## AWARDS

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- Designed and fabricated and electricity free automatic water filling system. Working Video available in YouTube ([www.youtube.com/watch?v=r0xb19AU1A](http://www.youtube.com/watch?v=r0xb19AU1A))
- Design and developed an Innovative turbine for river flow energy harvesting. Working Video available in YouTube (<https://youtu.be/GJAoyOtpDUU>)
- Designed and developed and Electric Vehicle for Handicap people. Demonstration Video broadcasted in JAYA TV is available in YouTube ([https://youtu.be/\\_U-ctUaedeQ](https://youtu.be/_U-ctUaedeQ))
- Designed and developed and waterless odourless toilet.

## R&D EXPERIENCE

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- Support system for CFBC FBHE coils and Back pass surfaces in CFBC boilers, Bharat Heavy Electrical Limited, Tiruchirappalli, Rs. 9,00,000/-.
- Distribution of Load Transfer Pattern and Stress Distribution with large openings in the Furnace walls of CFBC boilers, Bharat Heavy Electrical Limited, Tiruchirappalli, Rs. 7,50,000/-.

### Principal Investigator

Dr. K. Sankaranarayanan, Director, National Institute of Technology Puducherry.

### Co Investigator

Dr T Ramesh, Associate Professor, National Institute of Technology Trichy.

Dr N Shivashanmugam, Associate Professor, National Institute of Technology Trichy.

## INDUSTRIAL COLLABORATION DETAILS

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INDUSTRIAL COLLABORATIONS	FUNDING AGENCY	INDUSTRIAL COLLABORATIONS
MECHANISED WATERLESS & ODOURLESS TOILET	Product Development Fund (VIT)	SRKP Polymer, Coimbatore
LINEAR HYDRO IMPULSE ENERGY TO TORQUE CONVERTER DEVICE	Engineers Infinity (ELECHEMA)	Bharakath Metal Builder Trichy

THANK YOU