

# DR. GOUTHAM KUMAR NADAKUDITI

**MIEEE, MPES**



**Assistant Professor**

**(Group "A" Gazetted, Non-Ministerial)**

**Disaster Management Division**

**Department of Fire Engineering**

**National Fire Service College, Nagpur-440013**

**Ministry of Home Affairs, Government of India**

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SCOPUS ID : 56674575900 Web of Science Researcher ID : Y-7346-2019

Google Scholar: <https://scholar.google.co.in/citations?user=ivYwBCYAAAAJ&hl=en>

## PERSONAL PROFILE

Date of Birth: 27/05/1988

Passport Number: R2802548,

Marital Status: Single

Date of Issue: 23/06/2017,

Nationality: Indian

Date of Expiry: 22/06/2027,

Languages Known: Telugu, English and Hindi

Permanent Address: #Flat No. 506, Sasi Residency, Bypass Road, Mylavaram, Krishna district,  
Andhra Pradesh-521230, India.

## ACADEMIC PROFILE

| Course                                                      | University/College                                                                     | Subjects/Specialisation                                     | Aggregate Percentage | Division |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------|-------------------------------------------------------------|----------------------|----------|
| <b>Doctor of Philosophy<br/>(2013-2017)<br/>(FULL TIME)</b> | National Institute of Technology, Hamirpur, India                                      | Power System Optimization                                   | 90.0%                | First    |
| <b>Master of Technology<br/>(2010-2012)</b>                 | National Institute of Technology, Hamirpur, India                                      | Power Systems                                               | 82.2%                | First    |
| <b>Bachelor of Technology<br/>(2005-2009)</b>               | Lakireddy Bali Reddy College of Engineering (JNTU-K University), Mylavaram, A.P, India | Electrical and Electronics Engineering                      | 67.7%                | First    |
| <b>XII class<br/>(2003-2005)</b>                            | S. K. V.S Junior College, Vijayawada, A.P, India                                       | Mathematics, Physics, Chemistry, English, Telugu            | 82.1%                | First    |
| <b>X Class<br/>(2002-2003)</b>                              | Govt. High School, Mylavaram, A.P, India                                               | Mathematics, Physics, Chemistry, Social science and English | 77.3%                | First    |

## ACADEMIC PROJECTS

**B. Tech Project:** Modelling and Investigation of Vector Controlled Induction Machine using MATLAB Simulation.

**M. Tech Project:** Short-Term Hydrothermal Scheduling using Particle Swarm Optimization.

**Ph. D Project:** Hybrid Gravitational Search Algorithm based Solution Methodology for solving Short-Term Hydrothermal Scheduling Problems.

### **REASEARCH/TEACHING EXPERIENCE**

| Designation                               | Institute                                                                                                     | Year                           | Cumulative Experience |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------|
| Assistant Professor<br>(Group-A Gazetted) | Fire Engineering<br>National Fire Service College, Nagpur<br>Ministry of Home Affairs,<br>Government of India | 8-10-2018                      | Present               |
| Assistant Professor                       | Dept. of EEE,<br>V R Siddhartha Engineering College,<br>Vijayawada, A.P-520007                                | 03-05-2016<br>to<br>05-10-2018 | 2 Years 4 Months      |
| <b>TOTAL</b>                              |                                                                                                               |                                | 7 Years 10 Months     |

### **SUBJECTS TAUGHT IN TEACHING**

- Advanced Electrical Engineering
- Basics of Electronics and Communication
- Fire Protection
- Fire Arson and Investigation
- Electricity and Safety Systems
- Renewable Energy Systems
- Solar Photovoltaics Technologies
- Basic Electrical Engineering
- Flexible AC Transmission System
- Modern Optimization Techniques

### **RESEARCH INTERESTS**

- Power System Optimization
- Hybrid Meta-heuristic and stochastic optimization techniques
- Grid integration of renewable energy sources
- Smart grids and Micro grids
- DC-DC converter topologies and control

### **REVIEWING JOURNAL ACTIVITIES**

Reviewing paper for the following internationally peer-reviewed journals/Conferences:

- Renewable Energy
- Indonesian Journal of Electrical Engineering and Computer Science
- International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems
- Electric Power Components and Systems
- Computer Communication & Collaboration
- Artificial Intelligence Review
- FSDM, ICNEE-2018, IEEE-TENCON, ISTA, SNSP-2018

### **PROFESSIONAL MEMBERSHIPS**

1. IEEE Young Professionals, IEEE Membership, IEEE Power & Energy Society Membership, IEEE Smart Grid Community, IEEE Consultants Network Membership – **93424655**
2. Institute for Engineering Research and Publication-**Professional**

## RESEARCH PUBLICATIONS:

|                                                                                                                                                                                                                                                              |                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| <b>International Journals</b>                                                                                                                                                                                                                                | Science Citation Index : 8<br>SCOPUS Indexed : 4<br>Others : 6 |
| <b>International Conferences</b>                                                                                                                                                                                                                             | IEEE/IET : 7<br>Others : 6                                     |
| <b>Book Chapters</b>                                                                                                                                                                                                                                         | Springer : 4                                                   |
| <b>Total Research Contributions Till date : 35</b>                                                                                                                                                                                                           |                                                                |
| Google Scholar Index Profile:<br><a href="https://scholar.google.co.in/citations?user=ivYwBCYAAAAJ&amp;hl=en">https://scholar.google.co.in/citations?user=ivYwBCYAAAAJ&amp;hl=en</a><br><b>Citations : 154</b><br><b>h-index : 7</b><br><b>i10-index : 4</b> |                                                                |

### Patents

1. Filed a Patent on “A novel solar powered multipurpose agricultural robot for efficient farming” with Application No. 202141030581-A dated 07-07-2021 to India Patents Publication office and revised in 14-09-2022.

### Books/Book Chapters

1. S.K. Varma, P. Bhagath, **N. Gouthamkumar**, “A Prototype Model of Multi-utility Mist Vehicle for Firefighting in Confined Areas” Lecture Notes in Electrical Engineering 710, pp. 435-443, 2021. (**Scopus indexed**).
2. P Sowmith, R Madhusudhanrao, **N Gouthamkumar**, “Optimal Scheduling of Hydrothermal Plant Using Particle Swarm Optimization” Innovative Product Design and Intelligent Manufacturing Systems. pp 683-690, Year: 2020 (**Lecture Notes in Mechanical Engineering**). Springer, Singapore. (**Scopus indexed**).
3. Harish Pulluri, **N. Gouthamkumar**, U. Mohan Rao, Preeti and Mekala Girish Kumar, “Krill Herd Algorithm for Solution of Economic Dispatch with Valve-Point Loading Effect”, In: Applications of Computing: “**Automation and Wireless Systems in Electrical Engineering. Lecture Notes in Electrical Engineering**”, vol. 553. pp 383-392, Year. 2019, Springer, Singapore. (**Book Chapter**) (**Scopus indexed**).
4. Preeti Dahiya, Sandeep Dogra, Veena Sharma, Harish Pulluri, **N. Gouthamkumar** and U. Mohan Rao, “Performance Analysis of Classical Controllers Tuned Using Heuristic Approaches for Frequency Regulation”, In: Applications of Computing: “**Automation and Wireless Systems in Electrical Engineering. Lecture Notes in Electrical Engineering**”, vol. 553. pp 457-465, Year. 2019, Springer, Singapore. (**Book Chapter**). (**Scopus indexed**).
5. **N. Gouthamkumar**, U. Mohanrao, B. Venkateswararao, P. Srihari, “Economic Load Dispatch in Microgrids using Real Coded Genetic Algorithm” In: Soft Computing in Data Analytics. **Advances in Intelligent Systems and Computing**, vol. 758. pp 377-386, Year: 2018. Springer, Singapore. (**Book Chapter**) (**Scopus indexed**).

### International Transactions/Journals/Magazines

1. P. Harish, **N. Gouthamkumar**, et. al., “Krill herd technique for dynamic economic dispatch problems with the integration of wind power generation” Front. Energy Res., 21 December 2023 Volume 11 – 2023, pp. 1-18 | <https://doi.org/10.3389/fenrg.2023.1339020>. IF: 3.4, ISSN: 2296-598X. **(Science Citation Index)**
2. **N. Gouthamkumar**, et. all “Non-Dominated Sorting-Based Hybrid Optimization Technique for Multi-Objective Hydrothermal Scheduling” in Energies 2023, 16(5), 2316; <https://doi.org/10.3390/en16052316>. **(Science Citation Index)** pp. 1-25, IF: 3.3, ISSN: 1996-1073
3. **N. Gouthamkumar**, B. Srinivasarao, B. Venkateswararao, P. V. R. L. Narasimham, “Nondominated sorting-based disruption in oppositional gravitational search algorithm for stochastic multiobjective short-term hydrothermal scheduling,” Soft Computing, Vol. 23, No. 16, pp 7229–7248, August 2019. **(Science Citation Index)**.
4. U. Mohanrao, P. Harish, **N. Gouthamkumar**, “Performance Analysis of Transformer Oil/Paper Insulation with Ester and Mixed Dielectric Fluids,” IEEE Transactions on Dielectrics and Electrical Insulation. Vol. 25, No. 5, pp 1853–1862, August 2018. **(Science Citation Index)**
5. D. Sudheerkumar, PVRL. Narasimham, **N. Gouthamkumar**, D. Udaykiran, “Realization of a single stage control strategy for three-phase grid-connected photovoltaic system with linear and non-linear loads,” International Journal of Control Theory and Application, Vol. 10, No. 16, pp. 191-202, 2017. **(Scopus indexed)**.
6. T. Ajaykumar, S. Manmadharao, **N. Gouthamkumar**, G. Venkateswarlu “Compensation of unbalanced sag/swell by multilevel inverter based dynamic voltage restorer,” International Journal of Pure and Applied Mathematics, Vol. 114, NO. 7, pp. 11-20, 2017. **(Scopus indexed)**
7. G. Venkateswarlu, K. Srikanth, **N. Gouthamkumar** and T. Ajaykumar, “Critical Load Estimation for Sensitive Node of Radial Distribution System,” International Journal of Pure and Applied Mathematics, Vol. 114, No. 7, pp. 21-29, 2017. **(Scopus indexed)**.
8. K. Amulyavalli, B. Venkateswararao and **N. Gouthamkumar**, “Mi power based optimal location and sizing of shunt capacitor with L-index to improve voltage magnitude in IEEE 14 bus system,” International Journal of Pure and Applied Mathematics, Vol. 114, No. 7, pp. 259-269, 2017. **(Scopus indexed)**.
9. **N. Gouthamkumar**, V. Sharma, and R. Naresh “Application of nondominated sorting gravitational search algorithm with disruption operator for stochastic multiobjective short term hydrothermal scheduling”, IET Generation Transmission and Distribution, Vol. 10, No. 4, pp. 862-872, January 2016. **(Science Citation Index)**
10. **N. Gouthamkumar**, V. Sharma, and R. Naresh, “Nondominated sorting disruption based gravitational search algorithm with mutation scheme for multiobjective short term hydrothermal scheduling”, Electric Power Components and Systems, Vol. 52, No. 7, pp. 1-15, May 2016. **(Science Citation Index)**

11. **N. Gouthamkumar**, V. Sharma, and R. Naresh, "Disruption based gravitational search algorithm for short term hydrothermal scheduling", Expert Systems with Applications, Vol. 42, No. 20, pp. 7000-7011, December 2015. (**Science Citation Index**)
12. **N. Gouthamkumar**, V. Sharma, and R. Naresh, "Hybridized gravitational search algorithm for short term hydrothermal scheduling", IETE Journal of Research, Vol. 62, No. 4, pp. 1-11, December 2015. (**Science Citation Index**)
13. **N. Gouthamkumar**, V. Sharma, and R. Naresh, "An oppositional learning based gravitational search algorithm for short term hydrothermal scheduling", Asian Journal of Current Engineering and Maths, Vol. 4, No. 3, pp. 45-54, June 2015.
14. **N. Gouthamkumar**, V. Sharma, R. Naresh and P.K. Singhal, "Comparative Performance Analysis of Optimal Meta-Heuristic Approaches for Hydrothermal Coordination", International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering, Vol. 4, No. 4, pp. 2675-2683, 2015.
15. **N. Gouthamkumar**, V. Sharma, R. Naresh and P.K. Singhal, "Sinusoidal Migration of Biogeography based Optimization for Short Term Hydrothermal Scheduling", Scholars Journal of Engineering and Technology, Vol. 3, No. 3, pp. 244-251, 2015.
16. P.K. Singhal, R. Naresh, V. Sharma, and **N. Gouthamkumar**, "Generator scheduling under competitive environment using genetic algorithm," International Journal of Engineering, Science and Technology, Vol. 7, No. 3, pp. 24-32, 2015.
17. **N. Gouthamkumar**, V. Sharma, R. Naresh and P.K. Singhal, "Trapezoidal migration of biogeography based optimization for short term hydrothermal generation scheduling problem", Review of Business And Technology Research, Vol. 11, No. 1, pp. 106-112, December 2014.
18. T. Krishnamohan, R. Udaykishan, K. Rajeshbabu, **N. Gouthamkumar**, "Comparison of Facts Controller For Power Quality Problems In Power System" Review of Business And Technology Research, Vol. 11, No. 1, pp. 361-366, December 2014.

#### **International/National Conferences/Symposiums**

1. C. Bhawesh, **N. Gouthamkumar**, "Advanced Integrated Fire Controlling System to Reduce Casualty and Minimize Deaths" Proceedings - IEEE 2020 2nd International Conference on Advances in Computing, Communication Control and Networking, ICACCCN 2020 pp. 472-476, 2020 (**SCOPUS INDEXED**)
2. B. Raveena, B. Venkateswararao and **N. Gouthamkumar**, "Optimization of Hybrid off Grid Power System Using HOMER software", 3<sup>rd</sup> IEEE International Conference on Recent Trends in Electronics, Information & Communication Technology (RTEICT), 18-19 May 2018, at Bangalore, India, (DOI: 10.1109/RTEICT42901.2018.9012219) (**SCOPUS INDEXED**)
3. **N. Gouthamkumar**, B. Venkateswararao, and P.V.R.L. Narasimham, "Colliding Bodies Optimization Applied on IEEE-57 bus system for Optimal Power Flow Problem", IEEE International Conference on Innovations in Power and Advanced Computing Technologies (i-

PACT 2017), at VIT University, Vellore, 21<sup>st</sup> - 22<sup>nd</sup> April 2017. (**SCOPUS INDEXED**) (DOI: 10.1109/IPACT.2017.8245159)

4. K. Amulyavalli, B. Venkateswararao and N. **Gouthamkumar**, “FVSI based optimal location of TCSC to control the power flow in transmission line using Mipower Software“ 2<sup>nd</sup> National Conference on Emerging Trends in Power Energy and Control (ETPEC-17) at VIGNAN’S Foundation for Science Technology & Research University, Guntur, Andhra Pradesh, 11th - 12th August 2017.
5. D. Udaykiran, P.V.R.L. Narasimham, N. **Gouthamkumar**, and D. Sudheerkumar “Investigations of PV balancer architectures on practical solar photo voltaic system”, Accepted for publication in IEEE 2nd International Conference on Science in Information Technology (ICSITech:2016): Information Science for Green Society and Environment, 26-27 October 2016 in Balikpapan, Indonesia, pp. 226 - 231. (DOI: 10.1109/ICSITech.2016.7852638) (**SCOPUS INDEXED**)
6. D. Sudheerkumar, P.V.R.L. Narasimham, N. **Gouthamkumar**, and B. Udaykumar, “Realization of a single stage control strategy for three-phase grid-connected photovoltaic system with linear and non-linear loads”, In Proceedings of International conference on Aerospace, Electronics, Elerctrical, Communications & Instrumentation (ASECI-2016), V R Siddhartha Engineering College, Vijayawada, Andhra Pradesh, 22-23 October 2016, pp. 168-175.
7. N. **Gouthamkumar**, V. Sharma, R. Naresh, Preeti, “Bio-geography based optimization approach for noncascaded short term hydrothermal scheduling with reservoir constraints,” in National Conference on Advancements in Electrical Engineering and Energy Sciences (AEEES-2016), National Institute of Technology, Hamirpur, Himachal Pradesh, India, 24-25th May 2016 pp. 224-229.
8. H. Pulluri, R. Naresh, V. Sharma, N. **Gouthamkumar**, “Optimal power flow using colliding bodies optimization,” in National Conference on Advancements in Electrical Engineering and Energy Sciences 2016 (AEEES-2016), National Institute of Technology, Hamirpur, Himachal Pradesh, India, 24-25th May 2016 pp. 241-246.
9. P.K. Singhal, R. Naresh, V. Sharma, and N. **Gouthamkumar**, “A new strategy-based artificial bee colony algorithm for unit commitment problem,” In Int. Conf. Recent Developments in Control, Automation and Power Engineering (RDCAPE-2015), India, Mar. 2015, Noida, pp. 55-60.
10. P.K. Singhal, R. Naresh, V. Sharma, and N. **Gouthamkumar**, “Solution of unit commitment problem using enhanced genetic algorithm,” in Proc. 18th IEEE National Power Systems Conf. (NPSC-2014), IIT Guwahati, 18-20 Dec. 2014.
11. N. **Gouthamkumar**, V. Sharma, R. Naresh and P.K. Singhal, “Quadratic migration of biogeography based optimization for short term hydrothermal scheduling” In Proc. of IEEE: First International Conference on Networks & Soft Computing (ICNSC-2014), 19-20 Aug. 2014, pp. 400-405.

12. P.K. Singhal, R. Naresh, V. Sharma, and **N. Gouthamkumar**, “Enhanced lambda iteration algorithm for the solution of large scale economic dispatch problem,” in Proc. IEEE Int. Conf. Recent Advances and Innovations in Engineering, May 2014, pp. 1-6.
13. **N. Gouthamkumar**, V.P. Reddy, V. Sharma and R. Naresh, “Biogeography based optimization approach to optimal short term hydrothermal scheduling” In Proc. of IET: 3rd International Conference on Computational Intelligence and Information Technology (CIIT 2013), 8-9 Nov. 2013, pp. 141-146.
14. U. Mohanrao, R.K. Jarial, **N. Gouthamkumar**, “A novel fuzzy logic based technique to find the criticality of power transformer” in Proc. of International conference on computational intelligence and engineering applications, pp. 51-56, oct-2011.

### **WORKSHOPS/SHORT TERM COURSES ATTENDED/DELIVERED**

- **Board of Studies member** in Dept. of EEE, Lakireddy Bali Reddy College of Engineering, Mylavaram, Krishna District, Andhra Pradesh, India.
- **Delivered** a guest lecture on “Recent Trends in Renewable Energy Systems” at Lendi Institute of Engineering and Technology, Vizianagaram, during 7<sup>th</sup> – 8<sup>th</sup> December, 2017.
- **Delivered** a guest lecture on “Solar Photovoltaic Technologies” at ALIET, Vijayawada, during 8<sup>th</sup> – 9<sup>th</sup> September, 2017.
- **Training** course on “Power system simulation studies using MiPower V9.1 software” at PRDC Bangalore during 10<sup>th</sup> to 14<sup>th</sup> July, 2017.
- **Attended** a two days’ workshop on “Scientific Education Practices” At VRSEC, Vijayawada, during 27-29<sup>th</sup> January, 2017.
- **Delivered** a guest lecture on “Power System Grid Optimization” at LBRCE, Mylavaram, during 28<sup>th</sup> – 29<sup>th</sup> December, 2016.
- Faculty development programme (5 days) on “Do Engineering (LabVIEW Programming)” held during 20-25<sup>th</sup> June, 2016 at V R Siddhartha Engineering College, Vijayawada.
- Seminar (1 day) on “Reforms of Power Sector in India”, conducted on 30<sup>th</sup> July 2016 at V R Siddhartha Engineering, Vijayawada.
- Short term course (5 days) on “Exploring Science of Transportation Systems-2015” held at National Institute of Technology Hamirpur, Himachal Pradesh, India.
- National workshop (2 days) on “Exploring Science of Transportation Systems-2013” held at National Institute of Technology Hamirpur, Himachal Pradesh, India.
- National workshop (2 days) on “Evolution and Development of Indian Power Markets-2013” held at National Institute of Technology Hamirpur, Himachal Pradesh, India.
- Short term course (5 days) on “Power Generation Operation and Control-2013” held at National Institute of Technology Hamirpur, Himachal Pradesh, India.
- National Workshop on MATLAB and its applications (ELSOC 2010), NIT-Hamirpur.

### **TECHNICAL SKILLS**

**Programming Environments** : MATLAB, Optimization tool box, PSCAD, LabVIEW, mi-power, PSPICE, Power World Simulator, Pv Sol premium,  
**Programming languages** : C, C++ and Linux  
**Other Applications** : MS Office, Adobe Photoshop, Origin

### **SCHOLASTIC ACHIEVEMENTS**

- Got 1<sup>st</sup> position in All India Badminton Sports tournament MST-2014 organized by Malaviya National Institute of Technology, Jaipur, India.
- Secured 1<sup>st</sup> position in Inter year Tournament-2014 organized by the Sports Department, National Institute of Technology, Hamirpur, India.
- Got 1<sup>st</sup> prize in senior singles of District Badminton Championship 2013 conducted by District Badminton Association Hamirpur, Himachal Pradesh, India.
- Got 1<sup>st</sup> prize in senior doubles of District Badminton Championship 2013 conducted by District Badminton Association Hamirpur, Himachal Pradesh, India.
- Got 1<sup>st</sup> position in Inter Technology University Sports Association (ITUSA) Badminton Tournament of Northern region-2013 organized by National Institute of Technology, Hamirpur, India.
- Awarded scholarship from the Ministry of Human Resource and Development (MHRD), Government of India for the period 2010-2012.
- Graduate Aptitude Test in Engineering (GATE) qualified three times **GATE-2010, GATE-2011 and GATE-2012** in electrical engineering discipline.

### **EXTRA CURRICULAR ACTIVITIES**

- Serving as Common Hall Secretary in Himgiri Boys Hostel, National Institute of Technology Hamirpur, Himachal Pradesh, India from 2015 to present.
- Served as Hostel Secretary in Dhauladhar Boys Hostel, National Institute of Technology Hamirpur, Himachal Pradesh, India from 2013 to 2014.
- Served as Mess Secretary in Vindhyaachal Boys Hostel, National Institute of Technology Hamirpur, Himachal Pradesh, India from 2010 to 2012.
- Served as Class representative in the Department of Electrical and Electronics Engineering, Lakireddy Balireddy College of Engineering, Mylavaram, Andhra Pradesh, India from 2005 to 2009.



## REFERENCES

### 1) Dr. R. N. Sharma

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### 2) Dr. Veena Sharma

Associate Professor,

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### 4) Dr. Ugur Guvenc

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I hereby declare that the above-mentioned information is correct up to my knowledge and I bear the responsibility for the correctness of the above-mentioned particulars.

Place: Nagpur

(Dr. Goutham Kumar Nadakuditi)