

BIODATA

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131 CLT&RI, staff Quarters, Chengalpattu- 603001, Tamilnadu.

QUALIFICATION:

Degree/Examination	Board/Institute	Year	Percentage/ CGPA
Ph.D. (Thermal Sciences)	NITK, Suruthkal	2019	7.0
M.des (System Design.)	IITD&M, Kancheepuram	2014	7.6
B.E. (Mechanical Engg)	Anna University , Tiruchy	2012	7.1
HSLC	Tamilnadu state board	2008	90%
SSLC	Tamilnadu state board	2006	94%

PROJECT EXPERIENCE:

Sr. no	Name of the company	Project section	From	To
1	Ford India Ltd, Chennai	Body Shop	Jun, 2010	Jul, 2010
2	Winergy India Ltd, Chennai	Gear Transmission	Oct, 2010	Nov, 2010
3	Chennai Port Trust, Chennai	Engine Shop	Nov, 2010	Dec, 2010
4	Hyundai Motor India, Chennai	Aluminium Foundry	Feb, 2012	Apr, 2012

ACHIEVEMENTS:

1. District topper in SSLC science examination 2006.
2. Recipient of BARC golden jubilee science symposium award, Kalpakkam 2006
3. Product of the year, appeared in the institute year book, IITDM, 2012.

RESERCH PUBLICATIONS

International Journals

1. **Narendran, G.**, K. Ramachandran, and Naveen Kumar. "An inline sensing of coolant temperature inside a micro-channel for applications in ultra-dense packed high power electronics." *Optik-International Journal for Light and Electron Optics* 127, no. 2 (2016): 871-875. <https://doi.org/10.1016/j.ijleo.2015.10.183> (SCI)
2. **Narendran, G.**, Mithilesh M. Bhat, L. Akshay, and D. Arumuga Perumal. "Experimental analysis on exergy studies of flow through a minichannel using TiO₂/Water nanofluid." *Thermal Science and Engineering Progress* 8 (2018): 93-104. <https://doi.org/10.1016/j.tsep.2018.08.007>
3. **Narendran, G.**, Nagarajan Gnanasekaran, and Dharmaraj A. Perumal. "A Review on Recent Advances in Microchannel Heat Sink Configurations." *Recent Patents on Mechanical Engineering* 11, no. 3 (2018): 190-215.
4. **Narendran, G.**, N. Gnanasekaran, D. Arumuga Perumal. (2019) Experimental Investigation on heat spreader integrated microchannel using GO nanofluid, *Heat transfer engineering*, Taylor & Francis. <https://www.tandfonline.com/doi/full/10.1080/01457632.2019.1637136>. (SCI)
5. **Narendran, G.**, N. Gnanasekaran, D. Arumuga Perumal. (2019) Thermodynamic irreversibility and conjugate effects of integrated microchannel cooling device using TiO₂ nanofluid. *Heat and Mass Transfer*, Springer. <https://link.springer.com/article/10.1007/s00231-019-02704-z> (SCI)

Book chapter

1. Kumar, Amit, **Narendran, G.**, and D. Arumuga Perumal. "Numerical Study of TiO₂ Nanofluid in Multistage-Bifurcated Microchannel Subjected to Hotspots." In *Advances in Fluid and Thermal Engineering*, pp. 793-801. Springer, Singapore, 2019.

International conferences

1. **Narendran, G.**, N. Gnanasekaran, D. Arumuga Perumal. (2017) Numerical analysis of graphene nanofluid in microscale heat sink combined with heat spreader – a holistic approach for effective packaging, ASCHT 2017, IIT Madras, India.
2. Hegde, Shreyas, **Narendran, G** and N. Ganasekaran. "Conjugate heat transfer studies in a hexagonal micro channel." *Procedia Engineering* 127 (2015): 719-726.
3. **Narendran, G.**, N. Gnanasekaran, D. Arumuga Perumal. (2018) ,Flow induced hotspot migration studies with heat spreader integrated microchannels using reduced graphene oxide nanofluid, IEEE packaging society, EuroSimE, 2018, Toulouse, France, April 24- 27.
4. **Narendran, G.**, N. Gnanasekaran, D. Arumuga Perumal (2019), Migration of flow induced hotspot with heat spreader integrated microchannel subjected to asymmetric heat flux: A multiphysics approach, IEEE packaging society, EuroSimE, 2019, Hannover, Germany, March 24-27.
5. **Narendran, G.**, N. Gnanasekaran, D. Arumuga Perumal (2019), Hydrodynamic performance of GO nanofluid in heat spreader integrated microchannel, ICTEA 2019, Gandhinagar, Gujarat, Feb, 23-26.
6. Hegde, Shreyas S., **Narendran, G**, and N. Gnanasekaran. "Conjugate heat transfer in a Hexagonal micro channel using hybrid nano fluids." In *ASME 2016 14th International Conference on Nanochannels, Microchannels, and Minichannel* collocated with the ASME 2016 Heat Transfer Summer Conference and the ASME 2016 Fluids Engineering Division Summer Meeting, pp. V001T12A001-V001T12A001. American Society of Mechanical Engineers, 2016.

7. Kumar, Amit, **Narendran, G** and D. Arumuga Perumal. "Entropy generation study of TiO₂ nanofluid in microchannel heat sink for Electronic cooling application." In IOP Conference Series: Materials Science and Engineering, vol. 376, no. 1, p. 012013. IOP Publishing, 2018.
8. **Narendran, G.**, Gnanasekaran, N., Arumuga Perumal, D. Experimental and numerical investigation on conjugate effects in deep parallel microchannel using TiO₂ nanofluid for electronic cooling, International Conference on Computational Methods for Thermal Problems Issue 223309, 2018, Pages 535-538
9. **Narendran, G.** Gnanasekaran, N, D. Arumuga Perumal, Computational study of mixed convection in a lid-driven cavity with square block subjected to constant heat flux, IES, Kumamoto University, Japan, March, 2017.
10. **Narendran, G.**, Kumar, A., Gnanasekaran, N., Arumuga Perumal, D, Numerical simulation of micro gap based focal brain cooling bio implants for treatment of epilepsy, International Conference on Computational Methods for Thermal Problems Issue 223309, 2018, Pages 155-158.
11. Kumar, A., **G. Narendran**, Gnanasekaran, N., Arumuga Perumal, D, A computational study on focal cerebral cooling bio implant to suppress unprovoked seizures, Dec, 10-12, 2018, IIT Bombay, Mumbai, India

National conferences

1. **Narendran, G.**, N. Gnanasekaran, D. Arumuga Perumal, (2016) A review on fluid flow and heat transfer characteristics of microchannel heat sink, ICDMS 2016, Saveetha University, Feb-2016.
2. Hegde, Shreyas S., **Narendran, G**, and N. Gnanasekaran (2017), Investigation of heat transfer performance in a fractal tree microchannel under the influence of magnetic field, FMFP -2017, MNNITA, Dec-15,17, Allahabad, India.
3. Akil HG, Alraz Kulai, **Narendran G**, N Gnanasekaran, Numerical study of solar water heater with modified absorber plate having circular tubes fitted with twisted type insets, FMFP -2017, MNNITA, Dec-15,17, Allahabad, India.

PATENT

- **Apparatus for Temperature Sensing in High Pressure Nano Fluids Using Inline MMZI Optic Fiber (4605/CHE/2014)**

ABSTRACT: A MMZI (Microfiber Mach-Zehnder Interferometer) optical fiber based temperature sensing in Micro/Mini channels is developed with a very large interference region in an inline fiber. In particular present invention it includes implementation of MMZI fiber to sense the temperature of channels through which copper Nano fluids is pumped at high pressure for the high rate of heat transfer. The sensing section of the fiber is contained in a mini channel which has a very low aspect ratio. The temperature of the channel is controlled by using the circular spiral band heaters. The fiber is exposed directly inside the channel to interact with the Liquid and the respective temperature is monitored. The corresponding change in temperature of the channel is responded by the shift in the spectrum by using OSA (Optical Spectrum Analyzer)

TECHINICAL SKILLS:

- **Programming Language:** c,c++,Mat lab
- **Software Packages:** Autocad, PRO-E, Solid works, Catia, Autodesk Inventor
- **Operating systems:** comfortable with both Linux and windows platform
- **Simulation Tools:** Autodesk Simulation.

AREA OF INTREST:

- Thermal system design, Microchannels
- Focal brain cooling, bio implants, Metal 3D printing for electronic cooling
- Microfluidics, interfacial phenomenon, lab on chip, organ on chip

Activities and Hobbies

- Participated in NSS volunteer during my Graduation period.
- Actively participated in cultural activities at school and collages
- Reading books, drawing

DECLERATION:

I hear by declare that the above written particulars are true to the best of my knowledge and belief.

DATE:

19.09.19

PLACE: NITK

G. Narendran

(G.NARENDRAN)