

BIO-DATA

Dr. Tapan Kumar Gogoi

Professor

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Specialization: Thermal, Energy & Environmental Engg.

Experience: More than 20 years in teaching and research

Positions: Founder head of the department of Mech. Engg., Tezpur University from 23rd August, 2007 to 22nd August-2010 and also from 6th June, 2015 to 5th June, 2016

Area of Research:

1. Thermodynamic analysis of advanced energy systems.
2. Modelling of solid oxide fuel cell (SOFC) integrated power cycles
3. Inverse analysis using optimization technique
4. Biodiesel characterization and engine performance evaluation
5. Computational heat transfer and fluid flow

Education:

B.E., Mechanical Engineering, Assam Engg. College, Guwahati

M.Tech., Mechanical Engineering, IIT, Kharagpur

Ph.D., Tezpur University

Research Project Completed: Study of performance, combustion and emission characteristics of a turbocharged diesel engine with biodiesels available in North eastern region of India, funded by DST, Govt. of India

Ph D students guided: 5 ongoing

List of Publications

1. Journal publications

Sl No.	Title of the paper	IF	Citation	Publisher
Year 2017				
1.	P. Sarmah, T.K. Gogoi, R. Das, Estimation of operating parameters of a SOFC integrated combined power cycle using differential evolution based inverse method, Applied Thermal Engineering 119 (2017) 98–107	3.043	Recently accepted	Elsevier
2.	J. Kakati, T.K. Gogoi, K. Pakshirajan, Production of biodiesel from Amari (Amoora Wallichii King) tree seeds using optimum process parameters and its characterization, Energy Conversion and Management 135 (2017) 281–290.	4.801	Recently accepted	Elsevier
Year 2016				
3.	Pranjal Sarmah, T. K. Gogoi, Performance comparison of SOFC integrated combined power systems with three different bottoming steam turbine cycles, Energy Conversion and Management 132 (2017) 91–101.	4.801	1	Elsevier
4.	K. Trinavee, T.K. Gogoi, M. Pandey, Laminar convective heat transfer characteristic of Al ₂ O ₃ /water nanofluid in a circular microchannel, Journal of Physics: Conference Series 759 (2016) 012088	0.45	Recently accepted	IOP Science
5.	R. Das, K. Singh, B. Akay and T.K. Gogoi, Application of artificial bee colony algorithm for maximizing heat transfer in a perforated fin, Accepted in Proceedings of IMechE, Part E: Journal of Process Mechanical Engineering	1.107	Recently accepted	SAGE
6.	R. Das, K. Singh and T.K. Gogoi, Estimation of critical dimensions for a trapezoidal-shaped steel fin using hybrid differential evolution algorithm, Neural Computing and Applications, (2016) pp 1-11 DOI 10.1007/s00521-015-2155-x	1.569	3	Springer
7.	J. Kakati, T.K. Gogoi, Biodiesel Production from Kutkura (Meyna spinosa Roxb. Ex.) Fruit seed oil: its characterization and engine performance evaluation with 10% and 20% blends, Energy Conversion and Management 121 (2016) 152–161	4.801	8	Elsevier
Year 2015				

8.	T.K. Gogoi, D. Konwar, Exergy analysis of a H ₂ O-LiCl absorption refrigeration system with operating temperatures estimated through inverse analysis, Energy Conversion and Management, 110 (2016) 436-447 DOI:10.1016/j.enconman.2015.12.037	4.801	7	Elsevier
9.	K. Talukdar, T.K. Gogoi, Exergy analysis of a combined vapor power cycle and boiler flue gas driven double effect water-LiBr absorption refrigeration system, Energy Conversion and Management 108 (2016), 468-477 DOI: 10.1016/j.enconman.2015.11.020	4.801	9	Elsevier
10.	T.K.Gogoi, Estimation of Operating Parameters of a Water–LiBr Vapor Absorption Refrigeration System Through Inverse Analysis, ASME J. of Energy Resources Technology, 138 (2) (2016), 022002 Paper No: JERT-14-1402. DOI: 10.1115/1.4031833	1.89	3	ASME
11.	T.K. Gogoi, M. Pandey, and R. Das, Estimation of operating parameters of a reheat regenerative power cycle using simplex search and differential evolution based inverse methods, Energy Conversion and Management , 91 (2015) 204–218. doi:10.1016/j.enconman.2014.11.046	4.801	7	Elsevier
Year 2014				
12.	T.K. Gogoi, P. Sarmah, D. Deb Nath, Energy and exergy based performance analyses of a solid oxide fuel cell integrated combined cycle power plant, Energy Conversion and Management, 86 (2014) 507–519. doi:10.1016/j.enconman.2014.06.006	4.801	22	Elsevier
13.	T.K. Gogoi, K. Talukdar, Thermodynamic analysis of a combined reheat regenerative thermal power plant and water-LiBr vapour absorption refrigeration system, Energy Conversion and Management 78 (2014) 595–610. doi:10.1016/j.enconman.2013.11.035	4.801	17	Elsevier
14.	T.K. Gogoi, K. Talukdar, Exergy based parametric analysis of a combined reheat regenerativethermal power plant and water–LiBr vapor absorption refrigeration system, Energy Conversion and Management 83 (2014) 119–132. doi:10.1016/j.enconman.2014.03.060	4.801	18	Elsevier
15.	T. K. Gogoi, A Combined Cycle Plant with air and fuel recuperator for Captive power application, Part 1: Performance analysis and comparison with non -recuperated and gas turbine cycle with air recuperator, Energy Conversion and	4.801	13	Elsevier

	Management 79 (2014) 771–777. doi:10.1016/j.enconman.2013.10.028			
16.	T. K. Gogoi, R. Das, A Combined Cycle Plant with air and fuel recuperator for Captive power application, Part 2: Inverse analysis and parameter estimation, Energy Conversion and Management 79 (2014) 778–789 doi:10.1016/j.enconman.2013.10.027	4.801	8	Elsevier
Year 2013				
17.	T. K. Gogoi, R. Das, Inverse analysis of an internal reforming solid oxide fuel cell system using simplex search method, Applied Mathematical Modelling 37 (2013) 6994–7015. doi:10.1016/j.apm.2013.02.046	2.251	9	Elsevier
18.	T.K. Gogoi, Exergy Analysis of A Diesel Engine Operated with Koroch Seed Oil Methyl Ester and Its Diesel Fuel Blends, Int. J. of Exergy, 12 (2013) 183–204. DOI: 10.1504/IJEX.2013.053389	0.88	3	Inderscience
19.	T.K. Gogoi, S. Sarma and S. Borthakur, Simulation of a hybrid solid oxide fuel cell -gas turbine system, International Journal of Emerging Technology and Advanced Engineering, 3 (3) (2013) 250-258.			ISSN 2250-2459
20.	M. Pandey and T.K. Gogoi, Energy and exergy analysis of reheat regenerative vapour power cycle, International Journal of Emerging Technology and Advanced Engineering, 3 (3) (2013) 427-434.		4	ISSN 2250-2459
21.	T.K. Gogoi, N.K Sarma, A.A. Choudhury and T. Talukdar, First law analysis of Diesel engine performance using diesel and biodiesel fuel, International Journal of Emerging Technology and Advanced Engineering, 3 (3) (2013) 421-426.		1	ISSN 2250-2459
22.	T.K. Gogoi, A.K.Sarma, P.S. Misra, Syed T. Haque, Combustion analysis of jatropha methyl ester and its ethanol and acetone blends in a diesel engine, International Journal of Emerging Technology and Advanced Engineering, 3 (3) (2013) 51-57		5	ISSN 2250-2459
Year 2011				
23.	T.K. Gogoi, D.C. Baruah, The use of Koroch seed oil methyl ester blends as fuel in a diesel engine, Applied Energy, 88 (2011) 2713-2725. doi:10.1016/j.apenergy.2011.02.023	5.613	44	Elsevier
24.	T.K. Gogoi, D.C. Baruah, Performance and energy analyses of a diesel engine fuelled with Koroch	-	1	Inderscience

	seed oil methyl ester and its diesel fuel blends, Int. J. Energy Technology and Policy, 7 (5/6) (2011) 433-454. doi: 10:1504/IJETP.2011.045235			
Year 2010				
25.	T.K. Gogoi, D. C. Baruah, A Cycle Simulation Model for Predicting Performance of a Diesel Engine Fuelled by Diesel and Bio-diesel Blends, Energy 35 (2010) 1317–1323. doi:10.1016/j.energy.2009.11.014	4.844	70	Elsevier

2. Conference publications

Sl. No.	Publications
Year 2017	
1.	J. Kakati, T.K. Gogoi, Combustion analysis of a diesel engine fuelled with 10% and 20% blending of Terminalia seed oil based biodiesel with conventional diesel, in the Proceedings of the ISME, held during 23-25th February, 2017 at NIT Warangal, India
2.	M.P. Boruah, T.K. Gogoi, Thermal performance of tapered microchannel heat sink using Al ₂ O ₃ /water nanofluid, in the Proceedings of the SMETB,2017 held during 25-26th March, 2016 at Tezpur University, Assam, India
3.	K. Talukdar, T.K. Gogoi, Performance of a combined power and cooling system with vapour compression and absorption refrigeration system as bottoming cycle: a comparative study, in the Proceedings of the SMETB,2017 held during 25-26th March, 2016 at Tezpur University, Assam, India
4.	D. Konwar, T.K. Gogoi, Exergy based parametric analysis of a water-LiCl vapour absorption refrigeration system, in the Proceedings of the SMETB,2017 held during 25-26th March, 2016 at Tezpur University, Assam, India
5.	A. Bora, M. Saikia, S. Anand, T.K. Gogoi, Exergy analysis of a reheat regeneration vapour power cycle with a number of feed water heaters, in the Proceedings of the SMETB,2017 held during 25-26th March, 2016 at Tezpur University, Assam, India
6.	J. Kakati, T. K. Gogoi, Characterization of biodiesels and performance analysis of a diesel engine run on biodiesel blends, in the Proceedings of the SMETB,2017 held during 25-26th March, 2016 at Tezpur University, Assam, India
Year 2016	
7.	T.K. Gogoi, J. Kakati, Characterization of biodiesel produced from Terminalia seed oil and engine performance evaluation with 10% and 20% blending, in the Proceedings of the IMECE,2016 held during 11-17th November, 2016 at Phoenix, Arizona, USA.
8.	K. Talukdar, T.K. Gogoi, Comparative analysis of performance of a combined power and cooling system with vapor compression and absorption refrigeration system as bottoming cycle, in the Proceedings of the COMET,16 held during 15-17 th January, 2016 at IIT BHU.
9.	K. Talukdar, T.K. Gogoi, Thermodynamic analysis of a combined vapor power cycle and absorption refrigeration system, in the proceedings of Global conference on Renewable energy

	held in NIT Patna, 4-6 th March, 2016.
10.	K. Trinavee, T.K. Gogoi, Flow and heat transfer analysis of AlO ₃ -water and Cu-water Nanofluid in a circular micro-channel, in the Proceedings of ETIE 2016 held during April 28-29, 2016 at Royal School of Engineering and Technology, Guwahati.
Year 2015	
11.	K. Trinavee, T.K. Gogoi, M. Pandey, Flow and Heat transfer analysis in a circular microchannel with alumina based nanofluid, in the book of abstracts of XXVII IUPAP Conference on Computational physics, December 2-5, 2015 at IIT Guwahati
12.	P. Sarmah and T.K. Gogoi, Exergy analysis of a solid oxide fuel cell (sofc) integrated combined power cycle, in the Proceedings of the 17th ISME Conference on Advances in Mechanical Engineering held during October 3-4, 2015 at IIT Delhi, New Delhi.
13.	U. Gautam, S. Das, S. Das and T.K. Gogoi, A parametric study on the effect of varying open water heater pressure on thermodynamic performance of a combined cycle power plant, in the Proceedings of the 17th ISME Conference on Advances in Mechanical Engineering held during October 3-4, 2015 at IIT Delhi, New Delhi.
Year 2014	
14.	P. Sarmah and T. K. Gogoi, Parametric analysis of a hybrid solid oxide fuel cell –gas turbine plant, in the proceedings of International Symposium on Aspects of Mechanical Engineering & Technology for Industry held in NERIST, Arunachal Pradesh, during 6-8 th December, 2014
15.	N. Koushik, S. Bhuyan and T.K. Gogoi, A model for diesel fuel droplet evaporation and parametric analysis of evaporation rate, in the proceedings of International Symposium on Aspects of Mechanical Engineering & Technology for Industry held in NERIST, Arunachal Pradesh, during 6-8 th December, 2014.
16.	S.Z. Hoque and T.K. Gogoi, Thermodynamic analysis of a cascaded vapour compression refrigeration system through exergy, in the proceedings of International Symposium on Aspects of Mechanical Engineering & Technology for Industry held in NERIST, Arunachal Pradesh, during 6-8 th December, 2014.
17.	T.K. Gogoi and M. Pandey, Performance analysis of a reheat regenerative thermal power plant with solid biomass fuels and coal of various compositions, in the proceedings of International conference on advanced materials and Energy technology (ICAMET) held in IEST Shibpur, Kolkata during 17-19 th December, 2014.
18.	T.K. Gogoi and P. Sarmah, Exergy analysis of a hybrid solid oxide fuel cell–gas turbine configuration, in the proceedings of International Conference on Environment and Energy (ICEE) held in JNTUH, Kukatpally, Hyderabad during 15-17 th December, 2014.
Year 2013	
19.	T.K. Gogoi, S. Sarma and S. Borthakur, Simulation of a hybrid solid oxide fuel cell-gas turbine system, in the proceedings of International Conference on Energy Resources Technologies for Sustainable Development (ICERTSD-2013), held in BESU during 7-9 th February, 2013
20.	M. Pandey and T.K. Gogoi, Energy and exergy analysis of reheat regenerative vapour power cycle, in the proceedings of International Conference on Energy Resources Technologies for Sustainable Development (ICERTSD-2013), held in BESU during 7-9 th February, 2013
21.	T.K. Gogoi, N.K Sarma, A.A. Choudhury and T. Talukdar, First law analysis of Diesel engine performance using diesel and biodiesel fuel, in the proceedings of International Conference on Energy Resources Technologies for Sustainable Development (ICERTSD-2013), held in BESU during 7-9 th February, 2013.
22.	T.K. Gogoi, A.K.Sarma, P.S. Misra, Syed T. Haque, Combustion analysis of jatropha methyl

	ester and its ethanol and acetone blends in a diesel engine, in the proceedings of International Conference on Energy Resources Technologies for Sustainable Development (ICERTSD-2013), held in BESU during 7-9th February, 2013
Year 2011	
23.	T.K. Gogoi, D.C. Baruah, Energetic Performance Analysis of a Diesel Engine Fuelled With Koroch Seed Oil Methyl Ester and Its Diesel Blends, in the proceedings of International Conference on Thermal Energy and Environment (INCOTEE), held in Kalasalingam University, Tamilnadu during 24-26 th March, 2011.
24.	T.K. Gogoi, S. Talukdar, D.C. Baruah, Comparative Analysis of Performance and Combustion of Koroch Seed Oil and Jatropha Methyl Ester blends in a Diesel Engine, in the proceedings of World Renewable Energy Congress (WREC) 2011 held in Linköping, Sweden during 8-13 th May, 2011.
Year 2010	
25.	T.K. Gogoi, D.C. Baruah, Study of Performance and Combustion in a small DI diesel engine fuelled with biodiesel and its diesel blends, in the proceedings of National Conference on Renewable Energy organized by Deptt. of Energy, Tezpur University during 23–25 March 2010.
Year 2009	
26.	T.K. Gogoi, D.C. Baruah, Development of a cycle simulation model for predicting performance of a Diesel Engine fuelled by diesel and bio-diesel blends". In the proceedings of CAMSCM, 2009 organized in NERIST, Nirjuli, Arunachal Pradesh

M.Tech. projects guided

1. Inverse estimation of Prandtl and Reynolds number in a hydrodynamically developed and thermally developing flow through a square duct
2. Numerical study of laminar forced convection of some selected nanofluids in a circular microchannel with and without magnetic field effect

B.Tech. projects guided

1. Exergy analysis of single and double effect ammonia water absorption refrigeration systems
2. Exergy analysis and thermo-economic optimization of a cascaded vapor compression refrigeration system.

3. Exergy analysis of the captive power plant of Numaligarh Refinery limited, Golaghat, Assam
4. Numerical Simulation of a Hybrid Solid Oxide Fuel Cell (SOFC) –Gas turbine(GT) system
5. Study of performance of a reheat regenerative thermal power plant fueled with solid biomass and coal of various compositions: A theoretical study
6. Modeling of Fuel Injection system of a Diesel Engine
7. Numerical Analysis of Lid driven flow in a square cavity at low Reynolds Number.
8. Numerical simulation of heat transfer in thermally and simultaneously developing flows in a circular pipe.
9. Performance and Heat Release Analysis of a diesel engine fuelled with diesel and biodiesel blends.
10. Combustion and performance evaluation of a diesel engine fuelled with biodiesel produced from Koroch seed and Jatropha Curcus Oil.
11. Numerical Solution of One dimensional transient heat conduction equation.
12. Energy and Exergy Analyses of Diesel Engine Processes Using Bio-diesel Blends.
13. Experimental investigation on performance. Combustion and emission characteristics of a single cylinder direct injection diesel engine fuelled with biodiesel
14. Modeling of heating and evaporation of fuel droplets: A numerical analysis
15. Performance and Combustion analysis of Jatropha methyl ester and its ethanol and acetone blends in a diesel engine

