




**Faculty Profile**

Name	: Dr.M.Thilak				
Date of Birth	: 26.01.1978				
Highest Qualification	: Ph.D				
Date of Joining	: 08.07.2010				
Designation	: Professor				
Date of promotion (Present Designation)	: 01.09.2022				
Area of Interest	: Machining Tolerance Allocation, Unconventional Machining Parameters Analysis and Optimization				
Mobile No	: +91 7010321179	Email ID	: thilak.m@trp.srmtrichy.edu.in		
Experience	: Teaching : 20.3 Years	Industry	: 2 Years	Research	: -
Address (for Communication)	No.2, Gnanadhickkam Pillai Street, Kallukuzhi, Trichy-620020.				

**Association with Professional Bodies**

Name (Professional Body)	Indian Welding Society (IWS)	International Association of Engineers (IAENG)	International Society for Research & Development (ISR D)
Type of Membership and No.:	Life Member	Life Member	Life Member

**Research**

Ph. D Guidance					
Supervisor / Guide ship No. :	3120006	University :	Anna University	No. of Scholars :	01
Publication*					
International Journals :	31	National Journals :	1		
International Conference :	20	National Conference :	13		
Project Grants (Research projects guided or undertaken/ Sponsored Projects)					
Received (Amount) :	-	Applied (Amount) :	Rs. 91,82,749		
Patent					
Published :	4	Granted :	-		

**Books**

Published	3
:	

**FDPs / STTPs / Workshops / Seminars etc.,**

FDP		STTP		Workshop		Seminar		Others	
Attended :	30	Attended :	1	Attended :	10	Attended :	1	Attended :	-
Organized :	1	Organized :	-	Organized :	1	Organized :	3	Organized :	-

**\*List of Publications :****International Journals****31).Minimization of defects in glove manufacturing using total failure mode effects analysis  
flower pollination optimization**

AIP Conference Proceedings,ISSN: 1551- 7616, 2023,

DOI: <https://doi.org/10.1063/5.015741>,Volume 2890 Issue 1 August 2023,Brucely.Y., G.Paulraj., **M.Thilak****30).Regression analysis on forward modeling of diffuse optical tomography system for  
carcinomacell detection.***Scientific Reports*ISSN: 2045-2322 ,DOI: <https://doi.org/10.1038/s41598-023-29063-4> , 13, 2406 (2023)Maheswari, K.U., **Thilak, M.**, SenthilKumar, N . et al.**29).Preparation and characterization of Al8011 TiO2 and nano Graphene hybrid composite  
mechanical and wear behavior**Materials Today: Proceedings, ISSN: 2214-785, DOI: <https://doi.org/10.1016/j.matpr.2023.04.192>,  
April 20, 2023**28).Computer-aided tolerance chain identification system for tolerance allocation***International Journal on Interactive Design and Manufacturing*, ISSN: 1955-2513, 2023.**Thilak, M**, Brucely, Y. Paulraj, G. . et al.**27).Non-traditional tolerance design techniques for low machining cost***International Journal on Interactive Design and Manufacturing*ISSN: 1955-2513, 2022, DOI:<https://doi.org/10.1007/s12008-022-00992-0> , Volume, 17, July 2022**Thilak, M.**Jayaprakash, G., Paulraj, G.**26).Computer-aided tolerance chain identification system for tolerance allocation***International Journal on Interactive Design and Manufacturing*ISSN: 1955-2513,<https://doi.org/10.1007/s12008-022-01169-5>, Vo.l.17, 917- 929, Jan 2023**Thilak, M**, Brucely, Y. Paulraj, G. . et al**25).Identification of specific metrics for sustainable lean manufacturing in the automobile  
industries***Benchmarking: an International Journal*

ISSN: 1463-5771 ,DOI:10.1108/BIJ-04-2021-0190,pp.1-52, 30 September 2021.

Naveen Kumar, Mathiyazhagan Kaliyan, **M. Thilak**, Ángel Acevedo-Duque**24).Machining tolerance allocation through tolerance charting using a Differential  
Evolution(DE) technique***International Journal of Engineering, Science and Mathematics*

ISSN: 2320-0294, Vol. 7 Issue4, pp.89-99, April 2018

**Dr. M.Thilak**, V. Senthilkumar**23).Prediction of Kerf Width and Roughness Using Artificial Intelligence during CO<sub>2</sub>  
LaserCutting of Duplex Steel***International Journal of Engineering, Science and Mathematics*

ISSN: 2320-0294,Vol. 7 Issue4, pp.405-411, , April 2018

**Dr.M.Thilak**, I. Thiliphen, R.Venkateshwaran, M.Haris kumar, B.Mohamed Imran

**22).Application of Grey Relational Analysis for Optimization of Kerf Quality during CO2 LASERCutting of Mild Steel**

*Materials Today: Proceedings*

ISSN: 2214-7853 Vol. 5, pp. 19209–19215, ,2018

R. Karthikeyan, V.Senthilkumar, **Dr. M. Thilak**, A.Nagadeepan

**21).Performance Analysis of VCR System Using Hydrocarbon Refrigerants**

*International Journal of Innovative Research in Technology*

ISSN: 2349-6002, Vol.4 Issue 1, pp.127-132 ,June 2017.

R.Dhananjeyan , S. Senthil kumar , **M. Thilak** and M.Ganeshkarthikeyan

**20).Thermal Analysis of Solar Energy Storage System Using Phase Change Material with MetalNano Particles**

*International Journal of Innovative Research in Technology*

, ISSN: 2349-6002, Vol.4 Issue 1, pp.133-143June 2017.

G.Karthik , **M. Thilak** , S. Senthilkumar and R.Baskar

**19).Experimental Analysis of Water Cooled Condenser System with Nano Fluids**

*International Journal of Innovative Research in Technology*

ISSN: 2349-6002,Vol.4 Issue 1,pp. 144-150, June 2017.

Periyasamy R Ganesh Karthikeyan M **Dr.M. Thilak** Indhusekaran N

**18).Parametric analysis of laser cutting of mild steel material**

*Journal of Chemical and Pharmaceutical Sciences*

ISSN: 0974-2115,Vol.10 Issue 1,pp.385-388 December 2016.

V. Senthilkumar, G.Jayaprakash, **M. Thilak**

**17).A Comparative Approach on Replacement of Carbon Steel on Power Piping By Nickel Based Alloy**

*International Journal of Innovative Research in Science, Engineering and Technology*

ISSN (Online): 2319-8753, Vol. 5, Special Issue 8, pp.1- 15, May 2016.

Thilak.M, Anburaj R, Bharathi Raja K, Kamalakanth G R, Karthigeyan G R

**16).Optimization of Machining Process Parameters in Abrasive Water Jet Machining**

*International Journal of Innovative Research in Science,Engineering and Technology*

ISSN (Online): 2319-8753, Vol. 5, Special Issue 8, pp.221- 228, May 2016.

**Thilak.M**, Anandan A, Arockia George G, Elangovan A, Karthikeyan S

**15).Optimization of Machining Process Parameters in Plasma Arc Machining**

*International Journal of Innovative Research in Science,Engineering and Technology*

ISSN (Online): 2319-8753, Vol. 5, Special Issue 8, pp.229- 240, May 2016.

**Thilak. M**, Boopalan. N , Cyril Gnanaraj. I , Ganesh Babu A.R , Gogul.N

**14).Performance and Emission Study on Diesel Engine Using Different Blends of Neem Bio-Diesel**

*International Journal of Scientific Development and Research*

ISSN: 2455-2631, Vol 1 Issue 5,pp.619-623, May-2016.

D.S.Srivaths Chakravarthy, **M.Thilak**, S.Senthil Kumar

**13).Optimal Tolerance Allocation through Tolerance Chain Identification System**

*International Journal of Applied Engineering Research*

**Vol. 10 No.78 , pp. 160-168, ISSN 0973-4562,2015**

**Thilak, M , N. Senthil Kumar and Jayaprakash, G**

**12).Experimental Investigation and Analysis of Laser Cutting Process Parameters**

*International Journal of Applied Engineering Research*

**Vol. 10 No.78 , pp.74-77, ISSN 0973-4562,2015**

Senthilkumar.V,**Thilak.M**,Periyasamy.N,Manigandan.A

**11).Performance Comparison on Vapour Compression Refrigeration System by Using Alternate Refrigerants**

*International Journal of Applied Engineering Research*

**Vol. 10 No.78 , pp.239-243, ISSN 0973-4562,2015**

Senthil kumar.S, **Thilak.M**, Raja jayasingh.T, Arun.S

**10).Optimization of tolerance design for mechanical assembly under thermal impact using FEA**

*Int. Journal of Advanced Manufacturing Technology*

Jayaprakash, G., Sivakumar, K. and **Thilak, M.**

Vol 73:859-873,2014, DOI 10.1007/s00170-014-5845-0.

**9).Optimal Allocation of Machining Tolerance through Tolerance Charting**

*International Review of Mechanical Engineering (IREME)*

Vol.6, No.:6, September 2012.

**Thilak. M**, Sivakumar. K & Jayaprakash.

**8).Optimal selection of machining datum and machining tolerance allocation through tolerance charting**

*The International Journal of Manufacturing Technology and Management,*

Vol. 25, No. 1/2/3, 2012, pp.135-160. DOI: 10.1504/IJMTM.2012.047726,

**Thilak Manoharan**, Sivakumar Karuppan & Jayaprakash Govindarajalu.

**7).Selection of Machining Datum and Allocation of Tolerance through Tolerance Charting Technique**

*Chinese Journal of Mechanical Engineering,*

Vol.25, No.4, 2012, pp.697-705. DOI: 10.3901/CJME.2012.04.697,

**Manoharan Thilak**, Karuppan Sivakumar&Govindharajalu Jayaprakash.

**6).A Numerical Study on effect of Temperature and inertia on Tolerance Design of Mechanical Assembly.**

*Engineering Computations,*

Volume 29, issue 7, 2012. pp.722 – 742, <http://dx.doi.org/10.1108/02644401211257236>,

G. Jayaprakash, K. Sivakumar & **M. Thilak.**

**5).FEA compliant parametric tolerance allocation of mechanical assembly using neural network and differential evolution algorithm**

*International Journal of Computer Integrated Manufacturing,*

Volume 25, Issue 7, 2012, pages 636-654, DOI:10.1080/0951192X.2012.665184,

G. Jayaprakash, K. Sivakumar & **M. Thilak.**

#### **4).Tolerance design of mechanical assembly using NSGA II and finite element analysis**

*Journal of Mechanical Science and Technology,*

Vol.26 (10), 2012, pp. 1-9 , DOI 10.1007/s12206-011-0913-y,

Jayaprakash Govindarajalu, Sivakumar Karuppan &**Thilak Manoharan.**

#### **3).Integration of thermomechanical strains into optimal tolerance design of mechanical assembly using NSGA II and FE simulation**

*Journal of Mechanical Engineering Research.,*

Vol.3 (6), pp. 168 -180, 2011. ISSN 2141-2383 ©2011 Academic Journals

Jayaprakash, G., Sivakumar, K. and **Thilak, M.**

#### **2). Parametric Tolerance Analysis of Mechanical Assembly by Developing Direct Constraint Model in CAD and Cost Competent Tolerance Synthesis**

*Intelligent Control and Automation,*

Vol.1, No.1, 2010, pp.1-14. DOI:10.4236/ICA.201.11001

#### **1).Parametric Tolerance Analysis of Mechanical Assembly Using FEA and Cost Competent Tolerance Synthesis Using Neural Network**

*Journal of Software Engineering and application*

Vol.3,No.12,2010. pp.1148-1154, DOI:10.4236/JSEA.2010.312134

Govindarajalu Jayaprakash, Karuppan Sivakumar &**Manoharan Thilak**

#### **National Journal**

##### **1. “Time Optimal Trajectory Planning Using Intelligent Algorithms”**

*Manufacturing Technology Today (MTT),*

Vol. 4, Issue 12, pp.3-7, ISSN: 0972-7396, December 2005

**M.Thilak ., S.Ramabalan**

#### **International Conference**

1. “Tolerance allocation through tolerance charting technique using non-conventional optimization techniques” has been presented in IISC Centenary- International Conference on Advances in Mechanical Engineering (IC-ICAME) conducted by Department of Mechanical Engineering, IISC Bangalore, July 2008.

2. “Minimum Cost Tolerance allocation through tolerance charting technique using non- conventional optimization technique” has been presented in 2nd International and 23rd All India Manufacturing Technology Design and Research Conference (AIMTDR 2008) , conducted by IIT Chennai, December 15-17 ,2008.

3. “Tolerance synthesis by neural learning and Non-dominated sorting genetic algorithm II”, International conference on All India Manufacturing Technology, Design and Research conference (AIMTDR 2008) conducted by I.I.T. Chennai.

4. “Sustainable Tolerance Design of Compliant Assembly Considering Inertia Effects and with Minimum Quality Loss Function”, 7th Global Conference on Sustainable Manufacturing conducted by I.I.T. Chennai.

5. "Optimum Cost Tolerance allocation through tolerance charting technique using non- conventional optimization technique", International Conference on Total Engineering, Analysis & Manufacturing Technologies–TEAM TECH 2009, conducted by Team Tech Technologies, Bangalore, November 19-21, 2009.
6. "A GA based Tolerance allocation through branch and link method of tolerance charting technique" , International Conference on Total Engineering, Analysis & Manufacturing Technologies – TEAM TECH 2009, conducted by Team Tech Technologies, Bangalore, November 19-21, 2009.
7. "Optimum Cost Tolerance allocation through tolerance charting technique using DE", International Conference on Total Engineering, Analysis & Manufacturing Technologies – TEAM TECH 2009 conducted by Team Tech Technologies, Bangalore, November 19-21, 2009.
8. "Integration of Thermo Mechanical Strains into Optimal Tolerance Design of Mechanical Assembly using Differential Evolution", International Conference on Total Engineering, Analysis & Manufacturing Technologies – TEAM TECH 2009.
9. "Optimal Tolerance Design of Piston with Thermal Barrier Coating using Non Dominated Sorting Genetic Algorithm II and FEM Simulation", International Conference on Total Engineering, Analysis & Manufacturing Technologies – TEAM TECH 2009.
10. "Optimal Machining Parameters in Electrical Discharge Machining Using Non Conventional Optimization Technique",International Conference on Total Engineering, Analysis & Manufacturing Technologies – TEAM TECH 2009.
11. "Least Cost Tolerance allocation through tolerance charting technique using non- conventional optimization technique", International Conference on Latest Trends in Simulation Modeling and Analysis (COSMO 2009), conducted by NIT-Calicut, Kerala, December 17- 19,2009.
12. "Optimum Cost Tolerance allocation through tolerance charting technique using non- conventional optimization technique", International Conference on Advances in Industrial Engineering Applications (ICAIEA), conducted by Anna University, Chennai, January 6-8,2010
13. "Optimum Selection of Datum and Machining Tolerance allocation through tolerance charting technique using Differential Evolution" , International Conference on Advances in Industrial Engineering Applications (ICAIEA), conducted by Anna University, Chennai, January 6-8,2010.
14. "Optimal Tolerance Design of Piston With Thermal Barrier Coating Using Differential Evolution And FEM Simulation" , International Conference on Advances in Industrial Engineering Applications (ICAIEA), conducted by Anna University, Chennai, January 6-8, 2010.
15. "Integration of Thermo Mechanical Strains into Optimal Tolerance Design of Mechanical Assembly using NSGA II and FE Simulation", International Conference on Advances in Industrial Engineering Applications (ICAIEA), conducted by Anna University, Chennai, January 6-8, 2010.
16. "Optimum allocation of Tolerance through tolerance charting technique", International Convention cum Pre-Conference Workshop on "Innovations in Engineering and Technology for Sustainable Development", conducted by Bannari Amman Institute of Technology, Sathyamangalam, September 3-5, 2012.

17. "Optimal Tolerance Allocation through Tolerance Chain Identification System", International Conference on Emerging Trends in Mechanical & Industrial Engineering, conducted by ITM University, New Delhi, 18th July 2015.

18. "Prediction of Kerf Width Using Artificial Intelligence During CO2 LASER Cutting of Mild Steel" International Conference on Newer Engineering Concepts and Technology-2k18 (ICONNECT2K18), conducted by K.Ramakrishnan college of Technology, Trichy, (23rd & 24th March 2018).

19. "Application of Grey Relational Analysis for Optimization of Kerf Quality during CO2 LASER Cutting of Mild Steel" 8th International Conference on Material Processing and Characterization (ICMPC-2018), conducted by Gokaraju Rangaraju Institute of Engineering and Technology (GRIET), Hyderabad in collaboration with Maulana Azad National Institute of Technology (MANIT), Bhopal (16th & 18th March 2018).

### National Conferences

1. "Optimal Robot Trajectory Planning Using Genetic Algorithm"- AMARA 2005, has been presented in National Conference on Advances in Manufacturing and Resource Analysis, PSNA College of Engineering, Dindigul. (FEBRUARY 18 & 19)

2. "Minimum Time Trajectory Planning For Robotic Manipulators Using Genetic Algorithm"- LTME 2005, has been presented in National Conference on Latest Trends in Mechanical Engineering, Dr.Mahalingam College of Engineering, Pollachi (APRIL 1&2)

3. "Time Optimal Trajectory Planning For Robotic Manipulators Using Genetic Algorithm"- GETME 2005, has been presented in National Conference on Globally Competitive Eco- Friendly Technologies in Mechanical and Mechatronics Engineering, Kongu College of Engineering, Perundurai, Erode. (APRIL 15&16).

4. "A Simple Genetic Algorithm (GA) Based Tolerance Allocation through Tolerance Charting Technique"-POM-2007 UGC Sponsored National Conference on Recent Developments in Production & Operations Management (March 23&24).

5. "A Differential Evolution (DE) Based Tolerance Allocation Through Tolerance Charting Technique"- ETIMES 2007, National Conference on Emerging Trends in Mechanical Engineering & Sciences, Bannari Amman Institute of Technology, Erode. (December 19&20)

6. "Minimum Cost Tolerance allocation through tolerance charting technique using a non- conventional optimization technique namely GA" National Conference - OPTTEST 2009, conducted by Bannari Amman Institute of Technology, Sathyamangalam, Erode, March 27-28, 2009.

7. "Optimal Tolerance design by integrating CAD, Finite element analysis and Non- Dominated sorting genetic algorithm II" National Conference on Advanced Manufacturing Techniques (NCAMT – 2009) conducted by Shri Mata Vaishno Devi University, Katra, Jammu & Kashmir.

8. "A Comparative Approach on Replacement of Carbon Steel on Power Piping by Nickel Based Alloy" National Conference on Ideas and Innovations in Mechanical Engineering (NCIIME), TRP Engineering College, Irungalur, Trichy, (April 1 & 2, 2016)

9. "Optimization of Machining Process Parameters in Abrasive Water Jet Machining" National Conference on Ideas and Innovations in Mechanical Engineering (NCIIME), TRP Engineering College, Irungalur, Trichy, (April 1 & 2, 2016).

10. "Optimization of Machining Process Parameters in Plasma Arc Machining" National Conference on Ideas and Innovations in Mechanical Engineering (NCIIME), TRP Engineering College, Irungalur, Trichy, (April 1 & 2, 2016),

11. "Performance Analysis of VCR System Using Hydrocarbon Refrigerants" has been presented in CSIR Sponsored National Conference on Smart Energy Systems for Sustainable Development (NCSES2017), VIT Chennai. (March 3 & 4, 2017).

12. "Thermal Analysis of Solar Energy Storage System Using Phase Change Material With Metal Nano Particles" has been presented in CSIR Sponsored National Conference on Smart Energy Systems for Sustainable Development (NCSES2017), VIT Chennai. (March 3 & 4, 2017)