



**4<sup>th</sup> International Conference  
on  
Recent Advances in Mathematical Sciences and its Applications (RAMSA-2020)  
(January 09-11, 2020)**

*Organized by*  
**Department of Mathematics  
Jaypee Institute of Information Technology  
A-10, Sector-62, Noida, U.P., India-201309**

**Conference Program**

**January 09, 2020**

- 09:30-10:00**      **Spot Registration and Distribution of Conference Kit**
- 10:00-10:40**      **Inauguration and Welcome Note**
- 10:40-11:00**      **High Tea**
- 11:00-11:45**      **Talk by Prof. Jichun Li, University of Nevada Las Vegas, USA**  
*“Mathematical Analysis and Finite Element Simulation of Invisibility Cloaks”*
- 11:45-12:30**      **Talk by Prof. Satya Deo, Harish-Chandra Research Institute, Allahabad, India**  
*“The Dimension Problem of Multivariate Splines”*
- 12:30-13:15**      **Talk by Prof. Melusi Khumalo, University of South Africa, SA**  
*“Numerical Methods for Cordial Volterra Integral Equation with Vanishing Delays”*
- 13:15-14:15**      **Lunch**

**Parallel Sessions**

<b>14:15-15:00</b>	<b>Speaker: Prof. Pawel Dlotko</b> <b>Affiliation: Swansea University, UK</b> <b>Title: <i>Applied topology in Action</i></b>	<b>Speaker: Prof. Khalil Ahmad</b> <b>Affiliation: Al- Falah University, Faridabad, India</b> <b>Title: <i>“Applications of Wavelets in Signal and Image Processing”</i></b>
<b>Paper Presentations</b>		
<b>15:00-16:00</b>	<b>Track A: <i>Calculus, Algebra, Analysis &amp; Approximations</i></b>	<b>Track B: <i>Mathematical Modelling &amp; Simulation</i></b>
<b>16:00-16:15</b>	<b>Tea Break</b>	
<b>16:15-17:30</b>	<b>Paper presentations continued...</b>	

- 19:30-20:30**      **Dinner**

## January 10, 2020

- 10:00-10:40      Talk by Prof. G. D. Veerappa Gowda, TIFR Centre for Applicable Mathematics, Bangalore, India  
*“Applications of Hamilton-Jacobi Equations in Shape from Shading”*
- 10:40-11:20      Talk by Prof. Pankaj Jain, South Asian University, Delhi, India  
*“Integral Transforms of Fourier Type and Their Generalizations”*
- 11:20-11:40      Tea/Coffee Break
- 11:40-12:20      Talk by Prof. Renu Chugh, M. D. University Rohtak, India  
*“Developments in Metric Fixed Point Theory”*
- 12:20- 13:00      Talk by Prof. Maithili Sharan, IIT Delhi, India  
*“Mathematical Modelling”*
- 13:00-14:00      Lunch
- 14:00- 14:40      Talk by Prof. R. C. Mittal, JIIT Noida, India  
*“Efficient Solutions of Sparse Systems of Linear Equations”*

Paper Presentations		
14:40- 15:20	Track C: <i>Continuum Mechanics, Differential Equation &amp; Numerical Analysis</i>	Track D: <i>Soft Computing, Fuzzy, Image Processing &amp; Operational Research</i>

- 15:20-15:35      Tea Break

Paper Presentations		
15:35-18:15	Track C: <i>Presentation continued...</i>	Track D: <i>Presentation continued...</i>

## January 11, 2020

- 10:00-10:40      Talk by Prof. Vir. V. Poha, Syracuse University, New York, USA  
*“Big Data through Wearable Devices – Challenges and Opportunities”*
- 10:40-11:00      Tea/Coffee Break
- 11:00-11:40      Talk by Prof. Danila Prikazchikov, Keele University, UK  
*“Long-wave propagation in multi-layered and multi-component strongly inhomogeneous structures”*
- 11:40-12:20      Talk by Prof. B. S. Panda, IIT Delhi, India

<b>Paper Presentations</b>	
<b>12:20-13:30</b>	<i>Miscellaneous</i>

**13:30-14:10**      **Valedictory Function**

**14:10-15:00**      **Lunch**

*Track A: Calculus, Algebra, Analysis & Approximations*

S.N.	Title ( <i>Author(s)</i> )
1	<b>Stability of Alpha-Fractal Functions Defined on Sierpinski Gasket</b> Vishal Agrawal , Tanmoy Som
2	<b>Banach Algebra Structure for Vector Measure Orlicz Spaces on Compact Groups</b> Manoj Kumar
3	<b>Fractal Dimensions of Generalized Fractional Integral of Continuous Function</b> M. M. Kharkongor
4	<b>Fractal Approximation via Rational Quadratic Trigonometric Fractal Interpolation Function</b> Kuldip Katiyar, Bhagwati Prasad
5	<b>Estimates of Some Conformable Fractional Integrodifferential Inequality</b> Deepak B. Pachpatte
6	<b>Pairwise Connectedness and Pairwise Total Disconnectedness in Bihypertopological Space</b> Harjot Singh, Sanjay Mishra
7	<b>Appell Functions <math>F_1, F_2, F_3</math> of Matrix Arguments</b> Pooja Singh
8	<b>Theorems on Double Kamal and Double Sumudu Transform</b> S. B. Kiwne, Sandip M. Sonawane
9	<b>Some Simple Derivations in <math>K[x_1, x_2, \dots, x_n]</math></b> Ashish Kumar Kesarwany, Vinay Wagh
10	<b>Characterizations of Lie Type Derivation on Primitive Rings with Idempotents</b> Aisha Jabeen
11	<b><math>I_2</math> –Statistical Limit Superior and <math>I_2</math>–Statistical Limit Inferior for Double Sequences</b> B. K. Ma'aji, A. M. Brono, A. G. K. Ali
12	<b>Approximation of Sum of Harmonic Progression</b> Aryan Phadke
13	<b>Number of Pythagorean Triples and Expansion of Euclid's Formula</b> Aryan Phadke
14	<b>Generalization of Dunkl Analogue of Szàsz Operators</b> Sheetal Deshwal
15	<b>Approximation Results of Q-Bivariate Kantorovich Discrete Beta Operator</b> Trapti Neer

16	<b>Copper Differential Geometry</b> Sameer, Pradeep Kumar Pandey
17	<b>Study of Epidemic Model using Conformable Fractional Calculus</b> Gajanan S Solanke, Deepak B Pachpatte
18	<b>On the Relation of a Distributive Lattice to its Lattice of n-Ideals</b> M. A. Latif
19	<b>Orlicz Figa-Talamanca Herz algebras and their *-representations</b> Rattan Lal
20	<b>Generalization of Enstrom/Makeya theorem</b> Majid Bashir Lone

**Track B: Mathematical Modelling, Simulation & Wave Propagation**

S.N.	Title (Author(s))
1	<b>Analysis of Heat Conduction inside the Calender Nip used in Textile Industry</b> Neelam Gupta, Neel Kanth
2	<b>Mathematical Model of Exploding Wire Technique used in Nanotechnology</b> Surendra Singh, S. C. Katyal, Navendu Goswami
3	<b>Exact Traveling Wave Solutions of Diffusive Predator Prey System using the First Integral Method</b> Mahima Poonia, K. Singh
4	<b>Exact Solutions of the Van der Waals Normal Form for Fluidized Granular Matter using the First Integral Method</b> Mahima Poonia, K. Singh
5	<b>Estimating Resonance Mode of Wave Induced Oscillations in Arbitrary Geometry</b> Rupali, Prashant Kumar, Rajni
6	<b>Boussinesq Model for Shallow Water Wave Propagation in Coastal Regions</b> Prashant Kumar, Vinita, Rajni
7	<b>Mathematical Modelling of Fingering Phenomenon using Homotopy Analysis Method</b> Juhi Kesarwani, Ramakanta Meher
8	<b>Exact Traveling Wave Solutions of the (2+1)-Dimensional Boiti-Leon-Pempinelli System using <math>(\frac{G}{G'})</math>-Expansion Method</b> Preeti Devi, K. Singh
9	<b>Mathematical Modeling of Population Forecasting in India</b> Shankar Lal
10	<b>Effect of Gravity and Magnetic Field on a Non-local Fiber-reinforced Thermo-diffusive Half Space</b> Rajesh Kumar, Seema Thakran, Amita Bhagat, Kapil Kumar Kalkal
11	<b>Numerical Based Solution of Nonlinear Volterra Integral Equations using Laplace Decomposition Method</b> T.T. Shone, Ashrita Patra, B.B. Mishra

*Track C: Continuum Mechanics, Differential Equations & Numerical Analysis*

S.N.	Title ( <i>Author(s)</i> )
1	<b>Comparative Study of Variable Thickness Functionally Graded Disc using Analytical and Numerical Approaches</b> Parth Mehta, Manoj Sahni, Lubhani Mishra
2	<b>Numerical Study on Flow of a Hybrid Nanofluid Due to a Vertical Thin Needle with Slip Effect</b> Siti Nur Alwani Salleh, Norrifah Bachok, Norihan Md Arifin, Fadzilah Md Ali
3	<b>Stagnation Point Flow Past a Quadratically Stretching/Shrinking Sheet in Nanofluid: Stability Analysis</b> Nur Syazana Anuar, Norrifah Bachok, Norihan Md Arifin, Haliza Rosali
4	<b>Revisited of Non-Orthogonal Stagnation Point Flow</b> Suman Sarkar
5	<b>Application of HAM to MHD Transport Phenomena in Squeezing Hybrid Nanoliquid inside Rotating Porous Plates with Thermal Radiation</b> Nisha Shukla, Puneet Rana
6	<b>The Numerical Solution of Boussinesq Equations for Shallow Water Waves</b> Prashant Kumar, Prashant Patel, Rajni
7	<b>Existence of Solutions for Fractional Langevin Equation Involving Generalized Caputo Derivative with Periodic Boundary Conditions</b> Amita Devi, Anoop Kumar
8	<b>Uniform Haar Wavelet Collocation Method for Three-point Boundary Value Problems</b> Swati, Karanjeet Singh, Mandeep Singh
9	<b>Analysis of Moored Ship Motions using 3-D Boundary Element Method inside Realistic Harbor</b> Gulshan, Prashant Kumar, Rajni
10	<b>An Approximate-Analytical Technique for Solving Time-Fractional Kuramoto–Sivashinsky equation</b> Ramakanta Meher
11	<b>Effect of Variable Gravity Condition on MHD Onset of Thermal Instability in Nanofluids Considering Various Boundaries</b> Vishal Gupta, Puneet Rana
12	<b>Triple Diffusion of Non-Newtonian Fluid under the Influence of Suspended Particles and Compressibility in Porous Medium</b> Dhruva Dixit, A. K. Aggarwal
13	<b>Extended <math>\exp(-\phi(\xi))</math>-Expansion Method for Generalized Breaking Soliton Equation in (3+1)-Dimensions</b> Pallavi Verma, Lakhveer Kaur
14	<b>Exact Solution of (2+1)-Dimensional Variable Coefficients Potential Kadomstev-Petviashvili (VCKP) Equation</b> Kuldeep, Lakhveer Kaur

15	<b>Numerical Modeling of Ion Size Effect on Osmotic Pressure in Cylindrical Nanochannels</b> Rajni, Prashant Kumar
16	<b>Numerical Analysis of Joukowski (T=12%) Airfoil by Spalart-Allmaras Turbulence Model at High Reynolds Number</b> Ravi Jain, Manoj Tripathi
17	<b>Dynamic Buckling of Clamped Circular FGM Plate Supported by Elastic Foundation</b> Neha Ahlawat
18	<b>MHD Double Diffusive Mixed Convective Boundary Layer Flow of Nanofluid past a Linear Stretching Vertical Plate</b> Nidhi, Lokendra Kumar
19	<b>A Review- Nanofluid Flows Past through a Stretching Sheet</b> Preeti Singh, Lokendra Kumar
20	<b>A New Legendre Collocation Technique to Solve the Two-dimensional Partial Differential Equation</b> Shubham Jaiswal
21	<b>Stability Analysis in Magnetic Nanofluids Containing Microorganisms</b> Monika Arora
22	<b>Effect of Non-Linear Thickness Variation of Non-Homogeneous Tapered Plate</b> Narinder Kaur
23	<b>Numerical and Analytical Analysis of Self Focused High Intense Laser beam in Plasma</b> Prashant Chauhan
24	<b>Heat and Mass Flows Visualization in Double-Diffusive Natural Convection in the Influence of Magnetic Field using Heat and Mass Lines Techniques</b> Durgesh Kushawaha, Sushil Yadav, Dwesh K. Singh
25	<b>Fractional Operator and Partial Differential Equations of Lauricella Functions</b> Manju Kashyap , Archana C
26	<b>Wavelet Transform on <math>L_{c,d}</math>-space</b> Anshu Mala, Abhishek Singh, Chandra Kant Goel
27	<b>Creep Stresses in Functionally Graded Thin Rotating Orthotropic Disk with Exponentially Variable Thickness and Density</b> Kajol Maheshwari, Sanjeev Sharma
28	<b>MHD Convective Heat Transfer in the Annulus between Concentric Cylinders Utilizing Nanoparticles and Non-Uniform Heating</b> Puneet Rana
29	<b>Reflection/Transmission of <math>qp(qsv)</math> Wave Through Orthotropic Medium Between Self-Reinforced and Orthotropic Half-Spaces</b> Pato Kumari, Neha
30	<b>Remarks on the Dynamic Response of Irregular Orthotropic Structures Subjected to a Moving Line Load</b> M. K. Pal, A. K. Singh

**Track D: Soft Computing, Fuzzy, Image Processing & Operational Research**

S.N.	Title ( <i>Author(s)</i> )
1	<b>Medical Image Enhancement using Fractional Derivatives</b> Anuj Bhardwaj, Anjali Wadhwa
2	<b>Connected Data Set based Virtual Machine Replication in Cloud Computing</b> Priti Kumari, Parmeet Kaur
3	<b>Solving Linear Optimization Problem with Max-Lukasiewicz Bipolar Fuzzy Relation Equations</b> Vijay Lakshmi Tiwari, Antika Thapar
4	<b>Total-Coloring of Fuzzy Graphs</b> Smriti Saxena, Antika Thapar and Richa Bansal
5	<b>Unreliable Priority Retrial Queues with Double Orbits and Discouraged Customers</b> Amita Bhagat
6	<b>Chaotic Gompertz Binary PSO for Global Optimization</b> Pinkey Chauhan, Millie Pant, Kusum Deep, Yograj Singh
7	<b>A Chaotic PSO for Process Parameter Optimization of Multi-Process Production in Manufacturing</b> Pinkey Chauhan, Kusum Deep, Millie Pant, Yograj Singh
8	<b>Visualization of Solution of Heat Equation by Different Interpolation Methods</b> Vikas Kumar Pandey, Himanshu Agarwal, Amrish Kumar Aggarwal
9	<b>DeepCap: A Deep Learning Model to Caption Black and White Images</b> Vaibhav Sharma, Rishabh Gulati, Chaitanya Singla, Sandeep Kumar Singh
10	<b>Optimize Cost Design of Water Distribution Networks using Gravitational Search Algorithm</b> Indu Bala, Anupam Yadav, Anshu Malhotra
11	<b>An Inventive Approach to Optimize Fuzzy Transportation Problem</b> Nirbhay Mathur, Pankaj Kumar Srivastava
12	<b>A New Knowledge Measure for Atanassov's Intuitionistic Fuzzy Sets</b> Priya Tanwar, Amit Srivastava
13	<b>Efficient Solutions of the Bi-Criterion Bi-Index Bulk Transportation Problem</b> Jyoti Yadav, Renu Tuli
14	<b>Efficient Solutions of a Bi-Criterion Routing Network Problem by Incorporating Lexicographic Minimization</b> Sakshi Verma, Renu Tuli
15	<b>Feasible Solution of the Time Table Assignment Problem to Faculty</b> Sunita Sharma, Renu Tuli
16	<b>Fuzzy Modelling for Machining System with Working Vacation and Threshold Recovery Policy</b> Rachita Sethi, Amita Bhagat, Deepika Garg
17	<b>Modified VIKOR Decision Making Algorithm Based on (R, S)-Norm Pythagorean Fuzzy</b>

	<b>Information Measures</b> Abhishek Guleria, Rakesh Kumar Bajaj
18	<b>Medical Image Segmentation using Modified Fuzzy C Mean Based Clustering</b> Dharmendra Kumar, Anil Kumar Solanki, Anil Ahlawat and Sukhnandan Malhotra
19	<b>Mammographic Image Segmentation with Modified FCM Based Clustering Algorithm</b> Shivankshi Tyagi, Sukhnandan Malhotra, Dharmendra Kumar, Vivek Singh Verma and Anuj Bhardwaj
20	<b>Specifications of the Multiplicative Method of Multiplayer Optimization</b> Malisa Zizovic, Dragan Pamucar
21	<b>Fuzzy Multiplicative Method of Multi-Criteria Optimization</b> Dragan Pamucar, Malisa Zizovic

**Track 5: Miscellaneous**

S.N.	Title ( <i>Author(s)</i> )
1	<b>A General Configuration for Phase Equalization</b> Jitendra Mohan, Bhartendu Chaturvedi, Atul Kumar
2	<b>A Proposed Proof of the Beal Conjecture</b> Abdulkadir Datti
4	<b>Dynamical Balanceness in a Signed Petri Net</b> Payal, Sangita Kansal
5	<b>A Threshold Secret Sharing Technique Based on Matrix Manipulation</b> Shardha Porwal and Sangeeta Mittal
6	<b>Adaptive Weight Luminosity and Contrast Enhancement of Mammograms</b> Shubh Saxena
7	<b>Coexistence Modeling of Wi-Fi and ZigBee in Hospital Centered Wireless Body Area Network</b> Kusum Grewal Dangi, Amita Bhagat, Supriya P. Panda
8	<b>A Pragmatic Rationale of the Bug Extrapolation Utilizing Entropy Measures</b> Anjali Munde
9	<b>A New Mutual Information Measure and Its Applications</b> Amit Srivastava and Priya Tanwar