

CURRICULUM VITAE

RAMAKANTA MEHER, Ph.D.
Assistant Professor
Department of Mathematics
S.V National Institute of Technology Surat
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Current Position:

Assistant Professor at the Department of Mathematics,
S.V National Institute of Technology Surat, Gujarat, India since November, 2006.

Area of Specialization:

Fluid Dynamics (Mathematical Modeling in fluid flow through porous media, Study of Nonlinear problems arising in oil recovery Process), Adomian Decomposition Method, Double Decomposition Method, Homotopy Analysis Method, Differential Transform Method, Partial differential equations.

Research Interests:

Fluid flow through Porous Media
Heat and Mass transfer in porous media
Linear and Nonlinear flow in a channel
Perturbation techniques
Fracture and Heterogeneous Porous media

Awards and Recognitions:

1. Awarded **National Eligibility Test (NET)** for Lectureship by the Council of Scientific and Industrial Research (CSIR), New Delhi, India, 2004.
2. Qualified in the **Graduate Aptitude Test in Engineering (GATE 2005)** conducted at national level in India.

Courses teaching/taught:

M.Sc. Courses taught in Sambalpur University: Complex Analysis and Partial Differential Equations.
B. Tech. Courses: Engineering Mathematics-I, II and III.
Int.MSc. Courses: Differential Equations, Calculus of Variation and Integral Equation, Linear Algebra, Differential Geometry

Research Guidance

Level of guidance	Registered	Degree awarded
MSc. Dissertation Guidance		07
		1. Saroj Singh
		2. Kumar Vaibhav
		3. Hardik Patel
		4. Priyanka Ahire
		5. Nikhil Jha
		6. Shradha Chavan
Ph.D.	04 (Cont.)	
	(i) Trushit Patel (FIR)	
	(ii) Hardik Patel (FIR)	
	(iii) Vimal Gohil (PEC)	
	(iv) Nirav Patel (PEC)	

Sponsored Research Project

S. No.	Title	Funding Agency	Period
1.	Analytical treatment and convergence of the Adomian decomposition method for two phase flow processes in heterogeneous porous media arising in oil recovery process	S.V National Institute of Technology, Surat	02 years

Selected Research Publications in International Journals:

1.	Meher,R., Mehta, M.N. Dispersion of Miscible Fluid in semi infinite porous media with unsteady velocity distribution, <i>International Journal of Mathematical Sciences and Engineering Applications</i> , Vol. 3, No-IV, pp-199-208,2009.(Math Sci net indexed)
2.	Meher,R., Mehta, M.N.,Meher,S.K. A new approach to Backlund Transformations of Burger Equation Arising in Longitudinal Dispersion of Miscible Fluid Flow through Porous Media”, <i>International journal of Applied Mathematics and Computation</i> , Vol. 2, No-3,pp 17-24, 2010.
3.	Meher,R., Mehta, M.N.,Meher,S.K. Adomian Decomposition method for Dispersion phenomena arising in Longitudinal Dispersion of Miscible Fluid Flow through Porous Media”, <i>Advances in Theoretical and Applied Mechanics</i> , Vol. 3, No-5, pp-211-220,2010.

4.	Meher,R. , Mehta, M.N.,Meher,S.K. Adomian Decomposition Method for Moisture Content in One Dimensional Fluid Flow through Unsaturated Porous Media, <i>International journal of Applied Mathematics and Mechanics</i> , Vol. 6, N0- 7, pp 13-23,2010.
5.	Meher,R. , Mehta, M.N.,Meher,S.K. Adomian Decomposition Approach to Fingero-Imbibition Phenomena in Double Phase Flow through Porous Media, <i>International journal of Applied Mathematics and Mechanics</i> , Vol. 6, No-9, pp- 34-46,2010.
6.	Meher,R. , Mehta, M.N.,Meher,S.K. Exponential Self Similar Solutions Technique for Instability Phenomenon Arising In Double Phase Flow through Porous Medium with Capillary Pressure, <i>Applied Mathematical Sciences</i> ,Vol.4,No-27,pp-1329-1335,2010. (Scopus index)
7.	Meher,R. , Mehta, M.N.,Meher,S.K. Exponential Self Similar Solutions Technique for Imbibition phenomenon arising in Double Phase Flow through Porous Medium with capillary pressure, <i>International journal of Applied Mathematics and Mechanics</i> , Vol.7(8),pp-29-40 ,2011.
8.	Meher,R. , Mehta, M.N.,Meher,S.K. Instability Phenomenon Arising In Double Phase Flow through Porous Medium with Capillary Pressure, <i>International journal of Applied Mathematics and Mechanics</i> , Vol.7(15),pp-97-112, 2011.
9.	Meher,R. , Mehta, M.N., Meher, S.K. A new approach to Backlund Transformation for Longitudinal dispersion of miscible fluid flow through porous media in oil reservoir during secondary recovery process, <i>Theoretical and Applied Mechanics</i> , Vol.38(1),pp-1-16 ,2011. (Scopus index)
10.	Meher,R. , Meher,S.K. Analytical Treatment and Convergence of the Adomian Decomposition Method for Instability Phenomena Arising during Oil Recovery Process, <i>International Journal of Engineering Mathematics</i> , Volume-2013 Article ID-752561, 2013.
11.	Meher,R. ,Meher,S.K. Series Solution for Porous Medium Equation arising in Fingero-Imbibition phenomenon during oil recovery process, <i>Applied Mathematics and Information Sciences Letters</i> , Vol.3(1),pp-25-30, 2015.
12.	Meher,R. ,Patel,T. A Solution of Infiltration problem arising in Farmland Drainage using Adomian Decomposition Method, <i>British Journal of Applied Science and Technology</i> , Vol.6(5): 477-485, 2015.
13.	Meher,R. ,Patel,T. A Study on Temperature Distribution, Efficiency and Effectiveness of longitudinal porous fins by using Adomian Decomposition Sumudu Transform Method , <i>Procedia Engineering, Elseiver</i> , Vol.127 (2015),PP- 751 – 758,2015. (Scopus index) .
14.	Meher,R. ,Patel,H. An Efficient Technique for Solving Gas Dynamics Equation Using the Adomian Decomposition Method, <i>International Journal of Conceptions on Computing and Information Technology</i> , Vol.3(2),7/49-10/49 August- 2015.
15.	Meher,R. ,Patel,T. Adomian Decomposition Sumudu Transform Method for Solving Fully Nonlinear Fractional Order Power-Law Fin-Type Problems, <i>International Journal of</i>

	<i>Mathematics and Computation</i> , Vol. 27(2),pp-7-16,2016 . (Math Sci net indexed)
16.	Meher,R.,Patel,H. Application of Laplace Adomian Decomposition Method for the soliton solutions of Boussinesq-Burger equations, <i>International Journal of Advances in Applied Mathematics and Mechanics</i> , Vol.3(2), pp.50-58,2016. (Math Sci net indexed)
17.	Meher,R.,Patel,H. Application of modified Adomian decomposition method for solving higher order boundary value problem, <i>International Journal of Mathematics and Computation</i> , Vol. 27(3), pp.120-131, 2016. (Math Sci net indexed)
18.	Meher,R.,Patel,H. Modified Adomian Decomposition Method for Solving Eleventh-order Initial and Boundary Value Problems, <i>British Journal of Mathematics & Computer Science</i> , Vol.8(2): 134-146, 2015.
19.	Meher,R., Meher,S.K. Analytical treatment and convergence of the Adomian decomposition method for fingero-imbibition phenomena arising during oil recovery process , <i>Mathematical Sciences Letters</i> , Vol. 5(3), 2016. (Article in press)
20.	Meher,R.,Patel,H. Simulation of Fingering Phenomena in Fluid Flow Through Fracture Porous Media with Inclination and Gravitational Effect , <i>Journal of Applied Fluid Mechanics</i> , (SCI and Scopus Indexed and ISI impact factor 0.888) (Article in press)
21.	Meher,R.,Patel,H. A study on recovery rate for counter – current imbibition phenomenon with Corey’s model arising during oil recovery process, <i>Applied Mathematics and Information Sciences</i> , Appl. Math. Inf. Sci. 10, No. 5, 1-8 (2016), Scopus indexed,(Article in press)
22.	Meher,R.,Patel,H. Analytical Investigation of Jeffery-Hamel flow by Modified Adomian Decomposition Method, <i>Ain-Shams Engineering Journal ,Elseiver</i> , Scopus indexed,(Article in press) ,
23.	Meher,R.,Patel,T. Adomian Decomposition sumudu transform method for solving convective radial fins with temperature-dependent thermal conductivity of fractional order energy balance equation, <i>Maejo International Journal of Science and Technology (MIJST)</i> , , (SCI and Scopus Indexed and ISI impact factor 0.367) (Article in press) .
24.	Meher,R.,Patel,T. Adomian decomposition sumudu transform method for solving a solid and porous fin with temperature dependent internal heat generation, <i>SpringerPlus</i> , 5(1) , 1-18, DOI :10.1186/s40064-016-2106-8.(SCI and Scopus Indexed (Springer)) (IF:0.982)
25.	Meher,R.,Patel,H. Approximate Analytical Study of Counter-Current Imbibition Phenomenon in a Heterogeneous Porous Media, <i>Applied Mathematical Sciences</i> , Vol. 10, 2016, no. 14, 673 – 681, doi.org/10.12988/ams.2016.617. (Scopus index)
26.	Meher,R.,Patel,T. Adomian Decomposition Sumudu Transform Method for Convective Fin with Temperature-Dependent Internal Heat Generation and Thermal Conductivity of Fractional Order Energy Balance Equation, <i>Int. J. Appl. Comput. Math.(Springer)</i> . (Article in press)

27.	Meher,R.,Patel,H. Simulation of counter-current imbibition phenomenon in a double phase flow through fracture porous medium with capillary pressure, <i>Ain-Shams Engineering Journal ,Elseiver, Scopus indexed</i> (Article in press)
28.	Meher,R., Patel,H. Simulation of counter-current imbibition phenomenon with Corey's model in double phase flow through heterogeneous porous medium with capillary pressure, Iranian Journal of Science and Technology, Transactions A: Science, (SCI and Scopus indexed (Springer)) (I.F:0.128) (Article in Press)

Books/ Chapters published in Books/ Proceedings of Conferences/ knowledge based serial volumes, etc.

S. No	Title with page nos.	Book Title, Editor & Publisher
1.	Exponential Self similar solution technique for imbibition phenomenon arising in double phase flow through porous medium with capillary pressure.	Proceeding of International Conference on Challenges and applications of mathematics in science and technology
2.	Longitudinal Dispersion of Miscible Fluid flow through porous media	Proceeding of the 4th International Conference on Advances in Mechanical Engineering
3.	Imbibition Phenomenon arising in double phase flow through porous medium with capillary pressure	Proceeding of the World congress of Engineering Vol-1,WCE-2011 July 6 th -8 th ,2011,London,UK
4	A Study on Saturation of Wetting Phase in Instability phenomena arising in fluid flow through porous media by using Adomian Decomposition Method	Mathematical Sciences International Research Journal, Vol.: 3, No. 1,247-253 (2014) ISBN: 2278-8697
5	Finite Element Solution of Boussinesq equation for infiltration phenomena	Proceeding of 19 th Annual cum 4 th international conference of GAMS on Advances in Mathematical Modelling to Real world Problems(3-6 Oct-2014),67-73, 2014.
6.	Application of Adomian Decomposition Method for infiltration and drainage problem	Proceeding of IMBIC, (21-23Dec-2014),Vol:03, 129-136, 2014.

Papers presented in Conferences, Seminars, Workshops, Symposia

S. No.	Title of the paper presented	Title of Conference/ Seminar	Organised by
1.	Dispersion of Miscible fluid in semi infinite porous media with unsteady velocity distribution	International conference on computational partial differential equation during 9 th -13 th Dec-2008	IIT, Mumbai

2.	Exponential self similar solution technique for instability phenomenon arising in double phase flow through porous medium with capillary pressure	Annual Conference of Orissa Mathematical Society	IGIT, Sarang
3.	Application Laplace Adomian Decomposition Method for the soliton solution of Boussinesq-Burger equation	Proceeding of ICRTM-2015.	University of Allahbad
4.	Adomian Decomposition Sumudu transform Method for solving a Fin with temperature dependent internal heat generation and constant thermal conductivity	Proceeding of ICRTM-2015.	University of Allahbad
5.	Adomian Decomposition Sumudu Transform method for temperature distribution, fin efficiency and fin effectiveness of convective straight fins	International conference on current Trends in PDEs:Theory and Computations During 28 th -30 th Dec-2015	South Asian University, New Delhi

Participation in Refresher Courses/ Training Courses/ Workshops, etc.

S. No.	Programme	Duration	Organizers
1.	Advanced Instructional School on "Differential Topology"	15 th Jun-04 th July-2015	NEHU,Shillong
2.	KAUST-CIMPA Research School in "Applied Mathematics on Uncertainty Quantification"	5 th -12 th January-2012	King Abdullah University of Science and Technology, Thuwal, Saudi Arabia
3.	CIMPA-UNESCO-MESR-MICINN-APSA-SOUTH AFRICA Research school on "Modelling and Simulation in Population Biology"	13 th -18 th June-2011	African Institute of Mathematical Sciences, Muizenberg, Capetown, South Africa
4.	CIMPA-UNESCO-MICINN-THAILAND Research school on "Spectral Triples and their applications"	22 nd May-04 th June-2011	Chulalongkorn University, Bangkok, Thailand
5.	Advanced Instructional School on "Partial Differential Equation"	15 th Dec-2008 to 6 th January-2009	TIFR Center for Applicable Mathematics, Bangalore, India

6.	STTP on “Sustainable Water and Waste Management Technique”	27 th -31 st July-2009	S.V National Institute of Technology, Surat , India
7.	STTP on “Advanced in Condensed Matter Physics”	31 st –Aug to 4 th Sept-2009	S.V National Institute of Technology, Surat, India
8.	Workshop on “Operator Theory”	7 th Dec-12 th Dec-2009	Institute of Mathematics and Applications, Bhubaneswar, India
9.	Induction Training Programme	18 th -20 th January-2008	Effective quality upgradation assistance for technical education, Newdelhi at S.V National Institute of Technology, Surat, India
10.	Pedagogy Training	12 th -15 th May-2008	Effective quality up-gradation assistance for technical education, New delhi at S.V National Institute of Technology, Surat, India
11.	Training on Research Methodology in Engineering	16 th -17 th May-2008	Effective quality up-gradation assistance for technical education, New delhi at S.V National Institute of Technology, Surat, India
12.	Mathematics Meet-2008	28 th -29 th –March-2008	Gujarat University, Ahmdabad, India
13.	ATM School for Lecturers on “Real Analysis”	4 th -16 th June-2007	Ramanujan Center of Higher Mathematics, Allagappa University, Tamilnadu, India
14.	STTP on “Application orientation in Engineering Mathematics and Mathematical Modelling”	26 th -30 th Dec-2006	S.V National Institute of Technology, Surat, India
15.	International Conference of Indian Mathematical Society	27 th -30 th Dec-2010	S.V National Institute of Technology, Surat, India
16.	International Conference in honour of Late Prof.S.L Yadav	7 th -9 th January-2009	TIFR CAM, Bangalore
17.	International Conference on Computational Heat and Mass Transfer-2015 During 30th Nov-02nd Dec-2015	30 th Nov-02 nd Dec-2015	NIT, Warangal

Reviewer:

1. **Journal of Transport in Porous Media, Springer Publication,**
2. **Journal of Applied Fluid Mechanics.**
3. **Ain-shams Engineering Journal, Elseiver**
4. **Applied Mathematics and Information Sciences**
5. **Journal of Applied Mathematics and Computational Mechanics**

Training Courses / Conference/Seminar/Workshop Organised

S. No.	Title of Conference/ Seminar etc	Organised by SVNIT,Surat	Duration
1.	ISTE-SRMU Sponsored STTP on “ Application of Mathematics in Real World Problems ” during 18 th -22 nd March-2013	Coordinator: Dr.Ramakanta Meher	One week
2.	TEQIP Sponsored STTP on “ Current Trends in Computational Methods for PDE and Fluid Mechanics ” during 19 th -23 rd August-2013	Coordinator: Dr.Ramakanta Meher	One week
3.	TEQIP Sponsored STTP on “ Computational Flow and Transport: Modelling, Simulation and Algorithms ” during 24 th -28 th March-2014	Coordinator: Dr.Ramakanta Meher	One week
4.	ISTE-PTU Sponsored FDP on “ Mathematical Modelling in Science and Engineering ” During 23 rd -27 th June-2014	Coordinator: Dr.Ramakanta Meher	One week
5.	TEQIP Sponsored STTP on “ Computational Heat and Mass Transfer ” during 14 th -18 th December-2015.	Coordinator: Dr.Ramakanta Meher	One week
6.	One day Seminar on Mathematical Modelling and its application	Coordinator: Dr.Ramakanta Meher	One day
7.	Four Weeks Mathematics Training and Talent Search Programme-2013 during 20 th May-15 th June-2013	Coordinator: Dr.Ramakanta Meher	Four weeks

Expert Lectures at national or international conference/ seminar, etc.

S. No.	Title of Lecture/ Academic Session	Title of Conference/ Seminar etc	Organised by	international/ national
1	Chairman of Technical Session	International Conference on Computational Heat and Mass Transfer-2015 during 30 th Nov-02 nd Dec-2015	National Institute of Technology, Warangal	International

2	Differential Equation and Real world problems	ISTE-SRMU Sponsored STTP on “Application of Mathematics in Real World Problems” during 18 th -22 nd March-2013	S.V National Institute of Technology, Surat	National
3	Adomian Decomposition Method, a theoretical approach to Solve PDE	TEQIP Sponsored STTP on “Current Trends in Computational Methods for PDE and Fluid Mechanics” during 19 th -23 rd August-2013	S.V National Institute of Technology, Surat	National
4	Fluid dynamics in porous media	TEQIP Sponsored STTP on “Computational Flow and Transport:Modelling,Simulation and Algorithms” during 24 th -28 th March-2014	S.V National Institute of Technology, Surat	National
5	Application of Homotopy analysis method to real world problem	ISTE-PTU Sponsored FDP on “Mathematical Modelling in Science and Engineering” During 23 rd -27 th June-2014	S.V National Institute of Technology, Surat	National
6	Application of Adomian decomposition sumudu transform method to heat and mass transfer problems	TEQIP Sponsored STTP on “Computational Heat and Mass Transfer” during 14 th -18 th December-2015	S.V National Institute of Technology, Surat	National
7	Adomian Decomposition method	TEQIP Sponsored STTP on “Advanced ,Analytical and Numerical Techniques for Engineers and Scientist”	S.V National Institute of Technology, Surat	National
8	Modified Decomposition method a theoretical approach	Workshop on Computational Fluid Dynamics	S.V National Institute of Technology,Surat	National
9	Mathematical Modelling in porous media	One day Seminar on Mathematical Modelling and its application	S.V National Institute of Technology,Surat	National
10	Differential	ICAR Sponsored Summer school on	Anand Agriculture	National

	Transform Method and its application to agricultural problems.	Numerical Technique and its application to agricultural and food engineering problems	University, Anand	
11	Adomian Decomposition Sumudu Transform method for temperature distribution, fin efficiency and fin effectiveness of convective straight fins.	International conference on current Trends in PDEs: Theory and Computations During 28 th -30 th Dec-2015	South Asian University, New Delhi	International

Details of Foreign visit

1	King Abdullah University of Science and Technology, Thuwal, Saudi Arabia	5 th -12 th January-2012	To participate in KAUST-CIMPA School in "Applied Mathematics on Uncertainty Quantification"
2	African Institute of Mathematical Sciences, Muizenberg, Capetown, South Africa	13 th -18 th June-2011	To participate in CIMPA-UNESCO-MESR-MICINN-APSA-SOUTH AFRICA Research school on "Modelling and Simulation in Population Biology"
3	Chulalongkorn University, Bangkok, Thailand	22 nd May-04 th June-2011	To participate in CIMPA-UNESCO-MICINN-THAILAND Research school on "Spectral Triples and their applications"
4	Imperial college, London, UK	July 6 th -8 th , 2011	To participate and present a paper in World Congress of Engineering-2011 organized by the International Association of Engineers (IAENG)

Professional Body membership:

Life Member of the Orissa Mathematical Society
Life Member of ISTE
Life Member of IAENG (International association of Engineers)
Life Member of ISDE

(Dr. Ramakanta Meher)