

• B/42, ASHRAY SOCIETY • NANDELAV ROAD •  
• NEAR NARMADA ALUMINIUM FACTORY • BHOLAV •  
• BHARUCH – 392 001 • GUJARAT • INDIA  
• **MOBILE** 094279 48520 • **E-MAIL** hittesh.k.solanki@gmail.com •

## GUJARATI PERSONAL INFORMATION

### **OBJECTIVE**

To be a self-motivated next generation leader with the ability to adapt to rapidly changing technologies and environments with a strong desire to undertake challenging jobs and to work with the team to achieve the goals of an organization.

### **DATE OF BIRTH**

16<sup>th</sup> June, 1980

### **NATIONALITY**

Indian

### **GENDER**

Male

### **MARITAL STATUS**

Married

### **LANGUAGES**

English, Hindi & Gujarati

### **EDUCATION**

- **Doctorate of Philosophy** from Charotar University of Science and Technology, Changa in **2018** (Deemed University).
- **Master of Engineering** from Sardar Vallabhbhai National Institute of Technology, Surat in **2004** (Deemed University) at **65.51%**.
- **Bachelor of Engineering** from South Gujarat University, Surat in **2001** at **59.57 %**.

## EXPERIENCE

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- Worked as a **Visiting Lecturer** in Mechanical Engineering Department at Sardar Vallabhbhai National Institute of Technology, Surat. (Deemed University) from **28<sup>th</sup> January 2004 to 9<sup>th</sup> January 2005.**
- Worked as a **Teaching Assistant** in Mechanical Engineering Department at Sardar Vallabhbhai National Institute of Technology, Surat. (Deemed University) from **10<sup>th</sup> January, 2005 to 31<sup>st</sup> May 2006.**
- Worked as a **Lecturer** in Mechanical Engineering Department at Mahatma Gandhi Institute of Technical Education & Research Centre (MGITER), Navsari from **1<sup>st</sup> June, 2006 to 5<sup>th</sup> August, 2010.**
- Worked as a **I/c Training & Placement Officer** at Mahatma Gandhi Institute of Technical Education & Research Centre (MGITER), Navsari from **1<sup>st</sup> June, 2007 to 5<sup>th</sup> August, 2010.**
- Worked as an Assistant Professor as well as Head of Department in Mechanical Engineering Department in Laxmi Institute of Technology (LIT), Sarigam from **7<sup>th</sup> August, 2010 to 5<sup>th</sup> May, 2011.**
- Worked as an Assistant Professor in Mechanical Engineering Department in Government Engineering College (GEC), Bharuch from **6<sup>th</sup> May, 2011 to 23<sup>rd</sup> April, 2025.**
- Working as an Associate Professor in Mechanical Engineering Department in Government Engineering College (GEC), Valsad from **24<sup>th</sup> April, 2025 to till date.**

## PROJECT GUIDE

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- Experimental Study of Design & Development of Magnetic Suspension (Year 2007 – 08).
- Design & Development of Special Purpose Vice (Year 2007 – 08).
- Experimental Analysis to Determine the Variation in Efficiency of A 2 – Stroke Petrol Engine While Increasing the Inlet Air Temperature (Year 2008 – 09).
- Electricity Generation through Gear and Door Mechanism (Year

2008 – 09).

- Check the Variation of Efficiency of a Two-Stroke Petrol Engine by Increasing Inlet Air Temperature as Well as Change the Size of Tube of Heat Exchanger (Year 2009 – 10).
- Design, Development and Experimental Analysis of Magnetic Disc Braking System (Year 2009 – 10).

## DISSERTATION

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- Analytical and Experimental Investigations on Gilkes GT 85/2 Twin Shaft Gas Turbine Engine Using Kerosene and Kerosene-Ethanol Blends as Fuel

## THESIS

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- Design, Numerical Simulation, Development and Experimental Investigations on Rich Burn Quick Mix Lean Burn (RQL) Combustor Using Hydrogen as Fuel for Small Gas Turbine Applications

## EXPERT LECTURE DELIVERED

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- Expert lecture on the title **“Energy Scenario of India”**, on 3<sup>rd</sup> June, 2019 in Two-week STTP programme on Recent Trend in IC Engine held at GEC, Bharuch during 3<sup>rd</sup> – 15<sup>th</sup> June, 2019.
- Expert lecture on the title **“Micro Combustion Using Hydrogen as a Fuel”**, on 4<sup>th</sup> June, 2019 in Two-week STTP programme on Recent Trend in IC Engine held at GEC, Bharuch during 3<sup>rd</sup> – 15<sup>th</sup> June, 2019.
- Expert lecture on the title **“Basic Thermodynamic Cycle for SI/CI/GTE”**, on 6<sup>th</sup> June, 2019 in Two-week STTP programme on Recent Trend in IC Engine held at GEC, Bharuch during 3<sup>rd</sup> – 15<sup>th</sup> June, 2019.
- Expert lecture on the title **“Emission audit in industry – A recent approach”**, on 12<sup>th</sup> June, 2019 in Two-week STTP programme on Recent Trend in IC Engine held at GEC, Bharuch during 3<sup>rd</sup> – 15<sup>th</sup> June, 2019.

## ADMINISTRATIVE ACTIVITIES

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- Member of examination committee in the end-semester at Sardar Vallabhbhai National Institute of Technology, Surat.

(Deemed University) during the April – May 2006.

- Act as a GTU Co-coordinator, Act as an ACPC Nodal, Act as a Member of Student Section, Act as a Member of NBA Committee at Government Engineering College, Bharuch.

## ACADEMIC ACTIVITIES

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- Member of **Reception Committee** at Specialized Workshop on Measurement Techniques in Turbomachines, Organized by Mechanical Engineering Department of S. V. National Institute of Technology, Surat during **23<sup>rd</sup> – 25<sup>th</sup> June, 2005.**
- Member of **Finance Committee** at Specialized Workshop on Measurement Techniques in Turbomachines, Organized by Mechanical Engineering Department of S. V. National Institute of Technology, Surat during **23<sup>rd</sup> – 25<sup>th</sup> June, 2005.**
- Member of **Accommodation Committee** at Specialized Workshop on Measurement Techniques in Turbomachines, Organized by Mechanical Engineering Department of S. V. National Institute of Technology, Surat during **23<sup>rd</sup> – 25<sup>th</sup> June, 2005.**
- Member of **Stage Committee** at Specialized Workshop on Measurement Techniques in Turbomachines, Organized by Mechanical Engineering Department of S. V. National Institute of Technology, Surat during **23<sup>rd</sup> – 25<sup>th</sup> June, 2005.**
- Member of **Food Committee** at Specialized Workshop on Measurement Techniques in Turbomachines, Organized by Mechanical Engineering Department of S. V. National Institute of Technology, Surat during **23<sup>rd</sup> – 25<sup>th</sup> June, 2005.**
- Member of **Coordination Committee** at One-Day Seminar on Importance and Relevance of Ph. D. in Technical Education, Organized by ISTE SVNIT CHAPTER, Surat Held on **3<sup>rd</sup> December, 2005.**
- Member of **Food Committee** at National Workshop on Different Aspects of Electron Microscopy, Organized by Mechanical Engineering Department of S. V. National Institute of Technology, Surat during **29<sup>th</sup> – 31<sup>st</sup> March, 2006.**
- Member of **Stage Committee** at National Workshop on Different Aspects of Electron Microscopy, Organized by

Mechanical Engineering Department of S. V. National Institute of Technology, Surat during **29<sup>th</sup> – 31<sup>st</sup> March, 2006.**

- Member of **Accommodation Committee** at National Workshop on Different Aspects of Electron Microscopy, Organized by Mechanical Engineering Department of S. V. National Institute of Technology, Surat during **29<sup>th</sup> – 31<sup>st</sup> March, 2006.**
- Member of **Reception Committee** at National Workshop on Different Aspects of Electron Microscopy, Organized by Mechanical Engineering Department of S. V. National Institute of Technology, Surat during **29<sup>th</sup> – 31<sup>st</sup> March, 2006.**
- Member of **Finance Committee** at National Workshop on Different Aspects of Electron Microscopy, Organized by Mechanical Engineering Department of S. V. National Institute of Technology, Surat during **29<sup>th</sup> – 31<sup>st</sup> March, 2006.**
- Member of **Finance Committee** at International Workshop on Advanced Analytical Techniques for Material Characterization, Organized by Mechanical Engineering Department of S. V. National Institute of Technology, Surat during **8<sup>th</sup> – 10<sup>th</sup> June, 2006.**
- Member of **Stage Committee** at International Workshop on Advanced Analytical Techniques for Material Characterization, Organized by Mechanical Engineering Department of S. V. National Institute of Technology, Surat during **8<sup>th</sup> – 10<sup>th</sup> June, 2006.**
- Member of **Food Committee** at International Workshop on Advanced Analytical Techniques for Material Characterization, Organized by Mechanical Engineering Department of S. V. National Institute of Technology, Surat during **8<sup>th</sup> – 10<sup>th</sup> June, 2006.**
- Act as an **Organizer** at College Level Technical Symposium Entitled “Ignition’ 07 – The Spark of Your Future” Organized by SAE Collegiate Chapter, Mahatma Gandhi Institute of Technical Education & Research Centre (MGITER), Navsari during **2<sup>nd</sup> – 3<sup>rd</sup> August, 2007.**
- Act as an **Organizer** at State Level Technical Symposium

Entitled “Eklavya’ 08 – The Perfect Aim” Organized at Mahatma Gandhi Institute of Technical Education & Research Centre (MGITER), Navsari, during **13<sup>th</sup> – 14<sup>th</sup> March, 2008.**

- Act as an **Organizer** at Three-day workshop Entitled “Intelligent Robotics & Image Processing” Jointly Organized by Nex – Robotics Pvt. Ltd. & Mahatma Gandhi Institute of Technical Education & Research Centre at Mahatma Gandhi Institute of Technical Education & Research Centre (MGITER), Navsari, during **14<sup>th</sup> – 16<sup>th</sup> November, 2008.**
- Act as an **Organizer** at Two-week Short-Term Training Programme Entitled “Recent Trend in IC Engine” Under the banner of DTE, Gandhinagar & ISTE, New Delhi and under the financial guidance of GUJCOST, Gandhinagar during **3<sup>rd</sup> – 15<sup>th</sup> June, 2019.**

#### **WORKSHOPS/SEMINARS/SUMMER SCHOOLS ATTENDED**

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- Attended a three-day workshop on **“Specialized Workshop on Measurement Techniques in Turbomachines”** organized by Mechanical Engineering Department of S. V. National Institute of Technology, Surat during **23<sup>rd</sup> June, 2005 to 25<sup>th</sup> June, 2005.**
- Attended a two-day workshop on **“Baja SAE India Vehicle Design Workshop”** organized by Mechanical Engineering Department of S. V. National Institute of Technology, Surat on **23<sup>rd</sup> December, 2006.**
- Attended AICTE approved two-week training on **“Induction Training Programme”** organized by National Institute of Technical Teachers’ Training & Research, Chandigarh at United College of Engineering & Research, Allahabad during **2<sup>nd</sup> January, 2008 to 12<sup>th</sup> January, 2008.**
- Attended a three-day Lecture Series on **“Generalized Laws of Mass, Momentum & Energy Conservation”** organized by Mechanical Engineering Department of S. V. National Institute of Technology, Surat on **6<sup>th</sup> February, 2008 to 8<sup>th</sup> February, 2008.**
- Attended a three-day National Conference on **“Advances in**

**Fluid Flow & Thermal Sciences”** organized by Mechanical Engineering Department of S. V. National Institute of Technology, Surat on **22<sup>nd</sup> May, 2008 to 24<sup>th</sup> May, 2008.**

- Attended AICTE approved one-week Short Term Training Programme on **“Computational Fluid Dynamics – Basic & Applications”** organized by Mechanical Engineering Department at SVNIT, Surat, during **7<sup>th</sup> July, 2008 to 11<sup>th</sup> July, 2008.**
- Attended a two-day workshop Entitled **“Intelligent Robotics”** Jointly Organized by Nex – Robotics Pvt. Ltd. & Mahatma Gandhi Institute of Technical Education & Research Centre at Mahatma Gandhi Institute of Technical Education & Research Centre (MGITER), Navsari, during **14<sup>th</sup> November, 2008 to 15<sup>th</sup> November, 2008.**
- Attended a one-day workshop Entitled **“Image Processing”** Jointly Organized by Nex – Robotics Pvt. Ltd. & Mahatma Gandhi Institute of Technical Education & Research Centre at Mahatma Gandhi Institute of Technical Education & Research Centre (MGITER), Navsari, during **16<sup>th</sup> November, 2008.**
- Attended AICTE sponsored one-week Short Term Training Programme on **“Advanced Engineering Optimization through Intelligent Techniques”** organized by Mechanical Engineering Department, Sardar Vallabhbhai National Institute of Technology, Surat during **22<sup>nd</sup> December, 2008 to 26<sup>th</sup> December, 2008.**
- Attended MHRD sponsored two-week Short-Term Training Programme on **“Induction Training Phase - I”** organized by National Institute of Technical Teachers’ Training and Research, Bhopal during **19<sup>th</sup> August, 2013 to 30<sup>th</sup> August, 2013.**
- Attended Education Department, Government of Gujarat sponsored three-day Short-Term Training Programme on **“Karmayogi Residential Training for Quality Improvement Programme in Technical Education”** organized by Commissionerate of Technical Education during

**6<sup>th</sup> December, 2013 to 8<sup>th</sup> December, 2013.**

- Attended MHRD sponsored two-week Short-Term Training Programme on **“Fluid Mechanics”** conducted by Indian Institute of Technology (IIT), Kharagpur organized by Mechanical Engineering Department, Sardar Vallabhbhai National Institute of Technology, Surat during **20<sup>th</sup> May, 2014 to 30<sup>th</sup> May, 2014.**
- Attended MHRD sponsored one-week Short-Term Training Programme on **“Master Cam for Faculty of Mechanical Engineering”** organized by National Institute of Technical Teachers’ Training and Research, Bhopal during **2<sup>nd</sup> February, 2015 to 6<sup>th</sup> February, 2015.**
- Attended GUJCOST & GEDA sponsored CTE & ISTE approved one-week Short-Term Training Programme on **“Modern Trends in Renewable Energy”** organized by Government Engineering College, Bharuch during **2<sup>nd</sup> November, 2015 to 6<sup>th</sup> November, 2015.**
- Attended MHRD sponsored two-week Short-Term Training Programme on **“Induction Training Programme Phase - II”** organized by National Institute of Technical Teachers’ Training and Research, Bhopal during **14<sup>th</sup> December, 2015 to 25<sup>th</sup> December, 2015.**
- Attended MHRD sponsored one-week Short-Term Training Programme on **“Developing Entrepreneurship Skills in Students”** organized by National Institute of Technical Teachers’ Training and Research, Bhopal during **4<sup>th</sup> January, 2016 to 8<sup>th</sup> January, 2016.**
- Attended MHRD sponsored two-week Short-Term Training Programme on **“3D Animation”** organized by National Institute of Technical Teachers’ Training and Research, Bhopal during **27<sup>th</sup> June, 2016 to 8<sup>th</sup> July, 2016.**
- Attended QIP one-week Short Term Training Programme on **“Advances in Theory and Design of Turbomachines”** organized by Mechanical Engineering Department, Sardar Vallabhbhai National Institute of Technology, Surat during **7<sup>th</sup> November, 2016 to 12<sup>th</sup> November, 2016.**



- Attended MHRD sponsored two-week Short-Term Training Programme on **“Organizational Effectiveness”** organized by National Institute of Technical Teachers’ Training and Research, Bhopal during **4<sup>th</sup> September, 2017 to 15<sup>th</sup> September, 2017.**
- Attended MHRD sponsored one-week Short-Term Training Programme on **“Develop Laboratory Experiments for Outcome Based Curriculum”** organized by National Institute of Technical Teachers’ Training and Research, Bhopal during **25<sup>th</sup> June, 2018 to 29<sup>th</sup> July, 2018.**
- Attended GUJCOST sponsored CTE & ISTE approved two-week Short-Term Training Programme on **“Recent Trend in IC Engine”** organized by Government Engineering College, Bharuch during **3<sup>rd</sup> June, 2019 to 15<sup>th</sup> June, 2019.**

## PROFESSIONAL MEMBERSHIP

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- Life Member of the Indian Society for Technical Education since 17<sup>th</sup> February, 2009. Membership Number: LM 61217.
- Associate Member of the Institution of Engineers (India) since 17<sup>th</sup> March, 2009. Membership Number: AM097111 – 4.
- Associate Member of Society of Automotive Engineers from December 2006 to December 2007. Membership Number: 7007510021.

## COMPUTER KNOWLEDGE

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- Operating Systems
- MS Office
- Ansys
- Auto-cad

## RESEARCH PAPERS

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### NATIONAL CONFERENCE

- Digvijay B. Kulsheshta, Hitesh K. Solanki & Zueb K. Lakdawala, **“Development of Electric & Hybrid Electric Vehicles,”** Presented & Published in National Conference on Energy and Fuel, Pune Institute of Engineering & Technology, Pune, 2004, **5<sup>th</sup> – 6<sup>th</sup> November, 2004**, Paper Id

- Soheli M. Panwala, Zobe K. Lakdawala & Hitesh K. Solanki, **“Hydrogen Storage in Metal Hydride for Hydrogen Fueled I.C. Engine,”** Presented in National Level Technical Paper Presentation Competition, Kadi (Gujarat), NLTPPC – 2005, 8<sup>th</sup> – 9<sup>th</sup> January, 2005.
- Digvijay B. Kulshreshtha, Hitesh K. Solanki & Zobe K. Lakdawala, **“Modeling of Gas Turbine Combustion Chamber for Design: The Applications & Preliminary Investigations,”** Presented in National Level Technical Paper Presentation Competition, Kadi (Gujarat), NLTPPC – 2005, 8<sup>th</sup> – 9<sup>th</sup> January, 2005.
- Rekh V. Viranchi, Zobe K. Lakdawala, Hiteh K. Solanki, **“Comparative Assessment on Break Thermal Efficiency of Multi-cylinder Engine Using Petrol, Liquefied Petroleum Gas & Compressed Natural Gas as Fuels at Different Load Conditions,”** Published in 19<sup>th</sup> National Conference on I.C. Engines & Combustion, Department of Mechanical Engineering, Annamalai University, Annamalai nager, 21<sup>st</sup> – 23<sup>rd</sup> December, 2005.
- Digvijay B. Kulshreshtha, Dr. S. A. Channiwala, Hitesh K. Solanki & Zobe K. Lakdawala, **“Design Philosophies of the Annular Type Combustion Chamber for Gas Turbine Engine”**, to be published at National Conference on Advances in Mechanical Engineering, All India Institute of Mechanical Engineering (AIME) – 2006, Jamia Millia Islamia, New Delhi, 20<sup>th</sup> – 21<sup>st</sup> January, 2006, Paper Id – TH – 53.
- Hitesh K. Solanki & Dr. S. A. Channiwala, **“Emission in Gas Turbine Engine: The Constituents & Its Effect on Atmosphere”**, to be published at National Conference on Advances in Mechanical Engineering, All India Institute of Mechanical Engineering (AIME) – 2006, Jamia Millia Islamia, New Delhi, 20<sup>th</sup> – 21<sup>st</sup> January, 2006, Paper Id – TH – 49.
- A. D. Parekh, Dr. S. A. Channiwala & Hitesh K. Solanki, **“Energy & Exergy Analysis of Captive Power Plant”** to be published at Proceedings of the National Conference on Advances in Mechanical Engineering 2006 (ECKAME –

2006) **18<sup>th</sup> – 19<sup>th</sup> March 2006**, Kota (Rajasthan), Paper Id – ECKAME – 2006 – T – 15.

- Rekh V. Viranchi, Zueb K. Lakdawala, Hiteh K. Solanki, Digvijay B. Kulshreshtha **“Comparative Assessment on Multi-cylinder Engine Using Petrol, Liquefied Petroleum Gas & Compressed Natural Gas as Fuel at Various Speed/Load Conditions,”** to be published at National Conference on Advances in Mechanical Engineering, All India Institute of Mechanical Engineering (AIME) – 2006, Jamia Millia Islamia, New Delhi, **20<sup>th</sup> – 21<sup>st</sup> January, 2006**, Paper Id – TH – 52.
- Nilesh R. Sheth & Hitesh K. Solanki, **“Benchmarking – An Overview & Process”**, to be presented in All India Seminar on Organizational Excellence for Globe Competitiveness Quality Edge 2008 at Yeshwantrao Chavan College of Engineering, Nagpur, **19<sup>th</sup> – 20<sup>th</sup> January, 2008**.
- Hitesh K. Solanki & Dr. S. A. Channiwala, **“Fuel Cell & Its Working Challenges”** to be presented in National Conference on Advances in Fluid Flow & Thermal Sciences (AFFTS – 2008), Department of Mechanical Engineering, Sardar Vallabhbhai National Institute of Technology, Surat, **22<sup>nd</sup> – 24<sup>th</sup> May, 2008**, Paper Id – AFFTS2008–A06.
- Hitesh K. Solanki, **“Different Methods to Find Out Adiabatic Flame Temperature and Predicting Pollutants”** to be presented in National Conference on Thermal, Fluid and Manufacturing Science (TFMS – 2012), Department of Mechanical Engineering, C. K. Pithawala College of Engineering & Technology, Surat, **20<sup>nd</sup> – 21<sup>th</sup> Jan, 2012**, Paper Id – TFMS2012-0406.
- Hitesh K. Solanki, **“To Check the Variation in Efficiency of the 2 – Stroke Engine While Increasing In Inlet Air Temperature”** to be presented in National Conference on Thermal, Fluid and Manufacturing Science (TFMS – 2012), Department of Mechanical Engineering, C. K. Pithawala College of Engineering & Technology, Surat, **20<sup>nd</sup> – 21<sup>th</sup> Jan, 2012**, Paper Id – TFMS2012-0906.
- Hitesh K. Solanki & Dr. D. B. Kulshreshtha, **“Thermo**

**acoustic in Gas Turbine Combustion Chambers”** to be presented in 2<sup>nd</sup> National Conference on Thermal, Fluid and Manufacturing Science (TFMS – 2014), Department of Mechanical Engineering, C. K. Pithawala College of Engineering & Technology, Surat, 24<sup>th</sup> – 25<sup>th</sup> January, **2014**, Paper Id – 2014TFMS1604.

#### INTERNATIONAL CONFERENCE

- Hitesh K. Solanki & Dr. S. A. Channiwala, **“Theoretical Study of Emission Characteristics of Kerosene Type Fuel for Small Gas Turbine”** Proceedings of the International Conference on Mechanical Engineering 2005 (ICME2005) , Dhaka, Bangladesh, **28<sup>th</sup> – 30<sup>th</sup> December, 2005**, Paper Id – ICME2005 – 061.
- Digvijay B. Kulshreshtha, Dr. S. A. Channiwala, Jitendra Chaudhary, Hitesh K. Solanki & Zueb K. Lakdawala, **“Effect of Divergence Angle on Flow Through Diffuser of A Gas Turbine Combustor: A CFD Approach”** Published in The American Society of Mechanical Engineers (ASME) Joint US European Fluid Engineering Summer Meeting , Miami Florida, US, **17<sup>th</sup> – 20<sup>th</sup> July, 2006**, Paper Id – FEDSM2006 – 98062.
- Hitesh K. Solanki & Dr. S. A. Channiwala, **“Thermodynamic Equilibrium Model of Emission Levels of Small Gas Turbine Engine Using Kerosene Ethanol Blends”** Presented & Published in Proceedings of IMECE2006, 2006 ASME International Mechanical Engineering Congress and Exposition, Chicago, Illinois, USA, **5<sup>th</sup> –10<sup>th</sup> November, 2006**, Paper Id – IMECE2006 –13195
- Hitesh K. Solanki & Dr. S. A. Channiwala, **“Experimental Investigation on Emission Characteristics of Kerosene-Ethanol Blends Type Fuel in Small Gas Turbine Engine Gilkes GT 85/2”** Presented & Published in Proceedings of IMECE2006, 2006 ASME International Mechanical Engineering Congress and Exposition, Chicago, Illinois, USA, **5<sup>th</sup> –10<sup>th</sup> November, 2006**, Paper Id – IMECE2006 –13196.

#### NATIONAL JOURNAL

- Hitesh K. Solanki & Dr. D. B. Kulshreshtha, **“Numerical Simulations of Rich Burn Quick Mix Lean Combustor”** Published in Indian Journal of Science and Technology, May, 2017, Paper Id – 112544, Volume – 10, Issue - 19.

#### **PATENT**

- Hitesh K. Solanki & Dr. D. B. Kulshreshtha, **“Rich Burn Quick Quench Lean Burn Combustor of Annular Configuration with Variable Cross-Section Primary Reaction Region”**, filled at Patent Application Publication, India dated 23<sup>rd</sup> April, 2017, The Patent Office Journal Issue No. 18/2017, Application No. 201721014369, date of publication: 5<sup>th</sup> May, 2017.

#### **REFERENCES**

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1. Dr. S. A. Channiwala  
Rtd-Professor,  
Mechanical Engineering Department,  
S. V. National Institute of Technology,  
Surat – 395 007.
2. Dr. Digvijay B. Kulshreshtha  
Associate Professor,  
Mechanical Engineering Department,  
C. K. Pithawala College of Engineering and Technology,  
Surat – 395 007.

**Date: 03<sup>rd</sup> May, 2025**

**Place: Bharuch**

**Dr. Hitesh K Solanki**