

National Institute of Technology, Tiruchirappalli: Performa for CV of Dr. R. Anand

Curriculum Vitae



Brief Profile:

I am currently serving as an Associate Professor in the Department of Mechanical Engineering and as Associate Dean (Research & Consultancy)-Industry & Outreach in National Institute of Technology, Trichy. I am recipient of Australian Endeavour Fellow and worked in the area of solar fuels at Australian National University, Canberra, Australia from July to October 2015. My area of research interest is Internal Combustion Engines, and it expands to the field of Alternative Fuels, Waste to Energy Conversion, green ammonia and hydrogen synthesis, Fuel Cells, Pyrolysis, Gasification, Incineration and Electric vehicle technology. I have generated fund from various projects and developed well equipped Fuels Laboratory and Bio-energy Laboratory in the Department of Mechanical Engineering. In which, I have established facilities for fundamental fuel characterization and quality assessment, bench-scale reactor systems for process development and pilot-scale systems that replicate the environment of full-scale systems at NIT-Trichy. In particular, I focus on plasma assisted waste recycling, syngas processing, microreactor, thermochemical kinetics, IC engines and chemical looping combustion.

I have received projects from DST-BRICS, MHRD-SPARC, DST-UKIERI, GTRE-DRDO, DST-SERB, DST- YSS. In the DST- SERB project, electrical and microwave pyrolysis experimental setup was developed to produce diesel-like fuel. Under the DST-UKIERI project, developed a down draft gasification system to produce syngas for Fuel cell application. I have been collaborated with NIT-Puducherry in the fabrication of a 6-kW concentrated photovoltaic solar system. I have been collaborated with Indo-Brazil project in the area of the thermochemical conversion process with LCA under SPARC scheme. I have guided 6 Ph.D. and 3 MS research scholars and currently guiding 8 Ph.D. and 1 MS scholar. My research-oriented scholarship has facilitated to publish 58 Science Citation (SCI)/Scopus Indexed research journals and presented papers in several international conferences besides presenting a paper in ASME, USA, and SAE International conferences. I have been granted with 4 Indian patents in the area of biocatalyst and biofuel and 3 Indian patents has been published. I have published 3 books and 11 book chapters in renowned publications (Elsevier & Springer). I serve as review member for various International journals such as Renewable and Sustainable Energy Reviews, Ultrasonics sonochemistry, Applied Energy, Energy, Fuels, Energy Conversion Management, Process Safety and Management, International Journal of Hydrogen Energy, Biomass and Bioenergy, Fuel Processing Technology, International Journal of Thermal Sciences, Energies, Journal of Materials Engineering and Performance, Journal of Thermal Analysis and Calorimetry, Biofuels, International Journal of Green Energy.

National Institute of Technology, Tiruchirappalli:
Performa for CV of Dr. R. Anand

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|----|--|---|
| 1. | Name | Dr. R. Anand |
| 2. | Designation: | Associate Professor |
| 3. | Office Address: | Associate Professor, Department of Mechanical Engineering, National Institute of Technology, Tiruchirappalli – 620015, Tamil Nadu. |
| 4. | Telephone (Direct): Telephone : Mobile (Optional): | 0431 2503423 (Office), 9444838909 |
| 5. | Email (Primary): anandachu@nitt.edu | Email (Secondary): anandachuselvi@gmail.com |
| 6. | Field(s) of Specialization: | Internal Combustion Engines, Alternative Fuels, Waste to Energy Conversion, Fuel Cells, Pyrolysis, Gasification, Incineration, Electric vehicle technology |

7. Employment Profile

| Job Title | Employer | From | To |
|-----------------------------|------------------------------------|---------------|---------------|
| Associate Professor | NIT, Trichy | March 2018 | Till date |
| Assistant Professor | NIT, Trichy | May 2007 | Till date |
| Lecturer | Anna University, Chennai | February 2005 | May 2007 |
| Teaching Research Associate | Anna University, Chennai | July 2001 | February 2005 |
| Lecturer | MIET, Trichy | November 1999 | July 2001 |
| Design Engineer | Walchand Nagar Industries, Pune | March 1999 | October 1999 |
| Project Trainee | IREDA, New Delhi | August 1999 | January 1999 |

National Institute of Technology, Tiruchirappalli:
Performa for CV of Dr. R. Anand

8. Academic Qualifications :

| Examination | Board / University | Year | Division/ Grade | Subjects |
|--------------------|--|-------------|------------------------|------------------------------------|
| Post DOC | Australian National University, Australia | 2015 | - | Solar Fuels |
| Ph.D. | Anna University, Chennai | 2008 | - | Internal Combustion Engines |
| M.Tech | School of Energy/ Bharathidasan University, Trichy | 1999 | First Class | Energy Conservation and Management |
| B.E | Regional Engineering College, Trichy/ Bharathidasan University, Trichy | 1997 | First Class | Mechanical |

9. Academic/Administrative Responsibilities within the University

| Position | Faculty/Department/ Centre/Institution | From | To |
|--|--|-------------|-----------|
| Associate Dean (R&C) – Industry and Outreach | Institution | 25.03.2021 | Till date |
| III Cell coordinator | Institution | 02.08.2021 | Till date |
| Faculty In charge - MS/Ph.D. Admission | Institution | 2017 | Till date |
| CII Coordinator | Institution | 21.06.2021 | Till date |
| Expert member | Centre of Excellence in Corrosion and in Corrosion and Surface Engineering | 12.10.2011 | Till date |
| Faculty In charge- Library | Department | 24.06.2008 | Till date |
| Coordinator Academic Audit | Department-UG, PG | 24.10.2017 | Till date |
| Faculty In charge- Thermal lab | Department | 01.02.2011 | Till date |
| Faculty In charge- Fuels lab | Department | 01.08.2015 | Till date |
| Board of studies Coordinator | Department-UG, PG | 21.03.2018 | Till date |
| PG Project Coordinator | Department – UG, PG | 2011 | Till date |
| Faculty In charge – NBA committee | Institution | 2011 | Till date |
| Stock Verification Officer | Institution | 01.05.2009 | Till date |

**National Institute of Technology, Tiruchirappalli:
Performa for CV of Dr. R. Anand**

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|---|-------------|------------|------------|
| Faculty In charge Green campus Committee | Institution | 2009 | 2011 |
| Faculty In charge Convocation 2017 Programme Committee | Institution | 02.08.2017 | 31.10.2017 |
| Faculty In charge- NBA 2017 Programme Committee | Institution | 25.10.2017 | 29.10.2017 |
| Faculty In charge- Mechanical Alumni Network | Department | 13.10.2017 | 13.12.2017 |
| TEQIP Nodal Officer -MIS | Institution | 22.01.2014 | 27.01.2016 |
| PAC Chairman – M.Tech Thermal Power | Department | 22.01.2016 | 30.12.2016 |
| Faculty In charge Convocation 2017 Programme Committee | Institution | 04.08.2015 | 31.08.2015 |
| Institute Ph.D. Course Coordinator non-Circuit | Institution | 28.08.2013 | 31.12.2014 |
| PAC Chairman – B.Tech | Department | 17.02.2014 | 30.05.2014 |
| Faculty in charge NBA 2014 Hospitality Committee | Institution | 05.10.2014 | NA |
| Faculty in charge NBA 2013 Hospitality Committee | Institution | 14.11.2013 | NA |
| Faculty In charge - MS/Ph.D. Admission | Institution | 10.06.2013 | 31.12.2013 |
| PAC Chairman – M.Tech Thermal Power | Department | 03.07.2012 | 28.12.2012 |
| Faculty In charge Convocation 2010 Discipline Committee | Institution | 30.09.2010 | NA |
| PAC Chairman – M.Tech Thermal Power | Department | 07.06.2009 | 31.12.2009 |

10. Academic/Administrative Responsibilities outside the University

| Position | Institution | From | To |
|-----------------------------|--------------------------|-------------|-----------|
| Indian Examiner - PhD | Anna University, Chennai | 2010 | Till date |
| Academic Board | MIT, Chennai | 2012 | 2016 |
| Inspection Committee Member | Anna University, Chennai | 2012 | Till date |

**National Institute of Technology, Tiruchirappalli:
Performa for CV of Dr. R. Anand**

11. Awards, Associateships etc.

| Year of Award | Name of the Award | Awarding Organization |
|----------------------|---|---|
| 2022 | Best Innovator Award | National Institute of Technology, Tiruchirappalli |
| 2020 | Best Performer Faculty Award | National Institute of Technology, Tiruchirappalli |
| 2018 | Dr Radhakrishnan Excellence award | Indian Institute of Oriental Heritage |
| 2017 | Outstanding Scientist in Mechanical Engineering | Venus International Research Awards |
| 2015 to Till date | Outstanding Reviewer Award | Elsevier publisher |
| 2012 | Session Organizer | ASME, USA |
| 2009 | N.K. Iyengar Memorial Prize | Institute of Engineers, India |

12. Fellowships

| Year of Award | Name of the Fellowship | Awarding Organization | From (Month/Year) | To (Month/Year) |
|----------------------|--------------------------------|------------------------------|--------------------------|------------------------|
| 2015 | Endeavour Executive Fellowship | Australian Government | June 2015 | September 2015 |

13. Details of Academic Work

- (i) Curriculum Development: Undergraduate and Postgraduate in Mechanical subjects
- (ii) Courses taught at Postgraduate and Undergraduate levels
 - UG Level: Thermodynamics, Fuels and Combustion, Basic Mechanical Engineering, Thermal Engineering
 - PG Level: Fuels and Combustion, Analysis of Thermal Power Cycles and Boiler Auxiliaries
- (iii) Projects guided at Postgraduate level: Guides 65 Projects at PG level
- (iv) Other contribution(s):
 - Developed Thermal for UG and PG Level
 - Developed Bio-energy lab, Fuels lab and IC Engines Research lab for PhD students
 - Developed Department library for PG and PhD students
 - Acted as Faculty Advisor for Mechanical Engineering Association
 - Acted as PAC Chairman for UG, PG and PhD
 - Acted as Project Coordinator for both UG and PhD

National Institute of Technology, Tiruchirappalli:
Performa for CV of Dr. R. Anand

14. Details of Major R&D Projects

| Title of Project | Funding Agency | Duration | | Status |
|--|---------------------------------|----------|------|-----------------------|
| | | From | To | Ongoing/ Completed |
| Life cycle assessment of CO ₂ reduction by energy efficient hybrid biomass pyrolysis and gasification | DST-BRICS | 2020 | 2023 | Ongoing |
| Environmental and Energy Impacts of Higher Alcohol and Biofuel Synthesis by Thermochemical Process | MHRD-SPARC | 2019 | 2022 | Ongoing |
| In depth investigations on corrosion and tribological characteristics on expendable engine | GTRE-DRDO | 2018 | 2021 | Completed |
| Methanol Fed High Energy Density Fuel Cell System with Novel Catalyst and Flow Field design | DST-UKIERI | 2017 | 2020 | Completed |
| Experimental Investigation on Dual Fuel Engine Using Compressed Natural Gas and Pyrolysis waste engine oil | DST-SERB | 2016 | 2020 | Completed |
| Production of Biodiesel from Non-Edible Aegle marmelos Correa oil and its Use in Diesel Engine | DST- YSS | 2016 | 2019 | Completed |
| Experimental Studies on a Direct Injection Diesel Engine Using Waste Cooking Oil Based Biodiesel and Its Blends | MHRD | 2014 | 2017 | Completed |
| A Study on the Feasibility of Using Processed Waste Engine Oil as an Alternate Fuel for a DI Diesel Engine | Institution of Engineers, India | 2012 | 2013 | Completed |
| The Effect of Thermal Barrier Coated Engine Components and Platinum Based Catalyst Coated Diesel Particulate Filter on Diesel Engine Fueled with Biodiesel | Institution of Engineers, India | 2010 | 2011 | Completed |

National Institute of Technology, Tiruchirappalli:
Performa for CV of Dr. R. Anand

15. Number of PhDs guided

| Name of the PhD Scholar | Title of PhD Thesis | Role(Supervisor/ Co-Supervisor) | Year of Award |
|---------------------------------|---|--|----------------------|
| A. Santhoshkumar | Energy-Efficient Fuel Extraction from Hazardous Waste Engine Oil and Its Application in Diesel Engine Using Advanced Injection Strategy | Supervisor | 2021 |
| T. Vinoth | Production of Biodiesel from Aegle Marmelos Correa Seed Oil and its Use in Diesel Engine | Supervisor | 2021 |
| A. Zahir Hussain | Production of Diesel-like Fuel from Waste Engine Oil and its Use in Diesel Engine | Supervisor | 2020 |
| D. Babu | Investigation and the application of neural network for the prediction of diesel engine characteristics fuelled with biodiesel and its blends | Supervisor | 2019 |
| Kshirsagar Charudatta Madhavrao | Parametric Investigation on A Direct Injection Diesel Engine Fuelled with Calophyllum Inophyllum Kernel Oil Synthesized Biodiesel and Its Diesel Blends | Supervisor | 2017 |
| G.R.Kannan | Experimental studies on a direct injection diesel engine using waste cooking oil-based biodiesel and its blends | Supervisor | 2012 |

**National Institute of Technology, Tiruchirappalli:
Performa for CV of Dr. R. Anand**

16. Participation in Workshops/ Symposia/ Conferences/ Colloquia /Seminars/ Schools etc.

| Date | Title of Activity | Level of Event | Role | Event Organized by | Venue |
|-------------|--|-----------------------|-------------|--|--|
| 2021 | Environmental and Energy Impacts of Biomass Thermochemical Process | International | Speaker | SPARC Scheme | National Institute of Technology, Tiruchirappalli |
| 2020 | Waste to energy conversion technique by pyrolysis process | International | Speaker | SPARC scheme | National Institute of Technology, Tiruchirappalli |
| 2020 | Alternative Fuels | National | Speaker | AICTE Training and Learning (ATAL) Academy | University College of Engineering, BIT Campus, Tiruchirappalli |
| 2019 | Innovative Project Contest ECO-IDEAS | National | Judge | | Sethu Institute of Technology, Pullor |
| 2013 | TNSCST Exhibition for Student Project Scheme | National | Guide | Tamilnadu State Council for Science and Technology | TNCST, Chennai |
| 2012 | Michelin Tyres World Recruitment Event | International | Nominee | Michelin Tyres | Michelin Tyres, France |

**National Institute of Technology, Tiruchirappalli:
Performa for CV of Dr. R. Anand**

17. Workshops/ Symposia/ Conferences/ Colloquia/Seminars Organized

| Title of Activity | Level of Event | Date | Role | Venue |
|--|-----------------------|--------------------------|--|---------------------------------|
| SPARC workshop on Environmental and Energy Impacts of Biomass Thermochemical Process | International | 21.01.2021 to 25.01.2021 | Convener | NIT, Trichy |
| Combustion Generated Pollution Control | National | 16.12.2019 to 20.12.2019 | Convener | NIT, Trichy |
| SPARC workshop on Recent Technologies on Waste to Energy Conversion | International | 02.12.2019 to 13.12.2019 | Convener | NIT, Trichy |
| 2 nd Mechanical Engineering Conference | International | 29.11.2019 to 01.12.2019 | Chairman | NIT, Trichy |
| Biofuels and Combustion Research, | National | 26.10.2016 to 01.11.2016 | Convener | NIT, Trichy |
| Engine Research | National | 07.10.2014 to 08.10.2014 | Convener | NIT, Trichy |
| Renewable Energy Technologies | National | 26.09.2014 to 27.09.2014 | Convener | NIT, Trichy |
| Automotive Fuels and Emission | National | 12.06.2013 to 14.06.2013 | Convener | NIT, Trichy |
| International conference on International Mechanical Engineering congress | International | 13.06.2014 to 15.06.2014 | Convener | NIT, Trichy |
| ASME 2012 International Mechanical Engineering Congress and Exposition | International | 14.11.2012 | Session organizer for conducting Biodiesel combustion session II | ASME, USA / Houston, Texas, USA |
| Two weeks ISTE workshop on “Thermodynamics in Mechanical Engineering” | National | 14.06.2011 to 24.06.2011 | Convener | IIT, Bombay & NIT, Trichy |

**National Institute of Technology, Tiruchirappalli:
Performa for CV of Dr. R. Anand**

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|---|----------|--------------------------------|----------|-------------|
| Two weeks AICTE-MHRD sponsored Faculty Development Programme on “Applied Mechanical Measurements” | National | 19.12.2007 to 20.12.2007 | Convener | NIT, Trichy |
| Recent trends in Alternative Fuels and Emission control technologies in Internal Combustion Engines | National | 19.12.2007 to 20.12.2007 | Convener | NIT, Trichy |

GIAN Course Organized

| Title of Activity | Name of the Organizer | Venue & Date | Sponsor Details & International/ National |
|--------------------------------------|---------------------------------|---|--|
| Advanced Internal Combustion Engines | Dr. R. Anand, Prof. Rui Chen | NIT Trichy & 06.05.2019 to 17.05.2019 | MHRD |

18. Invited Talks delivered

| Topic | Date | Inviting Organization |
|--|-------------|--|
| Oil extraction, Bio diesel production and its optimization | 22.03.2021 | Government Polytechnic College, Gandharvakottai |
| Usage of Biofuels in Indian Scenario | 16.03.2021 | PSNA College of Engineering and Technology, Dindigul |
| Thermochemical conversion process | 01.03.2021 | PSNA College of Engineering and Technology, Dindigul |
| Alternative Fuels – Biodiesel | 03.02.2021 | PSNA College of Engineering and Technology, Dindigul |
| Biodiesel production and Engine Study | 16.03.2017 | APIIT, R.K.Valley, Andhra Pradesh |
| Biodiesel is an Alternative Emission Characteristics | 07.03.2017 | M. Kumarasamy college of Engineering, Karur |
| Recent Research Practices in Internal Combustion Engines | 2011 | Karpagam College of Engineering, Coimbatore |
| Design of IC Engines | 2011 | Sri Ramakrishna College of Engineering, Coimbatore |
| Design on Renewable Energy | 2009 | Trichy Engineering College, Trichy |
| Research Possibilities in IC engines | 2009 | AVC College of Engineering, Mayiladuthurai |
| Cogeneration and Waste Heat Recovery | 2009 & 2010 | Anna University, Trichy |
| Internal Combustion Engines | 2006 | All India Radio Chennai |

National Institute of Technology, Tiruchirappalli:
Performa for CV of Dr. R. Anand

19. Membership of Learned Societies

| Type of Membership | Organization |
|--------------------|---------------------------------|
| Life Member | Institution of Engineers, India |
| Life member | Combustion Institute, India |
| Member | ASME, USA |
| Member | SAE, India |

20. Academic Foreign Visits

| Country | Duration of Visit | Programme |
|----------------|--------------------------------|--|
| Bangladesh | 20.12.2006 to 22.12.2006 | 3rd BSME-ASME International Conference on Thermal Engineering |
| USA | 13.04.2010 to 15.04.2010 | SAE World Congress |
| USA | 09.11.2012 to 15.11.2012 | American Society of Mechanical Engineers (ASME) 2012 |
| France | 09.09.2012 to 12.09.2012 | World recruiting event, Michelin France |
| Italy | 28.07.2013 to 04.08.2013 | TEQIP Faculty Development Program |
| Germany | 15.07.2017 to 19.07.2017 | 2 nd International Conference on Power and Energy Engineering |
| Hong Kong | 22.08.2018 to 25.08.2018 | Applied Energy Conference |
| United Kingdom | 15.02.2020 to 04.03.2020 | DST-UKIERI Project |

National Institute of Technology, Tiruchirappalli:
Performa for CV of Dr. R. Anand

21. Publications

(A) Refereed Research Journals:

| Author(s) | Title of Paper | Journal | Volume (No.) | Page numbers | Year | Impact Factor of the Journal |
|---|---|--|---------------------|---------------------|-------------|-------------------------------------|
| Gopi R, Vinoth Thangarasu, Angkayarkan Vinayakaselvi M, Anand Ramanathan | A critical review of recent advancements in continuous flow reactors and prominent integrated microreactors for biodiesel production | Renewable and Sustainable Energy Reviews | 154 | 111869 | 2022 | 16.799 |
| R. Yoganathan, N. Siva Shanmugam, Anand Ramanathan | Effects of Thickness Offset on the Tube-to-Tube Sheet Expansion Joint Strength: An Experimental Evaluation | Journal of Materials Engineering and Performance | 31 | 2770 - 2782 | 2021 | 1.819 |
| Dmitrii Glushkov, Galina Nyashina, Anatolii Shvets, Amaro Pereira, Anand Ramanathan | Current Status of the Pyrolysis and Gasification Mechanism of Biomass | Energies | 14(22) | 7541 | 2021 | 3.252 |
| D.O.Glushkov, G.S.Nyashina, R.Anand, P.A.Strizhak | Composition of gas produced from the direct combustion and pyrolysis of biomass | Process Safety and Environmental Protection | 156 | 43-56 | 2021 | 7.926 |
| Vinoth Thangarasu, Angkayarkan Vinayakaselvi M, Anand Ramanathan | Artificial neural network approach for parametric investigation of biodiesel synthesis using biocatalyst and engine characteristics of diesel engine fuelled with Aegle Marmelos Correa biodiesel | Energy | 230 | 120738 | 2021 | 8.857 |

**National Institute of Technology, Tiruchirappalli:
Performa for CV of Dr. R. Anand**

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|---|--|------------------------------|--------|-------------|------|--|
| Prasanna N, Anand Ramanathan | Development and Testing of Fixture to Automate the Welding Process for Hydro End Cover Plates | Materials Today: Proceedings | 46(19) | 10065-10071 | 2021 | |
| Sachin Kumar, Muthu Dineshkumar R, Anand Ramanathan | Numerical Prediction of Gas Composition from Waste Ashoka and Neem leaves using Downdraft Gasifier | Materials Today: Proceedings | 46(19) | 10054-10059 | 2021 | |
| Sachin Kumar, Muthu Dineshkumar R, Angkayarkan Vinayakaselvi M, Anand Ramanathan | Enhancing Environmental Sustainability through Waste to Energy Conversion of Neem Leaves | Materials Today: Proceedings | 46(19) | 10060-10064 | 2021 | |
| Yoganathan R, Anand Ramanathan | Apparatus and method for withdrawing a broken tube expander tool trapped in a Bank tube during tube expansion process of Bi- Drum Boiler | Materials Today: Proceedings | 46(19) | 10047-10053 | 2021 | |
| Sachin Kumar, Muthu Dineshkumar R, Angkayarkan Vinayakaselvi M, Anand Ramanathan | Ethanol production from syngas-derived biomass: A review | Materials Today: Proceedings | 46(19) | 9989-9993 | 2021 | |
| M Dineshkumar, Banagiri Shrikar, Ramesh Kasimani, Anand Ramanathan | Study on availability analysis, performance and emission behavior for an oxygen enriched turbocharged diesel engine | Materials Today: Proceedings | 46(19) | 9862-9868 | 2021 | |

**National Institute of Technology, Tiruchirappalli:
Performa for CV of Dr. R. Anand**

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|--|--|------------------------------------|--------|---------------|------|--|
| R Muthu Dineshkumar, KM Meera Sheriffa Begum, Anand Ramanathan | Comprehensive characterization of cashew nutshell for biomass gasification | Materials Today: Proceedings | 46(19) | 9837- 9843 | 2021 | |
| A Santhoshkumar, A Zahir Hussain, Anand Ramanathan | An experimental investigation of the effect of liquified petroleum gas addition on dual fuel diesel engine fuelled with pyrolysis waste engine oil | Materials Today: Proceedings | 46(19) | 9800- 9808 | 2021 | |
| M Dineshkumar, KM Meera Sheriffa Begum, Banagiri Shrikar, Anand Ramanathan | Synthesis and characterization study of solid carbon biocatalyst produced from novel biomass char in a microwave pyrolysis | Materials Today: Proceedings | 46(19) | 9814- 9819 | 2021 | |
| Alok Kumar, Anand Ramanathan | Theoretical analysis involved in the prediction of biomethane production from fruit wastes through anaerobic digestion | Materials Today: Proceedings | 46(19) | 9788- 9793 | 2021 | |
| Alok Kumar, Anand Ramanathan | Design of an agitator in the anaerobic digester for mixing of biomass slurry | Materials Today: Proceedings | 46(19) | 9678- 9682 | 2021 | |
| Prasanna N, Balaji Chandramohan, Anand Ramanathan | Argon localizing by concentration method for GTAW welding process of high chromium alloy steel pipes | Materials Today: Proceedings | 46(19) | 9308- 9315 | 2021 | |

**National Institute of Technology, Tiruchirappalli:
Performa for CV of Dr. R. Anand**

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|---|---|---|--------|-----------|------|--------|
| Yoganathan R, Anand Ramanathan | An experimental study of effects on tube to tube sheet expansion joint grip strength due to seal welding or blanking of adjacent bank tubes of bi-drum boiler | Materials Today: Proceedings | 46(19) | 9328-9333 | 2021 | |
| A. Zahir Hussain, A.Santhoshkumar, Anand Ramanathan | Assessment of Pyrolysis Waste Engine Oil as an Alternative Fuel Source for Diesel Engine | Journal of Thermal Analysis and Calorimetry | 141 | 2277-2293 | 2020 | 4.626 |
| A Santhoshkumar, Anand Ramanathan | Recycling of waste engine oil through pyrolysis process for the production of diesel like fuel and its uses in diesel engine | Energy | 197 | 117240 | 2020 | 8.857 |
| D Babu, Vinoth Thangarasu, Anand Ramanathan | Artificial neural network approach on forecasting diesel engine characteristics fuelled with waste frying oil biodiesel | Applied Energy | 263 | 114612 | 2020 | 11.446 |
| Vinoth Thangarasu, R. Siddharth, Anand Ramanathan | Modeling of process intensification of biodiesel production from Aegle Marmelos Correa seed oil using microreactor assisted with ultrasonic mixing | Ultrasonics Sonochemistry | 60 | 104764 | 2020 | 9.336 |
| Muthudineshkumar, Anand Ramanathan | Life Cycle Assessment on Biofuel Production from Biomass Gasification and Syngas Fermentation | Earth and Environmental Science | 312 | 012016 | 2019 | |

**National Institute of Technology, Tiruchirappalli:
Performa for CV of Dr. R. Anand**

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|--|---|--|-----|-------------|------|-------|
| Vinoth Thangarasu, Anand Ramanathan | Production of biodiesel from Aegle marmelos correa seed oil for fuel cell application | Earth and Environmental Science | 312 | 012018 | 2019 | |
| Arul M, Dinesh Kumar M, Anand Ramanathan | ASPEN HYSYS Simulation of Biomass Pyrolysis for The Production of Methanol | Earth and Environmental Science | 312 | 012015 | 2019 | |
| DineshKumar M, Banagiri Shrikar, Anand Ramanathan | Development of Computer Aided Modelling and Optimization of Microwave Pyrolysis of Biomass by Using ASPEN PLUS | Earth and Environmental Science | 312 | 012006 | 2019 | |
| A Santhoshkumar, Anand Ramanathan | Energy and Life Cycle Assessment of Solar Assisted Microwave Pyrolysis of Waste Biomass | Earth and Environmental Science | 312 | 012017 | 2019 | |
| Alok Kumar, Anand Ramanathan | Production of Methanol from Biogas Using Methanotrophsfor The Application in Amicrobial Fuel Cell | Earth and Environmental Science | 312 | 012005 | 2019 | |
| V. Thiagarajana, P. Karthikeyana, K. Thanarajana, S. Neelakrishnana, R. Manoharan, Rui Chen, Ashley Fly, R. Anand, Thundil R Karuppa Raj, N. Sendhil Kumar | Experimental investigation on DMFCs using reduced noble metal loading with NiTiO ₃ as supportive material to enhance cell performances | International Journal of Hydrogen Energy | 44 | 13415-13423 | 2019 | 7.139 |

National Institute of Technology, Tiruchirappalli:
Performa for CV of Dr. R. Anand

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|---|--|---------------------------------------|-----|-----------|------|-------|
| Vinoth Thangarasu, Anand Ramanathan | Effect of high-frequency microwave irradiation on Aegle Marmelos Correa Oil extraction: kinetic and thermodynamic study | Energy Procedia, Elsevier | 158 | 1046-1051 | 2019 | |
| A.Santhosh Kumar, Anand Ramanathan | Feasibility Analysis of Pyrolysis Waste Engine Oil in CRDI Diesel Engine | Energy Procedia, Elsevier | 158 | 755-760 | 2019 | |
| Vinoth Thangarasu, Balaji B, Anand Ramanathan | Experimental investigation of tribo-corrosion and engine characteristics of Aegle Marmelos Correa biodiesel and its diesel blends on direct injection diesel engine | Energy | 171 | 879-892 | 2019 | 8.857 |
| D.Babu, R.Anand | Impact of split injection strategy on combustion, performance and emissions characteristics of biodiesel fuelled common rail direct injection assisted diesel engine | Energy | 165 | 577-592 | 2018 | 8.857 |
| Kshirsagar C.M, R. Anand | Homogeneous catalysed biodiesel synthesis from Alexandrian Laurel (Calophyllum inophyllum L.) kernel oil using orthophosphoric acid as a pretreatment catalyst | International Journal of Green Energy | - | - | 2017 | 2.459 |

National Institute of Technology, Tiruchirappalli:
Performa for CV of Dr. R. Anand

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|---|---|---|---------|-----------|------|--------|
| D.Babu, R.Anand | Effect of biodiesel-diesel-n-pentanol and biodiesel-diesel-n-hexanol blends on diesel engine emission and combustion characteristics | Energy | 133 | 761-776 | 2017 | 8.857 |
| Kshirsagar C.M, R. Anand | Artificial neural network applied forecast on a parametric study of Calophyllum inophyllum methyl ester-diesel engine out responses | Applied Energy | 189 | 555-567 | 2017 | 11.446 |
| P.A. Anjana, S. Niju, K.M. Meera Sheriffa Begum, N. Anantharaman, R. Anand, D. Babu | Studies on biodiesel production from Pongamia oil using heterogeneous catalyst and its effect on diesel engine performance and emission characteristics | Biofuels | 7 | 377-387 | 2016 | 2.956 |
| Sneha E.Mahesh, R.Anand, K.M.Meera S. Begum, Anantharaman Narayanan | Biodiesel production from waste cooking oil using KBr impregnated CaO as catalyst | Energy Conversion and Management | 91 | 442-450 | 2015 | 11.533 |
| P.VaibhavPal, R.Karthikeyan, R.Anand | Performance Enhancement Of the Proton Exchange Membrane Fuel Cell Using Pin Type Flow Channel with Porous Inserts | Journal of Power and Energy Engineering | 3(5) | 1-10 | 2015 | 0.87 |
| Kshirsagar C.M, R. Anand | An overview of biodiesel extraction from the third generation biomass feedstock: Prospects and challenges | Applied Mechanics and Materials | 592-594 | 1881-1885 | 2014 | |

**National Institute of Technology, Tiruchirappalli:
Performa for CV of Dr. R. Anand**

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|---|--|---|---------------|-----------|------|--------|
| A.Zahir Hussain, Sumit Raj, R. Anand | Experimental investigation on diesel engine using processed waste engine oil | Applied Mechanics and Materials | 592-594, | 1580-1584 | 2014 | |
| Vaibhav Pal, P. Karthikeyan, R. Anand | Numerical study on proton exchange membrane fuel cell with 2mm x 2mm and 25cm ² serpentine flow channel | Applied Mechanics and Materials | 592-594, | 1881-1885 | 2014 | |
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National Institute of Technology, Tiruchirappalli:
Performa for CV of Dr. R. Anand

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National Institute of Technology, Tiruchirappalli:
Performa for CV of Dr. R. Anand

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(B) Conferences/Workshops/Symposia Proceedings

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National Institute of Technology, Tiruchirappalli:
Performa for CV of Dr. R. Anand

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| Guilherme Rodrigues Lima, Amaro Pereira, Muthu Dinesh Kumar Ramaswamy, Anand Ramanathan, Meera Sheriffa Begum K. M | Life Cycle Assessment of Waste-to-Energy Technologies | 15 th Conference on Sustainable Development of Energy, Water and Environment Systems – SDEWES | | Energy | Cologne, Germany | 2020 |
| A.Zahir Hussain, R.Anand | Experimental Investigation on a Dual Fuel Engine Using LPG and Processed Waste Engine Oil | 4 th International Conference on Advances in Energy Research | | Energy | Indian Institute of Technology Bombay, Mumbai | 2013 |
| A.Zahir Hussain, R.Anand | Processed Waste Engine Oil as Fuel in Diesel Engine | International Mechanical Engineering conference (ICARMAEC 2013) | | | Thailand | 2013 |
| R.Anand, G.R.Kannan, Karthikeyan Palaniswamy | A Study of the Performance Emission and Combustion Characteristics of a DI Diesel Engine Using Waste Cooking Oil Methyl Ester-Ethanol Blends | ASME 2012 International Mechanical Engineering Congress & Exposition | | Mechanical | Houston, USA | 2012 |
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National Institute of Technology, Tiruchirappalli:
Performa for CV of Dr. R. Anand

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| R.Anand, G.R.Kannan, S.Nagarajan | Effect of variables on biodiesel production from Waste cooking oil via Response Surface Methodology | Petrotech 2010, 10 th International oil and gas conference and Exhibition | | Oil and Gas | New Delhi | 2010 |
| K. R. Balasubramanian, G. R. Kannan, R.Anand | Effect of Preheated Waste Cooking Oil on the Performance and Emissions in a DI Diesel Engine | Petrotech 2010, 10 th International oil and gas conference and Exhibition | | Oil and Gas | New Delhi | 2010 |
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National Institute of Technology, Tiruchirappalli:
Performa for CV of Dr. R. Anand

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| R.Anand, K.Rajasekar Reddy, V.Arul Mozhi Selvan, S.Velmathi, T.Senthil kumar | Study of Performance, Emission and Combustion Characteristics of a Diesel engine using Methyl Ester of Cottonseed oil | 8 th International oil and gas conference and Exhibition | | Oil and gas | Indian Oil Corp. of India, NewDelhi | 2009 |
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| Anand R, K.Chakradhara Rao | Safety aspects in the use of hydrogen in internal combustion engines | 6 th International Conference on Fuel and Lubricants | | Fuels and Lubricants | Indian Oil Corp. of India, NewDelhi | 2008 |
| Anand R, Deepak Devaraddy, G.R. Kannan | Optimization of Discharge Muffler in Reciprocating Compressor | 19 th National & 8 th SHMT-ASME Heat and Mass Transfer Conference | | Heat and Mass Transfer | JNTU, Hyderabad | 2008 |
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**National Institute of Technology, Tiruchirappalli:
Performa for CV of Dr. R. Anand**

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| Anand R, Mahalakshmi N.V | Effects of Nitrogen-enriched air on diesel engine by dilution and addition techniques | 19th National conference on IC Engines and Combustion | 77-82 | Mechanical | Combustion Institute, Annamalai University | 2005 |
| Anand R, Mahalakshmi N.V | Reduction of Smoke Emissions from DI Diesel Engine using Catalyst Based Oxygen Enrichment | International Conference & XX National conference in I.C.Engines and Combustion | 52-57 | Internal Combustion Engine | Combustion Institute, JNTU, Hyderabad | 2007 |
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| Anand R, Mirunalini.T, Mahalakshmi N.V | Jatropa oil as renewable oil in a DI diesel engine | 3 rd BSME-ASME International Conference on Thermal Engineering | | Energy | Dhaka, Bangladesh | 2006 |
| Anand R, Mahalakshmi N.V | Simultaneous reduction of oxides of nitrogen and smoke emissions by using EGR combined with Particulate trap in a DI diesel engine | ASME Internal Combustion Engine Division 2006 Spring Technical Conference | 1330 | Internal Combustion Engine | Aachen, Germany | 2006 |

National Institute of Technology, Tiruchirappalli:
Performa for CV of Dr. R. Anand

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(C) Books & Monographs

Book Articles

| Author(s) | Title of Book/Monograph | Name of Publishers | Year of Publication | ISSN/ISBN Number |
|---|--|------------------------------------|----------------------------|-------------------------|
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National Institute of Technology, Tiruchirappalli:
Performa for CV of Dr. R. Anand

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| D. Babu, R. Anand | Chapter 14: Biodiesel- diesel- alcohol blend asan alternative fuel for DICI engine | Academic Press, Elsevier | 2019 | 9780081027912 |
| A. Santhoshkumar, T. Vinoth, R. Anand | Chapter 12: Performance, combustion and emission characteristicsof DI diesel engine using Mahua biodiesel | Academic Press, Elsevier | 2019 | 9780081027912 |
| T. Vinoth, R. Anand | Chapter 17: Comparative evaluationof corrosion behavior ofAegle Marmelos Correabiodiesel and diesel on copper and mild steel metals | Academic Press, Elsevier | 2019 | 9780081027912 |
| R.Muthudineshkumar, R. Anand | Chapter 5: Production of biofuel from biomassdowndraft gasification and its applications | Academic Press, Elsevier | 2019 | 9780081027912 |

National Institute of Technology, Tiruchirappalli:
Performa for CV of Dr. R. Anand

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| R. Muthudineshkumar, R. Anand | Chapter 6: Anaerobic digestion of various feed stocks for second generation biofuel production | Woodhead Publishing, Elsevier | 2019 | 9780081027776 |
| R. Anand | Simultaneous Control of Oxides of Nitrogen and Soot in CRDI Diesel Engine Using Split Injection and Cool EGR Fueled with Waste Frying Oil Biodiesel and Its Blends | Springer, Singapore | 2018 | 9789812879677 |

National Institute of Technology, Tiruchirappalli:
Performa for CV of Dr. R. Anand

(D) List of Patents

| Name of Applicant(s) | Patent Title | Patent No. | Award Date | Agency/ Country | Status |
|---|---|----------------------------------|-------------------|------------------------|---------------|
| R. Muthudineshkumar, Vinoth Thangarasu, Ramanathan Anand | Syngas from Semecarpus Anacardium shells and method thereof | 380314 | 27/10/2021 | India | Granted |
| R. Anand, T. Vinoth | Biodiesel from Aegle Marmelos Correa and a method thereof | 378291 | 29/09/2021 | India | Granted |
| R. Anand, T. Vinoth | Synthesis of Carbon Supported Calcium Methoxide Green Catalyst from Senna Siamea Pod for Biodiesel Production | 376505 | 06/09/2021 | India | Granted |
| R. Anand, T. Vinoth | Biodiesel from non-edible Semecarpus Anacardium seed oil and method thereof | 364821 | 16/4/2021 | India | Granted |
| Rangasamy Yoganathan, Paramasivam Soundarapandiyam, Ramanathan Anand | Apparatus and method for withdrawing a broken tube expander trapped in a bank tube | Application no.: 201931031983 | 12/02/2021 | India | Published |
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