

1. Name : Dr. Hemantkumar B. Mehta  
 Correspondence : Associate Professor  
 Address : Department of Mechanical Engineering,  
 S. V. National Institute of Technology,  
 (An Institute of National Importance of Govt. of India),  
 Surat-7, Gujarat, India.
2. Emails : [hbm@med.svnit.ac.in](mailto:hbm@med.svnit.ac.in);  
[hemantbmehta@gmail.com](mailto:hemantbmehta@gmail.com);  
 Contact Numbers : (M) : +91-9924999778; +91-8849931589  
 (O) : +91-261-2201572  
 (H) : +91-261-2201603
3. Date of Birth : 07/01/1977
4. Gender : Male
5. Research Area : Heat Transfer, Two-Phase Flow through microscale channels, Taylor Bubble Flow, Pulsating Heat Pipe, Microchannel Heat Sink (MCHS), Nanofluids, NE/ME PCM slurry.

6. Academic Qualification (Undergraduate onwards)

Degree	Year	Subject	University/Institution	%of Marks
B.E.	1998	Mechanical Engineering	SVRCET, Surat	69.33% (Distinction)
M.Tech.	2006	Mechanical Engineering	SVNIT, Surat	9.33/10 CGPA
PhD	2015	Mechanical Engineering	SVNIT, Surat	Course Work 9.67/10 CGPA

7. PhD Thesis Title : Experimental Investigations on Air-Water Two-Phase Flow through a Minichannel

M.Tech. Dissertation Title : Coupled Conduction-Radiation Heat Transfer in Absorbing, Emitting and Scattering Participating Media using Finite Volume and Discrete Ordinates Methods.

8. Professional Experience:
1. Industrial: 02 years and 10 months
  2. Academic: More than 14 years (Continue)

Name of Employer & Place	Designation of post held	Nature of work	Period		
			From	To	Years-Months-Days
<b>INDUSTRIAL EXPERIENCE (02 Years and 10 Months)</b>					
Airon Corporation, Vadodara	Maintenance Incharge	Operation and maintenance	July-1998 to February-1999		00-07-00
GSFC, Kosamba	G.E.T.	Training of different utilities	March-1999 to March-2000		01-00-00
Airon Corporation, Vadodara	Maintenance Incharge	Operation and maintenance	April-2000 to July-2001		01-03-00
<b>TEACHING EXPERIENCE (More than 15 years)</b>					
C. K. Pithawala College of Engg. & Tech., Surat	Adhoc Lecturer	Technical Teaching	August-2001 to June-2003		01-10-00
C. K. Pithawala College of Engg. & Tech., Surat	Permanent Lecturer	Technical Teaching	09-07-2003 to 04-10-2007		04-02-25
S. V. National Institute of Technology, Surat	Assistant Professor	Technical Teaching and Research	05-10-2007 to 27-01-2019		11-03-22
S. V. National Institute of Technology, Surat	Associate Professor	Technical Teaching and Research	28-01-2019 to till date		-----

9. Professional Recognition/ Award/ Prize/ Certificate, Fellowship received by the applicant.

Sr. No.	Name of award	Awarding agency	Number	Year
1.	I am appointed as a <b><i>fiend supervisor</i></b> for Mr. Master Student Mr. Muhammad Zufar Bin Ahmad Faudji, Universiti Tenaga Nasional (UNITEN), The National Energy University, Malaysia for the period of 3 years (2017-2020).			
2.	Awarded IASTEM <b><i>Excellent Paper Award</i></b> for the category Best Presentation/ Best Content at the IASTEM International Conference held in Cape Town, South Africa during 24 <sup>th</sup> to 25 <sup>th</sup> December, 2018.			

3.	<b>Reviewer</b> for International Journal of Heat and Mass Transfer	Elsevier Publication	01	2018
4.	<b>Reviewer</b> for 44 <sup>th</sup> National Conference on Fluid Mechanics and Fluid Power	FMFP-2017	02	2017
5.	<b>Reviewer</b> for International Journal of Heat and Mass Transfer	Elsevier Publication	01	2017
6.	<b>Reviewer</b> for Journal of Mechanical Science and Technology (JMST)	Springer Publication and KSME	02	2017
7.	<b>Reviewer</b> for 6 <sup>th</sup> International and 43 <sup>th</sup> National Conference on Fluid Mechanics and Fluid Power	FMFP-2016	06	2016
8.	<b>Reviewer</b> for project proposal under Early Career Research Award scheme and Extra Mural Research Funding scheme	Science and Engineering Research Board (SERB), Department of Science and Technology (DST), Government of India	02	2015
9.	<b>Reviewer</b> for International journal of Experimental Thermal and Fluid Science (ETFS)	Elsevier Publication	03	2015, 2017
10.	<b>Reviewer</b> for International journal of Sadhana - Academy Proceedings in Engineering Science	Springer Publication	02	2015, 2017
11.	<b>Reviewer</b> for International Conference on Applied Energy (ICAE2015)	ICAE-2015	01	2015
12.	<b>Reviewer</b> for International Conference paper	ASME India	02	2015
13.	<b>Reviewer</b> for ASME 2014, 4 <sup>th</sup> joint US-European Fluids Engineering Division summer meeting and 12 <sup>th</sup> International Conference on Nanochannels, Microchannels and Minichannels	ASME Conferences	02	2014
14.	<b>Session Chair</b> for International Conference on Mechanical Engineering (ICME2009), London, UK during 1-3 July, 2009	International Association of Engineers (IAENG), World Congress on Engineering, London, UK	--	2009
15.	<i>Graduate Aptitude Test for Engineering (GATE)</i> exam qualified in Mechanical Engineering with 88.72 percentile and obtained All India Rank (AIR) 2740 in 2004.			

10. Publications (*List of papers published in SCI Journals, in year wise descending order*).

**International Journals: 14**

Sr. No.	Author(s)	Title	Name of Journal	Volume	Page	Year
1.	H. B. Mehta, Vipul Patel	Experimental Investigations on the Effect of Influencing Parameters on Operating Regime of a Closed Loop Pulsating Heat Pipe	Journal of Enhanced Heat Transfer	Accepted		
2.	H. B. Mehta, Vipul Patel	Thermal Performance Prediction Models for a Pulsating Heat Pipe using Artificial Neural Network (ANN) and Regression/Correlation Analysis (RCA)	Sadhana	43 (11)	-----	2018
3.	H. B. Mehta and Sagar Kalpak	Experimental Investigations on Heat Transfer Characteristics of Pulsating Single Phase Liquid Flow and Two-Phase Taylor Bubble Flow through a Minichannel	Sadhana	42 (47)	-----	2018
4.	H. B. Mehta, Vipul Patel and Gaurav	Influence of Working Fluids on Startup mechanism and Thermal Performance of a Closed Loop Pulsating Heat Pipe	Applied Thermal Engineering	110	1568-1577	2017
5.	H. B. Mehta and Sourabh Yadav	Experimental Investigations on Air-Water Two-Phase Flow through a Minichannel U-bend	Experimental Thermal and Fluid Science	78	182-198	2016
6.	H. B. Mehta Vipul Patel	Artificial Neural Network Modeling of a Closed Loop Pulsating Heat Pipe	International Journal of Mechanical, Aerospace, Industrial, Mechatronic and Manufacturing Engineering	10(10)	1754-1757	2016
7.	H. B. Mehta Vipul	Prediction of Two-Phase frictional pressure drop using	International Journal of Mechanical,	10(1)	210-213	2016

	Patel, and J. Banerjee	ANN	Aerospace, Industrial, Mechatronic and Manufacturing Engineering			
8.	H. B. Mehta and Vipul Patel	Influence of Gravity on the Performance of Closed Loop Pulsating Heat Pipe	International Journal of Mechanical, Aerospace, Industrial, Mechatronic and Manufacturing Engineering	10(1)	219-223	2016
9.	H. B. Mehta and J. Banerjee	Experimental Investigations on Thermo-Hydrodynamics of Continuous Taylor Bubble Train Flow through Minichannel	International Journal of Heat and Mass Transfer	94	119-137	2015
10.	H. B. Mehta, Harshal Gamit, Vinayak More, Bade Mukund	Experimental investigations on pulsating heat pipe	Energy Procedia	75	3186 – 3191	2015
11.	H. B. Mehta and J. Banerjee	Influence Of Inlet Premixing On Two-Phase Flow Patterns in Horizontal Minichannel	Heat Transfer Engineering	36(6)	1-11	2014
12.	H. B. Mehta and J. Banerjee	Air-Water Two-Phase Flow in Minichannel: Effect of Flow Orientation	Heat and Mass Transfer	50(10)	1353-1364	2014
13.	H. B. Mehta and J. Banerjee	Empirical Modelling and Experimental Investigations on Isothermal Air-Water Two-Phase Flow through Circular Minichannel	Journal of Applied Fluid Mechanics (JAFM)	7(2)	227-237	2014
14.	H. B. Mehta and J. Banerjee	Isothermal Air-Water Two-Phase Flow through Vertical Minichannel	International Journal of Engineering Sciences	2(1)	16-19	2013

**International Conferences: 28**

<b>Sr. No.</b>	<b>Name of Conference</b>	<b>Month/Year</b>	<b>Venue</b>	<b>Title</b>
1.	157 <sup>th</sup> IASTEM International Conference	(IASTEM2018) December 24-25, 2018	Cape Town, South Africa	Thermal Modelling and Numerical Investigations on a Double Layered Microchannel Heatsink
2.	7 <sup>th</sup> International and 45 <sup>th</sup> National Fluid Mechanics and Fluid Power Conference	(FMFP 2018) December 10-12, 2018	IIT Bombay, India	Insight of a Pulsating Heat Pipe at Steady High Heat Flux
3.	19 <sup>th</sup> International Heat Pipe Conference and 13 <sup>th</sup> International Heat Pipe Symposium	(Joint IHPC-IHPS 2018) June 10-14, 2018	Pisa (Italy)	Effect of Water-Based CuO nanofluid on Startup Mechanism and Thermal Performance of a Closed Loop Pulsating Heat Pipe
4.	24 <sup>th</sup> National and 2 <sup>nd</sup> International ISHMT-ASTFE Heat and Mass Transfer Conference	(IHMTTC-2017) December 27-30, 2017	BITS Pilani, Hyderabad campus, India	Experimental Investigations on the Effect of Influencing Parameters on Operating Regime of Closed Loop Pulsating Heat Pipe
5.	18 <sup>th</sup> International Conference on Fluid Mechanics and Thermodynamics	(ICFMT2016) October 10-11, 2016	New York, USA	Artificial Neural Network Modeling of a Closed Loop Pulsating Heat Pipe
6.	18 <sup>th</sup> International Conference on Fluid Mechanics and Thermal Engineering	(ICFMTE2016) January 12-13, 2016	Zurich, Switzerland	Influence of gravity on the performance of the closed loop pulsating heat pipe
7.	18 <sup>th</sup> International Conference on Experimental Fluid Science	(ICEFS2016) January 12-13, 2016	Paris, France	Prediction of Air-Water Two Phase Frictional Pressure Drop Using Artificial Neural Network
8.	7 <sup>th</sup> International Conference on Applied Energy	(ICAE2015) March 28-31, 2015	Abu Dhabi, United Arab Emirates	Experimental investigations on pulsating heat pipe
9.	19 <sup>th</sup> Annual cum 4 <sup>th</sup> International Conference	October 3-6, 2014	SVNIT, Surat	Pressure Driven Slip Flow between Parallel Plates

	Gwalior Academy of Mathematical Sciences (GAMS) on "Advances in Mathematical Modeling to Real World Problems"			
10.	5 <sup>th</sup> International and 41 <sup>st</sup> National Conference on Fluid Mechanics and Fluid Power	(FMFP2014) December 12-14, 2014	Indian Institute of Technology (IIT), Kanpur	Experimental Investigation on Two-Phase Flow through Minichannel
11.	ASME 2014 12th International Conference on Nanochannels, Microchannels, and Minichannels	(ICNMM2014) August 03-07, 2014	Chicago, Illinois	Experimental Investigation Of Degree Of Premixing On Isothermal Air-Water Two-Phase Flow Through Minichannel
12.	ASME 2014 12th International Conference on Nanochannels, Microchannels, and Minichannels	(ICNMM2014) August 03-07, 2014	Chicago, Illinois	Investigation on Air-Water Two-Phase Flow in Downward Minichannel
13.	ASME 2014 12th International Conference on Nanochannels, Microchannels, and Minichannels	(ICNMM2014) August 03-07, 2014	Chicago, Illinois	Review on Two-Phase Frictional Pressure Drop in Microscale Channels
14.	International Conference on Advances in Engineering and Technology	(ICAET2013) May 15-17, 2013	Lonavala, Pune, India	Isothermal Air-Water Two-Phase Flow through Vertical Minichannel
15.	39th National Conference on Fluid Mechanics and Fluid Power	(NCFMFP2012) December 13-15, 2012	S. V. National Institute of Technology, Surat	Numerical Simulation of Taylor Flow in Inverted Y-Junction Minichannel
16.	ASME 2011 9th International Conference on Nanochannels, Microchannels, and Minichannels	(ICNMM2011) June 19-22, 2011	Edmonton, Alberta, Canada	CFD Analysis on Taylor Slug Flow Through 3D Vertical Mini-Channel
17.	37th National and 4th International conference on Fluid Mechanics and Fluid Power TF-06, ISBN: 978-81-910571-1-9	(FMFP2010) December 16-18, 2010	Indian Institute of Technology, Madras, Chennai,	CFD Analysis Of The Taylor Slug Flow In A Microchannel Under Microgravity Condition Using VOF Method

18.	37th National and 4th International conference on Fluid Mechanics and Fluid Power TF-06, ISBN: 978-81-910571-1-9	(FMFP2010) December 16-18, 2010	Indian Institute of Technology, Madras, Chennai,	A Numerical Investigation on Premixed Micro-combustion of CH <sub>4</sub> -Air Mixture
19..	The 11th Asian International Conference on Fluid Machinery and The 3rd Fluid Power Technology Exhibition	November 21-23, 2011	Indian Institute of Technology, Madras, Chennai,	Numerical Simulation Of Taylor Slug Flow In Horizontal Mini-Channel
20.	20 <sup>th</sup> National and 9 <sup>th</sup> International ISHMT-ASME Heat and Mass Transfer Conference	4-6 January, 2010	Indian Institute of Technology (IIT), Bombay	Investigation of Bulk Radiation on Natural Convection and Heat Transfer in a Partially Heated Side wall
21.	20 <sup>th</sup> National and 9 <sup>th</sup> International ISHMT-ASME Heat and Mass Transfer Conference	4-6 January, 2010	Indian Institute of Technology (IIT), Bombay	Power, efficiency, entropy generation rate and ecological optimization of an irreversible Otto cycle
22.	20 <sup>th</sup> National and 9 <sup>th</sup> International ISHMT-ASME Heat and Mass Transfer Conference	4-6 January, 2010	Indian Institute of Technology (IIT), Bombay	Analysis of the Irreversible Reciprocating Heat Engines using Finite Time Thermodynamics
23.	International Conference on Advances in Mechanical Engineering	(ICAME-2009) 3-5 August, 2009	SVNIT, Surat, Gujarat	Effect of Heat Transfer on the Performance of an Air-Standard Diesel Cycle
24.	International Conference on Mechanical Engineering	(ICME-2009) 1-3 July, 2009	IAENG Conferences – WCE 2009, London, U. K.	Performance Analysis of an Irreversible Otto Cycle using Finite Time Thermodynamics
25.	International Conference on Advances in Mechanical Engineering	(ICAME-2008) 15-17 December, 2008	SVNIT, Surat, Gujarat	Transient Conduction and Radiation Heat Transfer Analysis in Participating Media using Discrete Ordinates Method
26.	International Conference on Emerging Trends in Engineering & Technology	(ICETET-2008) 16-18 July, 2008	G.S.Raisoni College of Engineering and Technology,	Investigation of Boundary Conditions on the Conduction Radiation Heat Transfer Analysis in



			Nagpur, M.S.	Participating Media
27.	IISc Centenary International Conference on Advances in Mechanical Engineering	(IC-ICAME-2008) 2-4 July, 2008	Indian Institute of Science (IISc), Bangalore	Numerical Simulation of Conduction-Radiation Heat Transfer Analysis in Participating Media with Linearly Heated Walls
28.	International Conference on Aerospace Science and Technology	(INCAST) 26-28 June, 2008	National Aerospace Laboratories (CSIR), Bangalore	Effect of Temperature Dependant Thermal Conductivity on 2-D Transient Coupled Conduction-Radiation Heat Transfer using Non-uniform Heating
29.	International Conference on Emerging Technologies and Applications in Engineering, Technology and Science	(ICETAETS-2008) 13-14 January, 2008	Saurashtra University, Rajkot, Gujarat	Coupled Conduction-Radiation Heat Transfer Analysis in Participating Media using Discrete Ordinates Method

#### National Conferences: 15

Sr. No.	Name of Conference	Month/Year	Venue	Title
1.	Advances in Mechanical Engineering (AIME-2004)	23 <sup>rd</sup> and 24 <sup>th</sup> April 2004	JDIET, Yavatmal, Maharashtra	Development of Software for the Thermal Analysis of Aqua-ammonia Absorption Refrigeration System
2.	Recent Trends in Mechanical Engineering (RTIME-2004)	23 <sup>rd</sup> and 24 <sup>th</sup> July 2004	SRESCOE, Kopargaon	Software to Carry out Parametric Study of the Aqua-ammonia Absorption Refrigeration System
3.	Recent Trends in Mechanical Engineering (RTIME-2004)	23 <sup>rd</sup> and 24 <sup>th</sup> July 2004	SRESCOE, Kopargaon	Comparison of Methods for Predictions of Shell side Heat Transfer Co-efficient of Shell and Tube Heat Exchanger
4.	Recent Trends in Mechanical	23 <sup>rd</sup> and 24 <sup>th</sup> July 2004	SRESCOE, Kopargaon	Design of Stiffener Plate for Radial

	Engineering (RTIME-2004)			Nozzle on Hemispherical Head of Pressure Vessel Using FEM
5.	Recent Trends in Mechanical Engineering (RTME-2006)	17 <sup>th</sup> and 18 <sup>th</sup> November 2006	SJCE, Mysore	Comparative Parametric Study of Horizontal and Tilted Evacuated Tubular Solar Collector
6.	Recent Trends in Mechanical Engineering (RTME-2006)	17 <sup>th</sup> and 18 <sup>th</sup> November 2006	SJCE, Mysore	Development of Software for the Thermal Analysis of Single Effect LiBr <sub>2</sub> -H <sub>2</sub> O Vapour Absorption Refrigeration System
7.	Indian Institute of Chemical Engineers (CHEMCON-2006)	27-30 December 2006	Ankleshwar, GNFC, Gujarat	Analysis of Coupled Conductive-Radiative Heat Transfer in Presence of plane parallel Participating Media
8.	Emerging Trends in Mechanical Engineering (ETME-2007)		S. V. National Institute of Technology (SVNIT), Surat, Gujarat.	Computer aided design of solar chimney to generate electricity employing a convergent nozzle
9.	Emerging Trends in Mechanical Engineering (ETME-2007)		S. V. National Institute of Technology (SVNIT), Surat, Gujarat.	Discrete ordinates solution of radiative transport equation in absorbing, emitting, and scattering participating media
10.	National Conference on Thermal Fluid Science and Tribology Applications (TFSTA-2016)	27-28 May, 2016	S. V. National Institute of Technology (SVNIT), Surat, Gujarat.	Optimization of Liquid Cooled Minichannel Heat Sink
11.	National Conference on Thermal Fluid Science and Tribology Applications (TFSTA-2016)	27-28 May, 2016	S. V. National Institute of Technology (SVNIT), Surat, Gujarat.	Start-up Mechanism of Pulsating Heat Pipe
12.	National Conference on Thermal Fluid Science and Tribology Applications (TFSTA-2016)	27-28 May, 2016	S. V. National Institute of Technology (SVNIT), Surat, Gujarat.	Influence of Imposed pulsation on Axial Back Conduction for Laminar Flow through a circular Minichannel
13.	National Conference	27-28 May,	S. V. National	CFD Analysis of 2D

	on Thermal Fluid Science and Tribology Applications (TFSTA-2016)	2016	Institute of Technology (SVNIT), Surat, Gujarat.	Blade Profile of an Axial Flow Compressor using Axstream Software
14.	National Conference on Thermal Fluid Science and Tribology Applications (TFSTA-2016)	27-28 May, 2016	S. V. National Institute of Technology (SVNIT), Surat, Gujarat.	Experimental Investigations on Start-up behavior of CLPHP
15.	National Conference on “ Critical Heat Flux and Multiphase Flow”	December 22-23, 2018	IIT(BHU), Varanasi, India	A Review on Dry out Mechanism of Pulsating Heat Pipe

11. **Detail of patents.** : **02**

1. **Design Registration:**

The present design of a VWC DL-MCHS is applied for the registration to the controller general of Patent, Designs and Trademarks, Intellectual Property office, Kolkata, India with Application No. 303545 entitled as “Stacked Minichannel Heat Sink”.

2. **Complete Specification:**

The complete patent specification entitled “A liquid cooled Variable Channel Width Double Layered Minichannel Heat Sink (VWC DL-MCHS) with zero overlap” having Application No. 201821021270 is filed at the Indian Patent office, Mumbai, which is published in the patent journal No. 32/2018 dated 10th Aug 2018.

12. **Details of Sponsored Research Projects** : **02**

1. The research being carried out on ***Closed Loop Pulsating Heat Pipe*** is sponsored under Institute Research Grants, SVNIT, Surat vide office order no. Dean(R&C)/1503/2013-14. The research project amount is **Rs. 10 Lakh. (2014-2017-Completed)**
2. A research project titled ***Investigations on a novel stacked microchannel heat sink using efficient coolants*** from Science and Engineering Research Board (SERB), Department of Science and Technology (DST), India has been approved for funding of **Rs.**

24,47,500/- for the duration of three years. (Approval Letter bearing No. EMR/2017/000429 dated 07/08/2017). **(2017-2020 On-going)**

12. **Books/Reports/Chapters etc.** : **02**
1. Editor of the “Proceedings of the First National Conference on Thermal Fluid Science and Tribology Applications (TFSTA-2016)” S.V. National Institute of Technology, Surat, May 27-28, 2016 (ISBN: 978-93-5265-440-6).
  2. Book of abstracts for 39<sup>th</sup> National Conference on “Fluid Mechanics and Fluid Power (FMFP-2012)”, S.V. National Institute of Technology, Surat, 13-15 December 2012.
13. **Country visited (Outside World Interaction)** : **07**
- USA (New York, Washington DC, Buffalo, Chicago), UK (London), Canada (Edmonton), France (Paris), Switzerland (Zurich), Italy, South Africa (Johannesburg, Cape Town)
14. **Testing and Consulting Work** : **02**
3. Testing of 50 mm diameter B-class (Medium) GI pipe (Make: Jindal Steel) for re-carpeting/strengthening and extension of runway 22/04 at Surat Airport Project, Airport Authority of India. The testing amount was **Rs. 22,900/- (Completed)**
  4. Consultancy services for the study of heat exchangers at ESSAR Steel, Hazira, Surat. The consultancy charges are **Rs. 2,87,500/- (Completed)**
15. **Any other Information**
1. **Ph.D. Guided: 04 (on-going)**
  2. **M.Tech. Guided: 40 + 04 (on-going)**
  3. **Conference, Workshop and STTP organized/attended: 04/15**
  4. **Expert Lectures Delivered: 25 plus**
  5. Involved in various administrative duties such as warden and chief hostel warden for six years and member secretary of council of wardens for 03 years. Presently acts as lab in charges for Advanced Fluid Dynamics and Turbomachinery labs.

6. Departmental coordinators for consultancy, testing, research projects and patents. (2014-2017)
7. Departmental coordinator for expert and visiting lectures to be organized. (2014-2017)
8. Departmental Examination Coordinator (2017 to till date).



**Dr. Hemantkumar B. Mehta**