



Dr. Twinkle R. Singh

Ph.D.

Assistant Professor

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Teaching:

Engineering Mathematics I, II, III,

MM101 M.Sc I (I semester)

MM 513 Advanced Fluid Mechanics

Area of Research:

Fluid flow through Porous media, Non-linear partial differential equations, Burger's equation, Groundwater recharge phenomenon, Analytical approximate Methods, Mathematical Modeling

Research Project:

- (1) **Awarded for (MRP) Minor Research Project** entitled " Study on nonlinear partial differential equations arising in ground water recharge phenomena on fluid flow through porous media" **GUJARAT COUNCIL ON SCIENCE AND TECHNOLOGY.** (Ongoing)
- (2) **Awarded for (MRP) Minor Research Project** entitled " Study on Magneto hydrodynamic flows under different physical conditions" **GUJARAT COUNCIL ON SCIENCE AND TECHNOLOGY** (Ongoing)

Achievement:

- *Honor has been given to me as a First Ph.D. of SVNIT, SURAT-395007, GUJARAT*

- **Best paper award** in “**International scientific conference on Applied science and engineering**”, 21-22, Dec, 2014, Kuala Lumpur, Malaysia.
- **26-27 December 2018, research contribution, Scientific and Technical research association, Dubai**

M. Sc. dissertations under my supervision Completed **09** Ongoing **06**

Sr. No	Name of Student	Title of Dissertation	Year of Passing
1	Mihir Panchal (I08MA 023)	Study of Some Bio-mathematical models through ordinary differential equations and its Applications.	17-05-2013
2	Hemali V. Vansia (I08MA024)	A Study of Burger’s equation arising in Fluid Mechanics through Fourier Transform	20-06-2013
3	Harsh Bhatt (I10MA027)	Application of Directed Acyclic Graph in Distributed Version Control System	08-06-2015
4	Patel Charmiben Natavarbhai (I10MA034)	Study on partial differential equation arising in Traffic Flow Problems	08-06-2015
5	Pathak Bhumi D (I11MA005)	Study on Mathematical Modeling and its Applications	06/05/2016
6	Vishva Sapariya (I12MA042)	Study on Plant Invasion Model by Crank Nicolson Method	09/05/2017

Teaching Experience:

1	Assistant Professor	13, March, 2009 Till date going on	S.V. National Institute of Technology, Mathematics Section, Surat-395007.
2.	Teaching Assistant	January 2005 to December 2005 January 2006 to November 2006 January 2007 to December 2007 January 2008 to May 2008 July 2008 to 12 th March	S.V. National Institute of Technology, Mathematics Section, Surat-395007.
3	Visiting Lecturer+	January 2003 to November 2003 January 2004 to December 2004	S.V. National Institute of Technology, Mathematics Section, Surat-395007.
4	Ad-hoc Lecturer +	August 2002 to December 2002	S.V. National Institute of Technology, Mathematics Section, Surat-395007.

Ph. D students list complied/going on under my supervision

Ph.D. Completed 06 Submitted 00 Ongoing 03

Sr. No.	Name of Student	Thesis Title	Year of completion & Remark
1	Kinjal R. Patel	Solution of Non-linear problems arising in heterogeneous porous media.	She had got Best Research Paper Award in Research Meet conference held at M. S. University, Baroda on 23 rd January-2011. Ph.D. degree has been conferred on her on 27 October 2013
2	Nisha Vyas	Solution of different phenomenon arising in magnetohydrodynamics in fluid flow through porous media.	She has completed her Ph.D. viva on 31st May 2013 and degree has been conferred on her on 27 October 2013
3.	Kajal Patel	Approximate solution of non linear boundary value problems arising in fluid flow through porous media by Homotopy Analysis Method.	She has completed her Ph.D. viva on 27th January 2015.
4.	Shrikant Pathak	Approximate solution of some non linear problems arising in porous media by optimal homotopy analysis method.	He has completed his viva voce exam on 27th October 2017.
5.	Kunjan Shah	Approximate solution of some non-linear partial differential equations of porous media by modify homotopy analysis method and homotopy perturbation new integral transform method.	Completed on dated 10/09/ 2018

6.	Bhumika Choksi	Approximate analytical solution of non linear problems by Sumudu transform homotopy perturbation method and successive linearization method	She has completed her Ph.D. on 6th December 2018.
7	Mihir Panchal	To be decided	His four research progress seminar are completed.
8	Archna Varsoliwala	To be decided	Ongoing
9	Sheth Shruti	To be decided	Ongoing

Annexure 1: A Research Papers published in National Journals

Sr. No.	Title	Journal	DOI/ISSN/ISB N No.
1	A solution of the Burger's equation for longitudinal dispersion of miscible fluid flow through porous media, Vol.14, No.2 (December 2005), 49-54. (With M.N. Mehta)	Indian Journal of Petroleum geology,	ISSN: 09712542
2	A solution of Burger's equation type one dimensional groundwater recharge by spreading in porous media, Vol. 28 No.1 (2006), 25-32. (With M.N. Mehta)	The Journal of the Indian Academy of Mathematics	ISSN: 0970-5120
3	The classical solution of the Burger's equation arising into the one dimensional ground water recharge by spreading in porous media, Vol. 5 No.2 (2005), 453 – 458. (With M.N. Mehta)	Varahmihir Journal of Mathematical Sciences,	ISSN, 0972-7329
4	The solution of seepage of groundwater flow in a heterogeneous porous media by using shooting method approach, Vol. 36 (2006), 55-60.	J nanabha	ISSN 0304-9892
5	Simulation of an approximate solution of seepage of ground water in porous media on sloping bedrock, Vol. XXXIII M, No. 2 (2007), 445-451.	Acta Ciencia Indica	ISSN-0970-0455
6	A classical solution of the Burger's equation arising into the instability phenomenon in double phase flow through homogeneous porous media, (India), Vol. 25 E No.1, 2008. (With M.N. Mehta)	Bulletin of pure and applied sciences	ISSN: 2320-3226
7	A solution of the non-linear problem arising into the instability phenomena in double phase flow through homogenous porous media by using shooting method approach, Vol. XLII No. 4 December 2008. (To appear) (With M.N. Mehta)	Maths Edu.	
8	Special functions and solution of three phase flow through porous media, Vol. XXXI M, No. 4 (2005), 1237.	Acta Ciencia Indica	ISSN-0970-0455
9	The Classical Solution of the Burger's Equation Arising into the Irradiation of Tumor Tissue in Biological Diffusing System, V1 N1&2 2008 issue(accepted). (With M.N. Mehta)	GAMS Journal of Mathematics and Mathematical Biosciences (GAMSJMMB),	ISSN: 0974-2689
10	A Solution of the problem of seepage in Two layered soil with an inclined boundary, Vol. 1,1(2010), 108-110.	Journal of Sciences,	
11	The Classical Solution of Burger's Equation arises into The Fingering Phenomena in Fluid Flow through Homogeneous Porous Media, 2011; 1(2): 84-86, DOI: 10.5923/j.am.20110102.13. (With M.N. Mehta)	Applied Mathematics,	ISSN Online: 2152-7393
12	The Power series solution of fingering phenomenon arising in fluid flow through homogeneous porous media, ISSN:1932-9466 Vol, Issue 2 (Dec.2011),pp. 497-509. (With M.N. Mehta, Kinjal Patel)	Application and Applied Mathematics,	ISSN: 1932-9466

13	Power Series Solution of Fingero-imbibition Phenomenon of Double Phase Flow through Homogeneous Porous Media, 7 (8) (2011), 65-77. (With M.N. Mehta, Kinjal Patel)	IJAMM	ISSN: 0973-0184
14	The power series solution of boussinesq's equation arises in incompressible fluid flow infiltration, Vol. 3 (II) (2011): 30-42. (With M.N. Mehta, Kinjal Patel)	Journal of GAMS	ISSN: 0974-2689
15	A solution of non-linear problem arises into the two immiscible phase flow in porous media using shooting method approach, Vol. XXXII M, No. 2 (2006), 895.	Acta Ciencia Indica	ISSN-0970-0455
16	A Note on Water Transport Phenomenon by Homotopy Analysis Method, Volume 4, Issue 6 (Jan.- Feb. 2013), PP 50-53, www.iosrjournals.org , Impact factor: 1.312	IOSR Journal of Mathematics (IOSR-JM)	ISSN:2278-5728.
17	An analysis on groundwater recharge by mathematical model in inclined porous media, International Scholarly Research Notices, (2014) (With S. Pathak) http://downloads.hindawi.com/journals/isrn/aip/189369.pdf	Hindawi Publishing Corporation	
18	Application of Homotopy Analysis Method in one dimensional Instability Phenomenon Arising in Inclined Porous Media, 2014, Vol. 2, No. 3, 106-114, Available online at http://pubs.sciepub.com/ajams/2/3/4 , © Science and Education Publishing, DOI:10.12691/ajams-2-3-4 (With Kajal patel)	American Journal of Applied Mathematics and Statistics,	ISSN (Online): 2328-7292
19	A Solution of Boussinesq's equation for infiltration phenomenon in unsaturated porous media by Homotopy Analysis Method, International organization of Scientific Research, Vol. 04, Issue 02 (February. 2014), V3 PP 01-08 (With M.N. Mehta, Kajal Patel)	IOSR Journal of Engineering (IOSRJEN)	ISSN (e): 2250-3021, ISSN (p): 2278-8719
20	Solution of Burger's equation in a one-dimensional groundwater recharge by spreading using q-homotopy analysis method, Vol. 9, No. 1, 114-124, 2016. (With Kunjan shah)	European Journal of Pure and Applied Mathematics	
21	An Approximate Solution of θ -based Richards' Equation by Combination of New Integral Transform and Homotopy Perturbation Method, Vol. 36(1), 85-100, 2017. (With Kumjan Shah)	Journal of Nigerian Mathematical Society	
22	A MATHEMATICAL MODEL OF IMBIBITION PHENOMENON IN HOMOGENEOUS POROUS MEDIA Bhumika G. Choksi, Twinkle R. Singh	Special Topics & Reviews in Porous Media: An International Journal	SJR: 0.376 SNIP: 0.466 CiteScore™: 0.83 ISSN Print: 2151-4798 ISSN Online: 2151-562X Volume 10. Issue 01

Annexure 1: B Research Papers published in International Journals

Sr. No.	Title	Journal	DOI/ISSN/IS BN No.
1	A classical solution of the Burger's equation arising into the Imbibition Phenomenon in double phase flow through homogeneous porous media, Vol. 18(2) M, (2006), 255 – 260 (With M N Mehta)	International Journal of Physical Sciences Ultra Scientist of Physical Sciences,	
2	A Solution of the burger's equation of the fingero-imbibition phenomenon in double phase flow through porous media, Volume 15, No.2, November 2008, 93-98. (With M N Mehta)	International Journal of Applied Science and Computation	
3	A solution of the burger's equation arising into the instability phenomenon in fluid flow through porous media, , ISSN 0973-4562, Volume 5 Number 1 (2010), 47-54 (With M N Mehta)	International Journal of Applied Engineering Research	
4	The Numerical Solution of Burger's equation arising into the Irradiation of Tumour Tissue in Biological Diffusing System by Homotopy Analysis Method, 2012, (With M N Mehta, V H Pradhan)	Asian Journal of Applied Sciences,	ISSN 1996 3343/DOI:10.3923/ajaps.2012©2012 knowledgia, Review, Malaysia
5	A series solution of moisture content in vertical groundwater flow through unsaturated heterogeneous porous media, (2011) (Accepted)	International Journal of Mathematics and Engineering,	
6	A Solution of Longitudinal dispersion of miscible fluid flow through porous media by Bender-Schmidt method, 24(1) A (2012), , 63-66.	Ultra Scientist	
7	Power Series Solution of Fingering Phenomenon arising in Fluid Flow through Homogeneous Porous Media, Vol. 6, Issue 12(2011), 497 – 509	Applications and Applied Mathematics: An International Journal,	
8	An Approximate Solution of Imbibition Phenomenon in Multiphase Flow through Porous Media, Vol. 5 (2011), 113-121.	International Journal of Applied Mathematics and Engineering Research,	
9	A series solution of moisture content in vertical groundwater flow through unsaturated heterogeneous porous media, Vol.159 (2012), 1467 – 1477.	International e Journal of Mathematics and Engineering,	
10	A mathematical model of imbibition phenomenon in heterogeneous porous media during secondary oil recovery process, Applied Mathematical Modelling, (Elsevier), DOI: 10.1016/j.apm.2012.06.015 (IF: 1.37), (2012), Impact factor: 1.579 (with Kinjal Patel, M N Mehta)	Applied Mathematical Modelling, (Elsevier)	ISSN-0307904X
11	A Solution to the problem of seepage of groundwater flow in a heterogeneous porous media on slopping bedrock taking numerical approach, Vol. 18(1) M	Ultra Science	ISSN 2231-346X

	(2006), 29- 34.		
12	A solution of one-dimensional dispersion phenomenon by Homotopy Analysis Method, Vol. 3, Issue 6,(2013), 3626-3631.	International Journal of Modern Engineering Research	ISSN: 2249-6645
13	Homotopy Analysis Method Applied to determine pressure head in unsaturated soil during infiltration phenomenon, Vol. 2, Issue 12, (2013),7244-7251.	International Journal of Innovative Research in Science, Engineering and Technology,	ISO: 3297:2007, ISSN: 2319-8753
14	An Analysis on Groundwater Recharge by Mathematical Model in Inclined Porous Media, Volume 2014, Article ID 189369, 2014.	International Scholarly Research Notices	ISSN: 2356-7872 (Online)
15	Optimal homotopy analysis methods for solving the linear and nonlinear fokker-planck equations, British Journal of Mathematics & Computer Science, SCIENCEDOMAIN international, 7(3), 209-217, 2015.(With Kunjan shah)	British Journal of Mathematics & Computer Science	ISSN: 2231-0851
16	A Study on Analytic Solution of Burger's Equation arising in Longitudinal Dispersion Phenomenon in Groundwater Flow, 81 (2015) 31681-31685, 2015.	Elixir Appl. Math	ISSN 2229-712X
17	Mathematical Modelling for Detecting Diabetes, 2014, 11(1): 24 31, www.ModernScientificPress.com/Journals/ijmms.aspx Florida, USA	International Journal of Modern Mathematical Sciences	ISSN:2166-286X
18	A solution of the burger's equation arising in the Longitudinal Dispersion Phenomenon in fluid flow through porous media by Sumudu transform homotopy perturbation method, International organization of Scientific research, Vol.11, Issue 1, Jan-Feb. 2015.(With Bhumika Choksi)	IOSR Journal of mathematics	e-ISSN: 2278-5728
19	A Solution of the Burger's Equation Arising in the Longitudinal Dispersion Phenomenon in Fluid Flow through Porous Media by Mixture of New Integral Transform and Homotopy Perturbation Method, , 2015, 3, 24-30, Published Online June 2015 in SciRes. http://www.scirp.org/journal/gep http://dx.doi.org/10.4236/gep.2015.34004 (With Kunjan Shah)	Journal of Geoscience and Environment Protection	ISSN Online: 2327-4344
20	Solution of coupled non-linear system by optimal homotopy analysis method, Vol. 3, Issue. 2, August 2015 (with Shreekant Pathak)	International Journal of Conceptions on Computing and Information Technology	ISSN: 2345 - 9808
21	The Modified Homotopy Algorithm for Dispersion Phenomenon, Published online 17 June 2017, DOI 10.1007/s40819-017-0382-9. (with Kunjan Shah)	International Journal of Applied and Computational Mathematics	ISSN 2349-5103,
22	The combined approach to obtain approximate analytical solution of instability phenomenon arising in secondary oil recovery process	Comp. Appl. Math. DOI 10.1007/s40314-017-	x

		Springer	
23	An Approximate Solution of Fingering Phenomenon Arising in Porous Media by Successive Linearisation Method Bhumika G. Choksi, Twinkle R. Singh and Rajiv K. Singh	© Springer Nature Singapore Pte Ltd. 2019 D. Srinivasacharya and K. S. Reddy (eds.), Numerical Heat Transfer and Fluid Flow, Lecture Notes in Mechanical Engineering, https://doi.org/10.1007/978-981-13-1903-7_1	
24	Computational Modelling of Solid Tumor Growth, Vol. 7, Issue 1, (191).	Journal of Advance in Science and Engineering	ISSN: 2319-8354
25	A Semi-Implicit Finite Difference Scheme for the Model of Avascular Tumor Growth, Vol-7 Issue 2	Mathematical Sciences International Research Journal	ISSN 2278-8697

Annexure 1: C Conference/Seminar (Applicable if full text of paper published)

Sr. No.	Title	Journal
1	Perturbed Solution of Saturation of injected phase in instability phenomenon with mean pressure, 20-22 Sep. 2010, 122-128.	The Indo-Russian Joint workshop on Computational Intelligence and Modern Heuristics in Automation and Robotics
2	An Approximate solution of Fokker-Planck equation for one-dimensional groundwater recharge through porous media, June 22-27, 2014, Kona, Hawaii.	Proceedings of the 5th International Conference on Porous Media and its Applications in Science and Engineering ICPM5

Annexure 2: International & National Conferences/Seminars Paper Presented:

Sr. No.	Title	Conference/Seminar (whether International/National/State/Regional/ College or University Level)	Organized by
1	A Solution of the Burger's equation for longitudinal dispersion of miscible fluid flow through porous media	National Conference	Ninth Annual Conference of Gwalior Academy of Mathematical Sciences (GAMS) &

			All India workshop on Mathematical Modeling & Computer Simulation Jan 17-19 2004.
2	The classical solution of the Burger's equation arising into the irradiation of tumor tissue in biological diffusing system,	National Conference	10 th Annual conference of Vijnana perished of India on Mathematical modeling at Deptt. Of Mathematics and Computer applications, Maulana Azad National Institute of Technology Deemed University May 17-19, 2004.
3	A Solution of the Burger's equation arising into the fingero-imbibition phenomenon in double phase flow through porous media,	International Conference	International Conference on Current Trends in Industrial and Applied Mathematics, The Maharaja Sayajirao University of Baroda, 1 ^{6th} -1 ^{8th} January. 2007.
4	Perturbed solution of viscous instability phenomenon in double immiscible phase flow with mean pressure,	National Conference	74 th Annual conference of Indian Mathematical society (IMS), December 27-30, 2008, University of Allahabad
5	Power series solution of Fingero-imbibition phenomenon in fluid flow through porous media,	International conference	ISTAM 2010, NIT Hamirpur, Dec 18-21, 2010.
6	The Power series solution of fingering phenomenon arising in fluid flow through homogeneous porous media,	International Conference	16 th Annual GAMS and 2 nd International conference on Bio-Informatics, Sep. 22-25, 2011, Goa.
7	solution of nonlinear Fokker-Planck diffusion-convection model arising in one-dimensional ground water recharge by spreading in fluid flow through porous	National conference	Department of Applied Mathematics, institute of technology, Banaras Hindu University, March 23-25, 2012,

	media,		Varanasi-221005.
8	Power Series Solution of Imbibition Phenomenon In Multi Phase Flow through Porous Media,	National conference	IMS, December 27-30, 2010.
9	The Power Series Solution Of Boussinesq's Equation Arises In Incompressible Fluid, P	National Conference	Research Meet, 23 rd January, 2011, M.S. University baroda.
10	Power Series Solution Of Nonlinear Fokker-Planck Diffusion-Convection Model Describing Constant Rate Rainfall Infiltration In Porous Media,	National conference	MATHEMATICS MEET2011, 3-5 Feb, 2011, Ahmedabad.
11	An Approximate Solution Of Instability Phenomenon In Heterogeneous Porous Media With Mean Pressure	International conference	International Conference on Fluid Dynamics and its Applications, 20-22, July, 2011, Bangalore.
12	The Power Series Solution of Fingering Phenomenon arising in Fluid Flow through Homogeneous Porous Media,	International Conference	16 th Annual GAMS and 2 nd International conference on Bio-Informatics, 22-25 Sep, 2011, Goa, .
13	The series solution of imbibition phenomenon arising in inclined heterogeneous porous media	International Conference	56 th Congress of ISTAM (An International Meet), Dec. 19-21, 2011, SVNIT, Surat.
14	A mathematical model of imbibition phenomenon in heterogeneous porous media during secondary oil recovery process,	International conference	14 th International Conference of International Academy of Physical Sciences, 22-24 , Dec, 2011, SVNIT, Surat during.
15	A Note on Water Transport Phenomenon by Homotopy Analysis Method,	International conference	57th Congress of Indian society of Theoretical Applied Mechanics (ISTAM) (An International Meet), 17-20 Dec, 2012, Defence Institute of Advanced Technology, Pune.
16	A Note on Burger's equation for irradiation of tumour tissue in biological systems by	National conference	National Conference on Thermal, Fluid and Manufacturing Science, 24-25 Jan,

	using Homotopy analysis method		2014, Surat, Gujarat, India.
17	An analysis on groundwater recharge by mathematical model in inclined porous media	International conference	International Conference on Mathematics and Engineering Sciences-2014(ICMES- 2014), 20-22 March, 2014, Chitkara University, Himachal Pradesh, India.
18	Study on Burger's equations arising in water transport Phenomenon	National conference	30 th annual National Conference of the Mathematical Society Banaras Hindu University on Mathematical Analysis and Application Jan 30-31, 2015
19	Solution of infiltration phenomenon of groundwater flows by optimal homotopy analysis method	National conference	National Conference on Current Development in Analysis and its Applications, March 14-15, 2015, Faculty of Science, The M S University – Baroda, India.
20	Note on the Nonlinear Fokker-Planck Diffusion-Convection Model Arising in Ground Water Recharge Problem by Spreading in Fluid Flow Through Porous Media (: ISCASE-521)	International conference	International Scientific Conference on applied Sciences and Engineering held on 20-21 December, 2014 at Kuala Lumpur, Malasiya.
21	Modified Homotopy Analysis Method, “Advanced Analytical & Numerical Techniques for Engineers and Scientists”	Short-Term Training Programme on	Department of Applied Mathematics and Humanities 3-7 March, 2014, S.V.N.I.T, Surat.
22	Application of Modified homotopy analysis method to Fingero-Imbibition phenomenon in double phase through porous media,	19th Annual cum 4th International Conference on Gwalior Academy of Mathematical Sciences-(GAMS) On “Advances in Mathematical Modeling to Real	Organized by Department of Mathematics and Humanities October 3- 6, 2014, S.V.N.I.T, Surat.

		World Problems”	
23	Application of the homotopy analysis method to the Fokker-Planck equation,	19th Annual cum 4th International Conference Gwalior Academy of 11Mathematical Sciences-(GAMS) On Advances in Mathematical Modeling to Real World Problems”	Department of Mathematics and Humanities October 3- 6, 2014, S.V.N.I.T, Surat.
24	Solution of Burger’s equation in a one-dimensional groundwater recharge by spreading using q-homotopy analysis method	International Conference	International Scientific conference on Applied Sciences and Engineering (ISCASE), 20-21 December, 2014, Pearl International Hotel, Kuala Lumpur, Malaysia
25	A Solution of the Burger’s Equation arising in the Longitudinal Dispersion Phenomenon in Fluid Flow Through Porous Media By Mixture of New Integral Transform And Homotopy Perturbation Method	Current development in analysis and its application,14-15 March, 2015, M. S. University, Baroda.	Faculty of Sciences, MSU, Baroda
26	Study on the behaviour of the Longitudinal Dispersion Phenomenon by Sumudu Transform Homotopy Perturbation Method	International Conference on Computational Heat and Mass Transfer, November 30 to December 2, 2015,	Department of Mathematics, National Institute of Technology, Warangal-506 004, Telangana State, India.
26	A study of instability phenomenon in homogeneous porous media during secondary oil recovery process	International Conference	Applied Physics and Mathematics (ICAPM), August 21-22, 2016, Bangkok, Thailand.
27	Computational Modelling of Solid Tumor Growth,	First International Conference on NexGen Technologies	Sengunthar Engineering College Tamilnadu, India ISBN: 978-93-86171-90-0
28	A Semi-Implicit Finite Difference Scheme for the Model of Avascular	International Conference on Advances in Pure	Madurai Kamaraj University, Madurai, India, Sep 06-08,

Tumor Growth	& Applied Mathematics	2018
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Annexure 3: Invited Talk & Chairmanships in national/international conferences/seminars

Sr. No.	Title of talk/Academic Session	Title of Conference/Seminar ect. (whether International/ National/State/Regional/ College or University Level)	Organized by (date)
1	“Burger’s equation and its Applications”		Department of Mathematics, Sardar Patel University, Vallabh Vidhya Nagar-388120. On 6 th March 2010,
2	“A Classical solution of saturation problem arising in flow through porous media”	Research Seminar on Mathematical Sciences	Department of Mathematics, Sardar Patel University, Vallabh Vidhya nagar-388120 during Jan 10-12 2009
3	Laplace Transforms	Lecture on Laplace Transforms	UKA TARSADIYA University, on 15 September, 2012.
4	Ordinary Differential Equation	An Expert Lecture on Ordinary Differential Equation	UKA TARSADIYA University, on 22 September, 2012.
5	Expert talk	ISTE-SRM Short Term Training Programme on Application of Mathematics in Real World Problems (STTP)	SVNIT Surat, during 18 th -22 nd March- 2013.
6	Expert talk	TEQIP sponsored STTP on Current Trends in Computational Method for PDE and Fluid Mechanics	19-23 August-2013 on 22/08/2013, SVNIT, Surat.
7	Expert talk	TEQIP sponsored STTP on Mathematical, Statistical, Operation Research based Modeling and Simulation for	Expert talk has been given at the, 27-31 January, 2014 on 28/01/2014. SVNIT, Surat.

		Researchers, Engineers and Scientists	
8	Expert talk	TEQIP sponsored STTP on Advanced Analytical & Numerical Techniques for Engineers and Scientists	3-7 March 2014 on 06/03/2014, SVNIT, Surat.
9	Expert talk	TEQIP sponsored STTP on Computational Flow and Transport Modelling, Simulation and Algorithms	24-28 March-2014 on 27/03/2014. SVNIT, Surat.
10	Expert talk	Analysis, Geometry and Applications	Department of Mathematics, Sardar Patel University, Analysis, Geometry and Applications UGC-SAP-DRS-II, 17-18 February 2014.
11	Lab session		TEQIP –II sponsored one week short term training program on “ Mathematical & Optimization Modeling with simulation by Scientific tools for researchers, Engineering and Scientists (MOMSRES)” S.V. National Institute of Technology, Surat, 22 nd to 26 th June, 2015.
12	Expert talk	Study on an approximate solution of Non-linear partial differential equations in Porous Media, Transfer” during 14 th - 18 th December-2015, AMHD, SVNIT, Surat-395007.	Dated 15/12/2015 Time 2.00 p.m.- 3.00 p.m. at the TEQIP-II Short Term training Programme (STTP) Computational Heat and Mass

13	Expert Lecture	Recent Trends of Mathematics in Science & Technology	ASH&D, GIDC Degree Engineering College, Navsari during 2 nd -6 th January, 2017
14	Expert Lecture	Study of Non Linear partial differential equations an its applications	ASH&D, GIDC Degree Engineering College, Navsari during 2 nd -6 th January, 2018

Taught Papers

Mathematics I B.Tech I (I- Semester), Mathematics II B.Tech II (II - Semester), Engineering Mathematics III B.Tech II (III-Semester) (Branch-Electronics, Electrical and Chemical), Engineering Mathematics and Statical Methods (EMSM) B.Tech II (III Semester) I Branch Civil)

Engineering Mathematics III B.Tech II (IV-Semester) (Branch-Mechanical Production)Engineering Mathematics III B. Tech II (III semester) (Branch- Civil)

M.Sc. I and II (Mathematics I, Mathematics II and IV) (Tutorial work)

M.Sc. I (Mathematics-I), M.Sc. III (Sem- 6th) (Complex Analysis), MM101,MM104, MM217

MM 513 Advanced Fluid Mechanics

MM 101 M.Sc. I (Semester I)

Additional Report

- (1) **Occupied the services** of this institute **during flood situations in the institute campus** in the month of August **2006**.
- (2) As a **Co-coordinator** in the **Staff Development Program** on “Mathematical Modelling and Simulation” during 21-25 December 2009.

- (3) As a **Co-ordinator** in **TEQIP Sponsored, Short Term Training Programme** on “Computational Fluid Dynamics for Engineers and Scientists (CFDFES), at SVNIT, Surat-395007 during 08-12 July 2013.
- (4) As a **Co-ordinator** in **TEQIP Sponsored Two Days National workshop on Computational Fluid Dynamics for Engineers and Scientists** during 20-21 June 2014.
- (5) As a Examiner in DOEACC-2012 which was held on 14-17/01/2012.
- (6) As a Examiner in Gate Examination 2012 which was held on 12/02/2012.
- (7) As a Examiner in Advanced Gate Examination 2013 which was held on /06/2013.
- (8) Worked in Stock verification committee of MOTHER TERESA BHAVAN DURING MAY-JUNE 2013,2014.
- (9) One of the members in Hostel mess and Operation Tender visit for year 2013- as par order Hostel Section/96/2012-13 Date 16-05-2013.
- (10) One of the members in Kitchen Purchase committee Date 20-06-2013.
- (11) DASVIDANIYA – 2014.
- (12)In mess tender committee, May –June 2014.
- (13)Hostel Admission committee During April 2014.
- (14)In CSAB 2014-15, Admission committee, E/2014-15/186.
- (15) MMNCT/372/2013-14
- (16)As a Examiner in Credit Seminars and Research Progress seminars of Research Scholars in AMHD-2011-13, 2014-15.
- (17)As a Ph.D. Co-ordinator at Department level of Ph.D. Scholars year 2011-13, 2014-15.
- (18) Discipline Committee at Hostel level, 2014
- (19) AT MTB Hostel, working for Events and Mess 2014.
- (20) As par Office order: E/2014-15/186, Institute level B. Tech Admission Committee
- (21) Dasvidaniya-2015
- (22) Hostel Section/551/2014-15, SPARSH-2015
- (23) Convocation 2016, in registration committee
- (24)Examiner in presentations of summer Internship students as ref.: Deav R & C/Summer Internship/72/2017-18 dated 22.07.2017, and AMHD No. 458, 08/08/2017.
- (25) No. E/ 757/2017-18, Annual mess & operation contract for various hostels of SVNIT, (Institute level committee)
- (26) No. E/688/2017-18, anti ragging committee
- (27) office order dated 04/09/2017, Students council election year 2017-18
- (28) Convocation 2017, in registration committee

List of arranged lectures in AMHD, SVNIT.

Sr. No.	Name of Expert	Duration	Topic	Institution
1	Prof. V.P. Saxena	07-05-2013	General Talk on Mathematics –: Special Function and Applications	Ex-vice Chancellor, Sagar Institute of Technology, Bhopal
2	Prof. K.N. S. Kasi Vishvanathanm	31-05-2013	Cubic Spline Technique	NIT Wrangle
3	Prof. L. P. Singh	27/10/2017	Progressive Wave Solution	IIT, BHU, Varanasi
4	Prof. Y N Reddy	10/09/2018	Numerical Treatment of Singularly Perturbed Differential Difference Equations	NIT Warangle
5	Prof. L P Singh	06/12/2018	Perturbation Theory and Asymptotic Expansions	IT, BHU

International & National Workshops/Conferences/seminars Attended

➤ **One week workshops**

- (1) Short term course on Mathematical Models and Methods in Engineering (Under TEQIP) Organized by the Department of Mathematics, *Maulana Azad national Institute of Technology*, Bhopal, 5-9, June, 2006.
- (2) Short term Training Programme on Application Orientation in Engineering Mathematics & Mathematical Modeling, *S.V. National Institute of Technology*, Surat-395007 during 26th -30th, December, 2006.
- (3) One Week short term training programme on Applications of Mathematical Sciences and soft computing (by AICTE), *S.V. National Institute of Technology*, Surat-395007, 8th -12th, December, 2008.
- (4) One Week short term training programme on Advances in Water Resources Engineering (by AICTE), *S.V. National Institute of Technology*, Surat-395007, 22th -26th, December, 2008.
- (5) One Week short term training programme on Advances in Recent Scientific and Technological Advances in physical Sciences (RSTAPS'S 08-09)(AICTE), *S.V. National Institute of Technology*, Surat-395007, 29th December to 2008-2nd January 2009.
- (6) One week short term training programme on "Pedagogy and research Methodology" jointly organized by the Department of Mechanical Engineering and Department of Chemical Engineering at *Sardar Vallabhbhai National Institute of Technology*, Surat-395007 during August 3-7,2009.
- (7) Short term training programme on "Advanced in Condensed Matter Applied Physics, *Sardar Vallabhbhai National Institute of Technology*, Surat during 31st August-4th September 2009.
- (8) AICTE Sponsored Short term Training Programme on Non-Destructive Testing organized by Department of Applied Physics, *Sardar Vallabhbhai National Institute of Technology*, Surat, during 5-9 October, 2009.
- (9) AICTE Sponsored Short term Training Programme on Mathematical Applications in Real World Problems Organized by Department of Mathematics and Humanities, *Sardar Vallabhbhai National Institute of Technology*, during 14-18 December, 2009.
- (10) National workshop cum training programme on RECENT TRENDS IN FLUID MECHANICS, organized by *DST-Center for Interdisciplinary Mathematical Sciences and Department of Mathematics*, BHU, Varanasi during, July 06-12,2010.
- (11) Staff Development Programmer on Advances Topics in Applied Physics, *Department of Applied Physics*, S.V. National Institute of Technology, Surat-395007 during February01-05, 2010.
- (12) Workshop on Patial Differential Equations and Its Application, *IIT Patna*, 2-5 March 2011.
- (13) Lecture Series on Partial Differential Equations and Their Applications, *Department of Applied Mathematics and Humanities*, S.V. National Institute of Technology, Surat during 27-28nAugust, 2011.

- (14) Partial Differential Equations and Its Application, *Department of Applied Mathematics and Humanities*, S.V. National Institute of Technology, Surat, 1-4 March 2012.
 - (15) National Workshop on Developing Soft Skills, *Department of Applied Mathematics and Humanities*, S.V. National Institute of Technology, Surat, 20-21 January 2012.
 - (16) Recent Trends in Corrosion Science, technology, Monitoring and Control, Applied Science and Humanities Department, 25-29, December 2007.
 - (17) National Workshop Cum Training Programme on Computing Techniques and Applications, *DST-Centre for Interdisciplinary Mathematical Sciences and the Department of mathematics*, Banaras Hindu University, Varanasi, July 01-07, 2012.
 - (18) Advanced Engineering Optimization Through Intelligent Techniques (AEOTIT), Department of Mechanical Engineering, Sardar Vallabhbhai National Institute of Technology, India. 7-11, January, 2013.
 - (19) Analysis, Geometry, and Applications, *Department of Mathematics*, Sardar Patel University (sponsored by UGC-SAP-DRS-II), Vallabh Vidhyanagar-388120, 07-08, March, 2013.
 - (20) Pedagogy Training Programme: Developing Teachers for Effective Teaching & Research under Technical Education Quality Improvement Program-II (TEQIP-II), *Sardar Vallabhbhai National Institute of Technology*, Surat-395007, 3-7, June, 2013.
 - (21) Hindi Training Programme on “Rajbhasha Niyam Avam Software Prashikshan” *Sardar Vallabhbhai National Institute of Technology*, Surat-395007, 09-13 June 2014.
 - (21) Application of Fixed Point Theory & Nonlinear Analysis for Engineers and Sciences under TEQIP –II, *Sardar Vallabhbhai National Institute of Technology*, Surat-395007, June 30-July 04, 2014.
 - (22) One week short term training programme on Transform Methods in Science and Engineering (TMSE 2017), AMHD, SVNIT, 6th to 10th March, 2017.
 - (23) One week short term training programme on Approximation Theory, Fractional Calculus and Computation with Applications in Engineering and Sciences (ATFCCAES-2017), AMHD, SVNIT, 10th to 14th March, 2017.
 - (24) One week short term training programme on Recent Advances in Computational Fluid Dynamics, AMHD, SVNIT, 13th to 17th March, 2017.
- **Two days workshop**
TEQIP-II Sponsored two days workshop on “Ethics and Technical Education: Challenges and Solution” (ETECS-2016) , Department of Civil Engineering, SVNIT, Surat-395007, 18th -19th November,2016.
 - **Two weeks workshop**
 - National workshop cum training programme on Advanced Numerical Techniques and Applications, *DST-Center for Interdisciplinary Mathematical Sciences and Department of*

Mathematics, BHU, Varanasi, June 29-July, 11-August, 2009.

- Two week short term training programme on “Mathematical Methods for Engineers and Scientists” under TEQIP , Sardar vallabhbhai national Institute of Technology, Surat-395007, 29 June- 10 July 2015.

➤ **Conferences seminars**

- (1) International Conferences on Mathematical fluid Dynamics, *Deptt. of Maths and Stat. University of Hyderabad*, Hyderabad-500046, INDIA, 2-7, December 2004.
- (2) Ninth Annual Conference of Gwalior Academy of Mathematical Sciences (GAMS) & all India workshop on Mathematical Modeling & Computer Simulation, Jan 17-19, 2004.
- (3) 10th Annual conference of Vijnana perished of India on Mathematical modelling. *Deptt. Of Mathematics and Computer applications Maulana Azad National Institute of Technology Deemed University*, Bhopal, May 17-19, 2004.
- (4) International Conferences on Current Trends in Industrial and Applied Mathematics, *Maharaja Sayajirao University of Baroda*, 16th -18th January, 2007.
- (5) National Conference on Hydraulics & Water Resources Hydro – 2007, *Sardar Vallabhbhai National Institute of Technology*, Surat – 395007, December 21-22, 2007.
- (6) National Conference on Advances in Fluid Flow and Thermal Sciences (AFFTS- 2008) under Networking Scheme of TEQIP, 22nd – 24th May 2008.
- (7) International Conferences on Mathematical Modelling and Non-linear equations, Department of Mathematics, 20-22 January 2010, B.N.M.I.T. Institute of Technology, Bangalore.
- (8) Conference on Special Functions and their Applications & Symposium on Computational and Biological Mathematics Organized by School of Mathematics and Allied Sciences Jiwaji University, Gwalior and Society of Special Functions and their Applications, June 21-23, 2010.
- (9) An International Meet–ISTAM 2010, *Department of Mathematics, National Institute of Technology*, Hamirpur (HP), India, 18-21, December, 2010.
- (10) One Day Research Meet, *Department of Applied Mathematics, Faculty of Technology and Engineering (collaboration with Applied Mathematics Alumni Association)*, M.S. University of Baroda, 23rd January, 2011.
- (11) International Conferences on Fluid Dynamics and Its Applications, *Department of Mathematics*, B.N.M.I.T. Institute of Technology, Bangalore, 20-22 January 2011.
- (12) An International Meet –ISTAM 2011, *Department of Applied Mathematics and Humanities*, S.V. National Institute of Technology, Surat, India, 19-21, December 2011.
- (13) Attended an International Conference on Special Functions & Their Applications (ICSFA 2012), *Department of Applied Mathematics and Humanities, SVNIT*, Surat, India, June 27-29, 2012.

- (14) National Conference has been attended on Fluid Mechanics and Fluid Power, *Sardar Vallabhbhai National Institute of Technology*, Surat, December 13-15, 2012.
- (15) 19th Annual Cum 4th International Conference of Gwalior Academy of Mathematical Sciences (GAMS) on Advances in Mathematical Modelling to Real World Problems October 3-6, 2014.
- (16) National Conference on Current Development in Analysis and its Applications March 14-15, 2015 Sponsored by UGC, Department of Mathematics, Faculty of Science, MSU, Vadodara,390002

Review of Research Papers:

- (1) **Journal of Porous Media** Dated 17-1-2009.
- (2) **Journal of Porous Media** Dated 08-12-2009
- (3) **TIPM1278**, "Variable Dispersivity Effects in Higher Dimensional Contaminant Transformation and Transport Models", *Springer*.
- (4) **TIPM1255R1**, "Analysis of seepage for power-law fluids in the fractal-like tree network", *Springer*.
- (5) **TIPM1278R1**, "Analytical Solutions for Two-Dimensional Advection-Diffusion-Reaction Equation with Variable Hydrodynamic Diffusion Coefficients", *Springer*.
- (6) **TIPM1255**, "Analysis of seepage for power-law fluids in the fractal-like tree network", *Springer*.
- (7) **NTMSCI-2014-15**, "The Relation between Quasi Valuation and Valuation ring and filtered ring" New Trends in Mathematical Sciences.
- (8) **NTMSCI-2014-17**, "A Cooperative Method to Improve Segmentation of Brain MR Images" New Trends in Mathematical Sciences.
- (9) Iranian natural red soil and its Modified form with EDTA for removal of phosphorous from aqueous solution (GEP) (2170052)
- (10) NLENG.2017.0049," Analytical study of time-fractional model of Navier-Stokes equations and nonlinear Schrodinger equations" for Nonlinear Engineering Modeling and Application.

Additional Research Activity:

- (3) I had worked in Academic Committee of Staff Development Programme (SDP) in Mathematics Section, during 8th -12th December 2008.
- (4) I had worked in Academic Committee of Staff Development Programme (SDP) in Physics Section, during 29th December 2008 to 2nd January 2009.

- (5) **Awarded for (MRP) Minor Research Project** entitled” Study on nonlinear partial differential equations arising in ground water recharge phenomena on fluid flow through porous media”
GUJARAT COUNCIL ON SCIENCE AND TECHNOLOGY.
- (6) As per office order No. MED/Ph.D./4327/14-15, dated 25/3/2015. Examiner in Ph.D. Credit Seminar I in MED, dated 06/04/2015.
- (7) As per office order No. MED/Ph.D./627/15, dated 20/5/2015, Examiner in Ph.D. Research Progress Seminar II in MED, dated 22/5/2015
- (8) As per No. 1319, dated: 13/01/2017, Internal Examiner in Viva voce examination of Mr. Desale Satish V. on dated 23rd January, 2017.
- (9) As per office order No. Acad/4036, dated: 27/03/2017, Internal Examiner in Viva voce examination of Ms. Patel Asmita C. on dated 17th May, 2017.
- (10) **Awarded for (MRP) Minor Research Project** entitled” Study on Magneto hydrodynamic flows under different physical conditions” **GUJARAT COUNCIL ON SCIENCE AND TECHNOLOGY**

About the Membership:

- (1). Life Membership in Indian Society of Theoretical and Applied Mechanics on the 18th day of December 2010 and No. is L/666
- (2) Life membership in Indian Mathematical Society, GAMS.
- (3) Membership in women of Mathematics

Paper Setters :

B.Tech II (IV- Semester) (Branch- Mechanical Production) End Semester May 2004

Examination April 2005, Engg. Mathematics III

B.Tech II (IV- Semester) (Branch- Mechanical Production) End Semester Examination, May 2006, Engg. Mathematics III

B.Tech II (III- Semester) (Branch- Civil) End Semester Examination November 2007, Engg. Mathematics and Statistical Methods

B. Tech I (I st semester) End Semester supplementary Exam December 2006 Mathematics I

B. Tech I (II semester) End Semester supplementary Exam December 2007 Mathematics II

B.Tech II (IV- Semester) (Branch- Civil) End Semester Examination April 2008, Engg. Mathematics and Statistical Methods

B.TechII (IV-Semester) (Branch-Chemical) End Semester Examination November 2008, Engg. Mathematics III

Reliance Degree level Training Program in Inct. & Cont. Engg. (2nd Semester) End Semester Examination June-2008, Mathematics II

B. Tech I (I st semester) End Semester Exam December 2009-10, Mathematics I

B.TechII (III-Semester) (Branch-Chemical) End Semester Examination December 2009, Engg. Mathematics III

B.TechII (III-Semester) (Branch-Electrical) End Semester Examination December 2010-2014, Engg. Mathematics III

MM101,MM104,MM203-2013-14

MM101,MM104,MM203, MM210, MS217-2014

MM 104-2015, MM104-2016

ASM-101 2017

Academics activity

Course co-ordinator of B.Tech II (III Semester) (Branch – Chemical) in year 2008

Course co-ordinator of B.Tech II (IV Semester) (Branch – Civil) in year 2009.

Course co-ordinator of B.Tech II (III Semester) (Branch – Chemical) in year 2009. Course coordinator of M.Sc I (five year integrated course) (II Semester) (Branch – All) in year 2010.

Course co-ordinator of B.Tech I (I & II Semester) in year 2009-2010.

Course co-ordinator in B.Tech II (EC/EL) in year 2011

Course co-ordinator in M.Sc. III(MM 302) sem. 6 th in year 2012.

Course co-ordinator in M.Sc. III(MM 302) sem. 6 th in year 2013.

Course co-ordinator in M.Sc. I(MM 101) sem. 1st in year 2013-2014.

Course co-ordinator in B.Tech II, Semester III(EL) in year 2013-2014

Ph.D. co-ordinator 2009-2014

As a one of the member in CSAB 2014.

Ph.D. Co-ordinator 2014-15

B.Tech II Semester IV Branch Civil, as a Co-ordinator, MH 210, Engg. Maths III

M.Sc. I (II Semester), Co-ordinator MM104

Ph.D. Co-ordinator 2017

B.Tech I Co-ordinator 2017-18, 2018-19

M.Sc I Co-ordinator, 2017-18

Annexure: 12 Additional Record of paper setter at other University
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As a Paper Setter in UKA TARSADIYA UNIVERSITY, Bardoli during May 2012.

As an Examiner at UTU (Uka Tarsadiaya University) Maliba, 2012.

As an Examiner at UTU (Uka Tarsadiaya University) Maliba, 2013-2014
