CURRICULAM VITAE

Dr. Sunil Kumar

Head
Associate Professor
Highly Cited Researcher- 2021
Department of Mathematics,
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Message

- Help to Needy Peoples

- Never Harm to Other Peoples

- Maintain Honestly in any Circumstances

Personal Details

- Full Name   : Sunil Kumar

- Date of Birth   : 10 October, 1982

- Place of Birth   : Kanpur, UP

- Nationality   : Indian

- Sex   : Male

- Marital Status   : Married with Mrs. Smrita (Two Sons-Ujjwal and Aarsh)

- Language   : Hindi and English

Academic Qualifications

Ph.D.   (2011), Indian Institute of Technology, Banaras Hindu University, Varanasi 221005, India

Thesis: Numerical Solution of Generalized Abel Integral equation and Some Nonlinear Partial Differential Equations by Homotopy and operational Methods

Supervisor: Late Prof. Om P. Singh

M.Phil.   (2008)(1st Div.) in Mathematics from C.S.J.M. university Kanpur, UP, India

M.Sc.   (2006) (1st Div.) in Mathematics from V.S.S.D. college, Nawabganj Kanpur, UP, India

B.Sc.   (2003) (1st Div.) in Mathematics & Physics from V.S.S.D. college, Nawabganj Kanpur, UP, India

Computer Skills

MATHEMATICAL SOFTWARE	Mathematica, MATLAB
TYPESETTING SOFTWARE	LaTeX, Microsoft office

Course Taught

- Engineering Mathematics

- Advanced engineering Mathematics

- Higher Engineering Mathematics

- Fractional Calculus

- Special Functions, Ordinary Differential Equations, Integral Equations in M.Sc Classes

Research Involvements

1. Fractional Calculus

2. Mathematical Modeling

3. Epidemiological Modeling

4. Disease Dynamics

5. Numerical Analysis

6. Nonlinear Dynamics and Chaos Modeling

7. Mathematical Physics

8. Numerical Methods and Analytical Methods,

9. Analytical and Numerical Solutions of Nonlinear Problems Arising in Applied Sciences and Engineering.

10. Wavelet Methods for fractional differential equation

11. Chaos and Synchronization

Honors and Awards

- UGC-JRF (Rajiv Gandhi National Prime Minister Fellowship for Ph.D.): From July 2008 to June 2010.

- UGC-SRF (Rajiv Gandhi National Prime Minister Fellowship for Ph.D.): From July 2010 June 2011.

- GATE-2007 with All india rank 276th.

- International Travel support under DST (SERB).

- Name listed in **"World Ranking Top 2% Scientist"** in 2020 by Standford University, California, USA.

- **Highly Cited Researcher Award - 2021** by Clarivate powered by Web of Science.

- **Young Researcher Award** under **India Research Excellence- Citation Award 2021** Category by Clarivate, Web of Science.

- Name listed in "**World Ranking Top 2% Scientist**" in 2021 by Standford University, California, USA.

Research Ids

- **Scopus Author ID**: 55793190461

- **Web of Sciences Researcher ID**: P-7519-2015

- **ORCID ID**: https://orcid.org/0000-0003-0620-1068

Teaching and Research Experiences

- **Assistant Professor** in Department of Mathematics, Dehradun Institute of Technology, Dehradun Uttarakhand, India from Aug. 1, 2011 to March 28, 2012.

- **Assistant Professor** in Department of Mathematics, National Institute of Technology, Jamshedpur, 831014, Jharkhand India from April 13, 2012 to May 15, 2018.

- **Associate Professor** in Department of Mathematics, National Institute of Technology, Jamshedpur, 831014, Jharkhand India from May 13, 2018 to till date.

- **Adjunct Research Professor on Covid-19 research project** in Department of Mathematics and Sciences, College of Humanities and Sciences, Ajman University, Ajman, UAE from June 2020 to January 2021.

- **Adjunct Research Professor on Deadly disease models based research project** in Nonlinear Dynamics Research Center (NDRC), Ajman University, Ajman, UAE from February 2021 to till date.

Administrative Experience

- Member of Library Committee, NIT Jamshedpur since july 2013 to 2014.

- Member of Unnat Bharat Abhiyan cell, NIT Jamshedpur since 2017 to till date.

- Member of Departmental Purchase Committee since july 2013 to till date.

- Member of Seliction Committee of Ph.D. students since July 18, 2013 to till date.

- Member of Departmental Doctral Scrutiny Committee of Ph.D. since July 18, 2013 to till date.

- Performed duty in IIT Entrance Examination as Observer.

- Member of Fixed Asset Committee of NIT Jamshedpur April 17, 2018 to till date.

- Anti-ragging committee member of NIT Jamshedpur.

- Screening committee member of Department of Mathematics for appointment to the post of Assistant Professor in NIT Jamshedpur.

- ACoNFAR Committee member of non-teaching recruitment in NIT Jamshedpur.

- Head of Mathematics Department in NIT Jamshedpur to May 2020 to till date.

- ACoNFAR Committee member of recruitment of Registrar in NIT Jamshedpur.

M.Sc. Supervision

1. **Mr. Ratandeep Das**: New Fractional Derivative without Singular Kernel for Gas dynamic Equation (Awarded), 2015-2017.

2. **Mr. Ashutosh Tiwari**: The Caputo-Fabrizio Derivative for Fractional Telegraph Equation (Awarded), 2015-2017.

3. **Mr. Badal Kumar**: A Study of fractional Fokker Plank Equations with singular and non singular derivative (Awarded), 2016-2018.

4. **Miss Neha**: Wavelet method for linear fractional differential equation (Awarded), 2017-2019.

5. **Mr. Ashribad Kumar Rath**: Wavelet method for biological model (Awarded), 2019-2020.

6. **Mr. Abhishek Kumar Pal**: Non-linear dynamics and chaos (Awarded), 2019-2020.

7. **Mr. Vijay Kumar**: Fractional Calculus and its Applications (Ongoing), 2020-2021.

8. **Mr. Pallavi Sahare** : Fractional Calculus and its Applications (Ongoing), 2020-2021.

9. **Mr. Sandeep Kumar**: Fractional Calculus and its Applications (Ongoing), 2020-2021.

Ph.D. Supervision

1. **Dr. Amit Kumar**: Numerical Solutions for Fractional Partial Differential Equation Using Analytical Methods (Awarded) (Full Supervisor) (2017).

2. **Dr. Bhuvnesh Sharma**: A Study of Non-Linear Physical Models and Non-Newtonian Flow Phenomena Using Analytical Techniques (Awarded) (Co-Supervisor) (2019).

3. **Mr. Ranbir Kumar**: Wavelet Methods for Partial Differential Equations of Arbitrary Orders (Submitted) (Full Supervisor) (2017 to 2021)

4. **Mr. Saurath Ghosh**: Spectral Methods for fractional differential equations(Submitted) (Full Supervisor) (2018 to 2021)

5. **Mr. Ajay Kumar**: Study of Chaos and synchronization of fractional differential equations(Ongoing) (Full Supervisor) (2018 to till date)

6. **Mr. R.P. Chauhan**: Application of fractional calculus in Chaos theory(Ongoing) (Full Supervisor) (2018 to till date)

7. **Mr. Pawan Kumar Shaw**: Application of fractional calculus in non-linear dynamics and Chaos theory(Ongoing) (Full Supervisor) (2018 to till date)

8. **Mr. Praveen Kumar**: Wavelet methods on biological models (Ongoing) (Full Supervisor) (2019 to till date)

9. **Mr. Anil Kumar**: Wavelet methods on disease models (Ongoing) (Full Supervisor) (2020 to till date)

10. **Miss. Tasmia Roshan**: Non-linear dynamic and chaos disease models (Ongoing) (Full Supervisor) (2020 to till date)

11. **Miss. Khusbu Agarwal**: Study on disease models (Ongoing) (Full Supervisor) (2020 to till date)

Individual/Collaborative Ongoing Research Projects

National Projects

1. Title of Project - **Wavelet methods for nonlinear fractional partial differential equations with Engineering applications**
   Funding Agency - National Board for Higher Mathematics, Department of Atomic Energy, Government of India
   Duration of Project - 2017-2020
   Principal Investigator - Dr. Sunil Kumar
   Total Amount of Project - 13 Lakh
   Project No. - NBHM/R.P.69/2014/Fresh

2. Title of Project - **Spectral Methods for Fractional Models of mathematical physics with new non-local and non-singular Caputo-Fabrizio derivative**
   Funding Agency - Department of Science and Technology, SERB, Government of India,
   Duration of Project - 2018-2021
   Principal Investigator - Dr. Sunil Kumar
   Total Amount of Project - Rs. 22.12/- Lakh
   Project No. - EEQ2017000385

3. Title of Project - **A Study of Incomplete Special Functions and Their Applications**
   Funding Agency - TEQIP Collaborative Research Scheme
   Co-Principal Investigator - Dr. Sunil Kumar
   Total Amount of Project - Rs. 7.35/- Lakh

International Projects

1. Title of Project - **Mathematical modeling of the pandemic coronavirus (COVID-19) outbreak through fractional derivatives**
   Funding Agency - Department of Mathematics, School of Science, The University of Jordan, Amman 11942, Jordan
   Principal Investigator- Prof. Shaher Momani (School of Science, The University of Jordan), Prof. Samir Bashir Hadid (UAE)
   Co-Principal Investigator - Dr. Sunil Kumar
   Total Amount of Project - 10,500/- AED

2. Title of Project - **A modelling based study on infectious deadly diseases models by using fractional derivatives**
   Funding Agency - Nonlinear Dynamics Research Center (NDRC), Ajman University, Ajman, UAE, Amman 11942, Jordan
   Principal Investigator- Prof. Shaher Momani (Ajman University, Jordan), Prof. Samir Bashir Hadid (UAE)
   Co-Principal Investigator - Dr. Sunil Kumar

Citation Structure of My Research Papers

- Citations   : 6063

- h-Index   : 47

- i10-Index   : 116

Reviewer in Reputed International Journals

Elsevier Journals
Applied Mathematical Modelling, Computer and Mathematics with Applications, Applied Mathematics Latter, Powder Technology, Physica A,Measurement, Mathematical and Computer Modelling, Ain Sham Engineering Journal, Alexandria Engineering Journal, Applied Mathematics Computation, Chaos, Solitons & Fractals, Ocean Engineering, Journal of Egyptian Mathematical Society, Journal of Applied Mathematics and Mechanics, ScientiaIranica, Nonlinear Analysis: Real World Applications, Journal of Computational and Applied Mathematics, Applied Numerical Mathematics, Egyptian Journal of Basic and Applied Sciences, Journal of King Saud University - Science, Chinese Journal of Physics,

Springer Journals

Nonlinear Dynamics, Advances in Differences Equations, Boundary Value Problems, SpringerPlus, Proceedings of the National Academy of Sciences, India Section A: Physical Sciences, Neural Computing and Applications, Optical and Quantum Electronics, Mathematical Sciences, Journal of Optimization Theory and Applications, International Journal of Applied and Computational Mathematics, The European Physical Journal Plus, Differential Equations and Dynamical Systems, Advances in Computational Mathematics, ActaBiotheoretica, Journal of Applied and Industrial Mathematics, National Academy Science Letters, Pramana, Numerical Algorithms, Neural Computing and Applications, Modeling Earth Systems and Environment, Journal of Thermal Analysis and Calorimetry, Journal of Applied Mathematics and Computing, Indian Journal of Physics, Engineering with Computers, Journal of the Brazilian Society of Mechanical Sciences and Engineering,

Wiley, De Gruyter, World Scientific, MDPI and Taylor & Francis Journals

Numerical Methods for Partial Differential Equations, Mathematical Methods in the Applied Sciences, Nonlinear Engineering-Modelling and Application, Waves, Wavelets and Fractals, ZeitschriftfürNaturforschung A, Open Mathematics, Open Physics, International Journal of Nonlinear Sciences and Numerical Simulation, International Journal of Computer Mathematics, Applicable Analysis, Cogent Mathematics, International Journal for Computational Methods in Engineering Science & Mechanics, Journal of Statistical Computation and Simulation, Journal of Circuits, Systems, and Computers, American Journal of Mathematical and Management Sciences, Arab Journal of Basic and Applied Sciences, Computer Methods in Biomechanics and Biomedical Engineering, Fractals, Computation,

Other SCI/SCIE/Scopus Journals

Advances in Mechanical Engineering, Advances in Applied Mathematics and Mechanics, Journal of Economic Studies, International Journal of Numerical Methods for Heat and Fluid Flow, British Journal of Mathematics & Computer Science, Application and Applied Mathematics: An International Journal, Walailak Journal of Science and Technology, Communication Numerical Analysis, Mathematical Modelling and Analysis, FundamentalInformaticae, International journal of Mathematical Archive, Far East Journal of Applied Mathematics, QScience Connect, International journal of Physical Sciences, International journal of Nonlinear Science, International journal of Applied Mathematics Computation, Maejo International Journal of Science and Technology, Mathematical Modelling of Natural Phenomena, Engineering Computations, Caspian Journal of Mathematical Sciences, Applied Mathematics and Nonlinear Sciences, Chaos, Frontier in Physics,

Editorial Experience in International Journals

Guest Editor for Special Issue in International Journals

1. Journal: Walailak Journal of Science and Technology
   Topical issue: Mathematics and Mathematical models

2. Journal: American Journal of Computational and Applied Mathematics
   Topical issue: Analytical methods for fractional modelling on physical problems

3. Journal: Open Physics (SCIE-IF-1.085)
   Topical issue: Adv. Computational Modelling of Nonlinear Physical Phenomena

4. Enzyme Research (Scopus)
   Topical issue: Advances in the computational analysis of Enzyme Reactions

5. Journal: Advances in Mechanical Engineering (SCIE-IF-0.766)
   Topical issue: Computational methods for fractional-order and Fractal-order models in Mechanical Engineering

6. Journal: Open Physics (SCIE-IF-1.005)
   Topical issue: Future Challenges of Advanced Computational Modeling on Nonlinear Physical Phenomena

7. Journal: Journal of Function Spaces (SCIE-IF-1.005)
   Topical issue: q-Analysis and Its Applications

8. Journal: Journal of Mathematics (SCIE-IF-0.712)
   Topical issue: Numerical Methods for the Solution of Nonlinear Differential Equations

9. Journal: Alexandria Engineering Journal (SCI-IF-2.460)
   Topical issue: Advanced Computational Fractional Dynamics: Theory, Methods and Applications

10. Journal: Computer Modeling in Engineering and Sciences (SCI-IF-0.805)
    Topical issue: Mathematical Aspects of Computational Biology and Bioinformatics

11. Journal: Computers, Materials and Continua (SCI-IF-4.89)
    Topical issue: Recent Advances in Fractional Calculus Applied to Complex Engineering Phenomena

12. Journal: Advances in Mathematical Physics (SCIE-IF-1.130)
    Topical issue: Fractional Modelling of Transport Problems in Fluid Mechanics and Heat-mass Transfer

Editor Position in SCI/SCIE/Scopus/Other International Journals

1. Topics Editor in 'Entropy" (SCI-2.494)

2. Editor in "Beni-Suef University Journal of Basic and Applied Sciences (Springer)"

3. Editor in "Application and Applied Mathematics: An International Journal" (ESCI)

4. Editor in "Italian Journal of Pure and Applied Mathematics" (SCImago)

5. Editor in "Progress in Fractional Differentiation and Applications" (Scopus)

6. Editor in "Walailak Journal of Science and Technology" (Scopus)

7. Editor in "Applied Mathematics and Information Sciences Letters"

8. Editor in "International Journal of Software and Applied Mathematics"

9. Editor in "Numerical and Computational Methods in Sciences and Engineering"

10. Editor in "American Journal of Applied Mathematics and Statistics"

11. Editor in "Engineering, Technology & Applied Science Research"

12. Editor in "Mathematics in Natural Science"

13. Editor in "The Turkish Online Journal of Educational Technology"

14. Editor in "Communication in Numerical Analysis"

15. Editor in "Malaya Journal of Matematik"

16. Editor in "International Journal of Modern Theoretical Physics"

17. Editor in "International Journal of Modern Applied Physics"

18. Editor in "International Journal of Modern Mathematical Sciences"

19. Editor in "Journal of Applied Computational & Mathematics"

20. Editor in "Journal of Physical Mathematics"

21. Editor in "Journal of Advanced Research in Applied Mathematics and Statistics"

22. Editor in "i-manager's Journal on Mathematics"

23. Editor in "New Trends in Mathematical Sciences"

24. Editor in "Journal of Abstract and Computational Mathematics"

25. Editor in "Research and Reviewes: Journal of Statistics and Mathematical Sciences"

26. Editor in "International Journal of Mathematics and Its Applications"

27. Editor in "International Journal of Computer Systems"

28. Editor in "International J. Applied Computational Science and Mathematics"

29. Editor in "Global Journal of Mathematics"

30. Editor in "Journal of Basic and Applied Scientific Research"

31. Editor in "Fractional Calculus and Applications Group"

32. Editor in "Journal of Global Research in Mathematical Archives"

33. Editor in "IOSR Journal of Mathematics"

34. Editor in "Engineering, Technology & Applied Science Research"

35. Editor in "Journal of Engineering, Computers and Applied Sciences"

36. Editor in "International Journal of Pure and Computational Mathematics"

37. Editor in "International Journal of Mathematics and Statistics"

38. Editor in "Journal of Applied Mechanical Engineering"

39. Editor in "US Open Mathematics and Physics Journal"

40. Editor in "Journal of Scientific and Engineering Research"

41. Editor in "Global Journal of Physics"

42. Editor in "International Journal Engineering Sciences and Mathematics"

43. Editor in "International Journal of Advanced Mathematics and Physics"

44. Editor in "International Journal of Advanced Material Science"

45. Editor in "Emerging Science Journal"

46. Editor in "Turkish Journal of Inequalities"

Ex-Editor Position in SCI/SCIE/Scopus/Other International Journals

1. Editor in "Open Physics" (SCIE-IF-1.085) (2016-2018)

2. Editor in "Maejo International Journal of Science and Technology" (SCIE-IF-0.456)

3. Editor in "SpringerPlus" (Springer) (SCIE)

4. Editor in "Engineering, Technology & Applied Science Research"

5. Editor in "Studies in Nonlinear Sciences"

6. Editor in "International J. of Advance in Applied Mathematics & Mechanics" (2015 to 2018)

7. Editor in "Facta Universitatis: Series Mathematics and Informatics" (2015-2018)

8. Editor in "Operation Research and Application: An International Journal"

9. Editor in "Nonlinear Science Latter A"

Published Research Papers in International Journals

1. **Sunil Kumar** (with Om P. Singh), Numerical Inversion of the Abel Integral Equation using Homotopy Perturbation Method, Zeitschrift fur Naturforschung, 65a, 677-682 (2009) (Germany) **(SCI)**.

2. **Sunil Kumar** (with Om P. Singh and S. Dixit), An analytic algorithm for solving system of Fractional Differential equations, Journal of Modern Methods in Numerical Methods, 1(1), 12-26 (2010) (Egypt) .

3. **Sunil Kumar** (with Om P. Singh and S. Das), Solutions of Nonlinear Second Order Multi-point Boundary Value Problems by Homotopy Perturbation Method, Applications and Applied Mathematics: An International Journal, 5, 1592-1600 (2010) (USA)**(ESCI)**.

4. **Sunil Kumar** (with Om P. Singh and Sandeep Dixit), An analytic algorithm for Generalized Abel Integral Equation, Applied Mathematical Sciences, (5), 5, 223-232 (2011) (Bulgaria).

5. **Sunil Kumar** (with Om P. Singh and Sandeep Dixit), Generalized Abel Inversion Using Homotopy Perturbation Method, Applied Mathematics, 2, 254-257 (2011) (USA).

6. **Sunil Kumar** (with S. Dixit, Rajesh K. Pandey and Om P. Singh), Solution of Generalized Abel Integral equation by using Almost Bernstein Operational Matrix, American Journal of Computational Methods, 1, 226-234 (2011) (USA).

7. **Sunil Kumar** (with M. Khan, M.A. Gondal), Novel Homotopy Transform Method Algorithm for Linear and nonlinear System of Partial Differential Equations, World Applied Sciences Journal, 12(12), 2352-2357(2011) (Dubai).

8. **Sunil Kumar** (with Om P. Singh and Sandeep Dixit), Homotopy Perturbation Method for Solving System of Generalized Abel's Integral Equations, Applications and Applied Mathematics: An International Journal, 5(10), 2009-2024 (2011) **(ESCI)**.

9. **Sunil Kumar** (with M. khan and M. A. Gondal), A new analytical approach to solve exponential stretching sheet problem in fluid mechanics by variational iterative Pade method, *The Journal of Mathematics and Computer Sciences, 3(2) 135-144 (2011)* (Poland)**(SCI)**.

10. **Sunil Kumar** (with K. Vishal and S. Das), Application of Homotopy Analysis method for fractional Swift Hohenberg equation- Revisited, Applied Mathematical Modelling, 36 (8), 3630-3637(2012) (Elsevier) (USA) (USA) **(SCI)**.

11. **Sunil Kumar** (with Yasir Khan, Ahmet Yildirim), A Mathematical Modelling arising in the Chemical system and its approximate Numerical solution, Asia Pacific Journal of Chemical Engineering, 7 (6), 835-840, (2012) (Taiwan) (Wiley) **(SCI)**.

12. **Sunil Kumar** (with Y. Khan, Naeem Faraz, Ahmet Yildirim), A coupling Method of homotopy method and Laplace transform for fractional modells, U.P.B. Sci. Bull., Series A Appl. Math. Phys, 74 (1), 57-68 (2012) (Romania) **(SCIE)**.

13. **Sunil Kumar** (with Jianping Zhao, Bo Tang and Yan Ren Hou), The extended fractional sub-equation method for nonlinear fractional differential equations, Mathematical Problems in Engineering, (2012) Volume 2012, Article ID 924956, 11 pages, doi:10.1155/2012/924956 (IF: 1.305) **(SCIE)**.

14. **Sunil Kumar** (with M. Khan and M. A. Gondal), A new analytical solution procedure for nonlinear integral equations, Mathematical and Computer Modelling, 55(7), 1892-1897 (2012) (Elsevier) (USA) (IF: 1.420) **(SCI)**.

15. **Sunil Kumar** (with Wenbin Zhang and Jiangbo Zhou), Symmetry Reduction, Exact Solutions, and Conservation Laws of the ZK-BBM Equation, ISRN Mathematical Physics, 2012(2012), Article ID 837241, 9 pages doi:10.5402/2012/ 837241 **(SCIE)**.

16. **Sunil Kumar** (with Sandeep Dixit and Om P. Singh), A stable numerical inversion of Generalized Abel Integral Equation, Applied Numerical Mathematics, 62(5), 567-579 (2012) (Elsevier) (USA) **(SCI)**.

17. **Sunil Kumar** (with H. Jafari, K. Sayevand, L. Wei), A Analytical Solution of Black-Scholes Option Pricing Equation by using Laplace transform, Journal of fractional calculus and Applications, 2(8), 1-9 (2012) (Egypt).

18. **Sunil Kumar** (with H. Kocak, A. Yildirim), A fractional model of gas dynamics equation by using Laplace transform, Zeitschrift fur Naturforschung, 67a, 389-396 (2012) (Germany) **(SCI)**.

19. **Sunil Kumar** (with A. Yildirim, Y. Khan, W. Leilei), A fractional model of diffusion equation by using Laplace transform, Science Irantica, 19 (4), 1117-1123 (2012) (Elsevier) (Iran) **(SCIE)**.

20. **Sunil Kumar** (with L. Wei, X. Zhang), Numerical study based on an implicit fully discreate local discontinuous Galerkin method for time fractional coupled Schrodinger system, Computer and Mathematics with application, 64 (8), 2603-2615 (2012) (USA) (Elsevier) **(SCI-IF 3.476)**.

21. **Sunil Kumar** (with L. Wei and Yinnian He), Numerical study based on an implicit fully discreate local discontinuous Galerkin method for time fractional KdV- Burgers-Kuramoto equation, JAMM Journal of Applied Mathematics and Mechanics, 93 (1), 14-28 (2013) (Wiley) **(SCI)**.

22. **Sunil Kumar** (with M. P. Tripathi and Om P. Singh), A fractional model of Harry Dym equation and its approximate solution, Ain Shams Engineering Journal, 4,111-115 (2013) (Elsevier) (Egypt) **(SCI-IF 3.18)**.

23. **Sunil Kumar** (with S. Kazem and S. Abbasbandy), Fractional-order Legendre functions for solving fractional-order differential equations, Applied Mathematical Modelling, 37 (7), 5498-5510 (2013) (Elsevier) (USA) **(SCI-IF 5.129)**.

24. **Sunil Kumar** (with Jiangbo Zhou, Lixin Tian, Wenbin Zhang), Peakon–antipeakon interaction in the Dullin-Gottwald-Holm equation, Physics Letters A, 377, 1233-1238 (2013) (Elsevier) **(SCI-IF 2.654)**.

25. **Sunil Kumar** (with Jagdev Singh and Devendra Kumar), New treatment of fractional Fornberg-Whitham equation via Laplace transform, Ain Sham Engineering Journal, 4, 557-562 (2013) (Elsevier) (Egypt) **(SCI-IF 3.18)**.

26. **Sunil Kumar** (with Jagdev Singh, Devendra Kumar), A new reliable algorithm for solving discontinuity problem in nanotechnology, *Science Irantica, 20(3) pp. 1059-1062 (2013)* (Elsevier) **(SCIE)**.

27. **Sunil Kumar** (with Wenbin Zhang, Jiangbo Zhou), On the support of solutions to a two-dimensional nonlinear wave equation, Journal of Mathematics, Volume 2013 (2013), Article ID 578094, 4 pages.

28. **Sunil Kumar**, A Numerical Study for Solution of Time Fractional Nonlinear Shallow-Water Equation in Oceans, Zeitschrift fur Naturforschung A, 68 a, 1-7, (2013) (Germany) **(SCI)**.

29. **Sunil Kumar** (with M. M. Khader and S. Abbasbandy), New homotopy analysis transform method for solving the discontinued problems arising in nanotechnology, Chinese Physics B 22(11), 1-5, (2013). **(SCI)**.

30. **Sunil Kumar**, Numerical Computation of Time-Fractional Fokker-Planck Equation Arising in Solid State Physics and Circuit theory, Zeitschrift fur Naturforschung, 68a, 1-8 (2013) (Germany) **(SCI)**.

31. **Sunil Kumar**, A new fractional modelling arising in Engineering Sciences and its analytical approximate solution, Alexandria Engineering Journal, 52(4), 813-819 (2013) (Elsevier) **(SCI)**.

32. **Sunil Kumar** (with M. M. Khader), An accurate numerical method for solving the linear fractional Klein-Gordon equation, Mathematical Method in Applied Sciences, 37 (18), 2972-2979 (2014) **(SCI-IF 2.321)**.

33. **Sunil Kumar** (with Rajnesh Kumar), A new fractional modelling on Susceptible-Infected-Recovered equations with constant vaccination rate, Nonlinear Engineering- Modelling and Application, 3(1), 11-19 (2014) **(SCImago)**.

34. **Sunil Kumar**, An analytical algorithm for nonlinear fractional Fornberg-Whitham equation arising in wave breaking based on a new iterative method, Alexandria Engineering Journal, Elsevier, 53(1), 225-231 (2014) **(SCI-IF 3.732)**.

35. **Sunil Kumar** (with Jagdev Singh and Devendra Kumar), A fractional model of nonlinear shock wave equation arising gases, Nonlinear Engineering- Modelling and Application, 3(1), 43-50 (2014) **(SCImago)**.

36. **Sunil Kumar** (with Jagdev Singh and Devendra Kumar), Analytic and approximate solutions of space and time fractional telegraph equation via Laplace transform, Walailak Journal of Sciences and Technology, 11(8), 711-728, (2014) (IF: 0.1086) **(Scopus)**.

37. **Sunil Kumar** (with Naeem Faraz, Khosro Sayevand), A fractional model of Bloch equation in Nuclear magnetic Resonence and its approximate solution, Walailak Journal of Sciences and Technology, 11(4), 273-285, (2014) (Thailand) (IF: 0.1086) **(Scopus)**.

38. **Sunil Kumar** (with Devendra Kumar, Jagdev Singh and Saurabh Singh), New Homotopy Analysis Transform Algorithm to Solve Volterra Integral Equation, Ain Sham Engineering Journal, (2014) 5(1), 243-246 (2014) (Elsevier) **(SCI-IF 3.18)**.

39. **Sunil Kumar** (with R. Pourgholi and A. Esfahani),A numerical algorithm for solving an inverse semilinear wave problem, International Journal of Computing Science and Mathematics, 5 (1), (2014).

40. **Sunil Kumar**, A New Efficient Algorithm to Solve Non-Linear Fractional Ito Coupled System and Its Approximate Solution, Walailak Journal of Sciences and Technology, 11(12), 1057-1067 (2014) (Thailand) **(Scopus)**.

41. **Sunil Kumar**, A new mathematical modelling for nonlinear wave in hyperlastic rod and its approximate solution, Walailak Journal of Sciences and Technology, 11(11), 965-973, (2014) (Thailand) **(Scopus-IF-0.138)**.

42. **Sunil Kumar** (with Devendra Kumar and Jagdev Singh), Numerical Computation of Non-linear Fractional Zakharov- Kuznetsov Equation arising in Ion-Acoustic Wave, Journal of the Egyptian Mathematical Society, 22(3)373-378, 2014 (Elsevier).

43. **Sunil Kumar** (with M. M. Rasshidi and L. Shamekhi), Parametric Analysis of Entropy Generation in Off-Centered Stagnation Flow towards a Rotating Disc with the Keller-Box Method solution, Nonlinear Engineering- Modelling and Application, 3(1), 27-41, (2014) **(SCImago-IF-0.444)**.

44. **Sunil Kumar** (with Deepak Kumar, S. Abbasbandy, M. M. Rashidi), Analytical Solution of fractional Navier-Stokes equation by using Modified Laplace Decomposition Method, Ain Sham Engineering Journal, , 5(2), 569-574 (2014) (Elsevier) (IF-0.44) **(SCI-IF-3.18)**.

45. **Sunil Kumar**, A new analytical modelling for telegraph equation via Laplace transform, Applied Mathematical Modelling, 38(13), 3154-3163 (2014) (Elsevier) **(SCI-IF-5.129)**.

46. **Sunil Kumar**, A new fractional analytical approach for treatment of system of physical models by using Laplace Transform, Science Irantica, 21(5), 1693-1699, (2014) **(SCIE)**.

47. **Sunil Kumar** (with Devendra Kumar and U. S. Mahabaleswar), A new adjustment of Laplace transform for fractional Bloch equation in NMR flow, Application and Applied Mathematics: An International Journal (AAM), 9(1) 201-216 (2014) **(ESCI)**.

48. **Sunil Kumar** (with Nagma Irfan and S. Kapoor), Bernstein Operational Matrix Approach for Integro-Differential Equation Arising in Control theory and Astronomy, Nonlinear Engineering- Modelling and Application, 3(2), 117-123 (2014) **(SCImago-IF-0.313)**.

49. **Sunil Kumar** (with M.M. Rashidi, A. Hosseini, I. Pop and N. Freidoonimehr), Comparative Numerical Study of Single and Two Phase Models of Nano fluid Heat Transfer in a Wavy Channel, Applied Mathematics and Mechanics (English Edition) (2014), 35, (7), 831-848 **(SCI-IF-2.866)**.

50. **Sunil Kumar** (with Vineet K. Srivastava, Mukesh K. Awasthi), Numerical approximation for HIV infection of CD4+T cells mathematical model, Ain Shams Engineering Journal, 5(2), 625-629 (2014) (Elsevier) (IF-0.44) **(SCI-IF-3.18)**.

51. **Sunil Kumar** (with Devendra Kumar), Fractional Modelling for BBM-Burger Equation by Using New Homotopy Analysis Transform Method, Journal of the Association of Arab Universities for Basic and Applied Sciences, 16, 16-20, 2014, (Elsevier) (Bahrain).

52. **Sunil Kumar** (with S. Kalaiselvi and L. Rajendran), Analytical expression for concentration and sensitivity of a thin film semiconductor gas sensor, Ain Sham Engineering Journal, 5(3) 885-893, (2014) (IF-0.44) **(SCI-IF-3.18)**.

53. **Sunil Kumar** (with V. K. Srivastava, M. K. Awasthi), Analytical approximations of two and three dimensional time fractional telegraph equations by reduced differential transform method, Egyptian Journal of Basics and Applied Sciences, 1(1), 60-66 (2014) (Elsevier).

54. **Sunil Kumar** (with Mohsen Alipour, Dumitru Baleanu and Kobra Karimi), Variational Iteration Method for Generalized Pantograph Equation with Convergence Analysis, Discontinuity, Nonlinearity, and Complexity, 3(2) (2014) 109-121.

55. **Sunil Kumar** (with Jagdev Singh, Devendra Kumar), Numerical computation of Klein-Gordon equations arising in quantum field theory by using new homotopy analysis transform method, Alexandria Engineering Journal, 53(2), 469-474, (2014) (Elsevier) **(SCI-IF-3.732)**.

56. **Sunil Kumar** (with Devendra Kumar and Jagdev Singh), Analytical study for singular system of transistor circuits, Alexandria Engineering Journal, 53(2), 445-448 (2014) (Elsevier) **(SCI-IF-3.732)**.

57. **Sunil Kumar** (with Vineet Kumar Singh and Amit Kr, Awasthi), Two dimensional time fractional order biological population model, Egyptian Journal of Basics and Applied Sciences, 1(1), 71-76 (2014) (Elsevier).

58. **Sunil Kumar** (with Mohammad Mehdi Rashidi), New Analytical Method for Gas Dynamics Equation Arising in Shock Fronts, Computer Physics Communications, 185 (7), 1947-1954, (2014)**(SCI-IF-4.39)**.

59. **Sunil Kumar** (with P. Agrawal, S. Jain, M. Chand and S. K. Dwivedi), Bessel functions associated with Saigo- Maeda fractional derivatives operators, Journal of Fractional Calculus and Applications, 5(2), 96-106, (2014).

60. **Sunil Kumar** (with Vineet Kumar Singh and Amit Kr, Awasthi), Reduced Differential Transform Method for solving (1+n) - Dimensional Burgers' equation, Egyptian Journal of Basics and Applied Sciences, 1(2), 115-119 (2014) (Elsevier).

61. **Sunil Kumar** (with Dinesh Kumar), Fractional Calculus of the generalized Mittag-Leffler type function, International Scholarly Research Notices, Volume 2014 (2014), Article ID 907432, 5 pages

62. **Sunil Kumar** (with V. Meena, K. Indira and L. Rajendran), A new mathematical model for effectiveness factors in biofilm under toxic conditions, Alexandria Engineering Journal, 53(4), (2014) (Elsevier) (IF-0.44) **(SCI-3.732)**.

63. **Sunil Kumar** (with Devendra Kumar and Jagdev Singh), Numerical computation of fractional Black-Scholes equation arising in financial market, Egyptian Journal of Basic and Applied Sciences (2014), 917-928 (Elsevier).

64. **Sunil Kumar** (with Devendra Kumar, Jagdev Singh and A. Singh), Analytical Solution of Abel Integral Equation Arising in Astrophysics via Laplace Transform, Journal of the Egyptian Mathematical Society, 23(1) 102-107 (2015), (Elsevier).

65. **Sunil Kumar** (with Devendra Kumar, Jagdev Singh), A new fractional model of Navier-Stokes equation arising in unsteady flow of a viscous fluid, Journal of the Association of Arab Universities for Basic and Applied Sciences, 17, 14-19 (2015) (Elsevier).

66. **Sunil Kumar** (with Jagdev Singh and Devendra Kumar), Numerical computation of fractional multi-dimensional diffusion equations by using a modified homotopy perturbation method, Journal of the Association of Arab Universities for Basic and Applied Sciences, 17, 20-26, (2015) (Elsevier).

67. **Sunil Kumar** (with Rasi Muthuramalingam and L. Rajendran), Analytical expressions for the concentration of nitric oxide removal in the gas and biofilm phase in a biotrickling filter, Journal of the Association of Arab Universities for Basic and Applied Sciences, 18, 19-28 (2015), (Elsevier).

68. **Sunil Kumar** (with D Kumar and J Singh), Analytical modeling for fractional multi-dimensional diffusion equations by using Laplace transform, Communication in Nonlinear Analysis, volume 2015, No. 1 (2015), 16-29, 14 pages.

69. **Sunil Kumar** (with D. Kumar, J. Singh, Sushila and B. P. Singh), Numerical computation of nonlinear shock wave equation of fractional order, Ain sham Engineering Journal, 6(2), 605-611 (2015) (Elsevier) (IF-0.44) **(SCI-IF-3.18)**.

70. **Sunil Kumar** (with Amit Kumar and Mukesh Singh), Residual power series method for fractional Sharma-Tasso-Olever equation, Communication in Nonlinear Analysis, (2015), No. 2 (2015) 1-10, (10 pages).

71. **Sunil Kumar** (with Xiang-bao Yin and Devendra Kumar), A modified homotopy analysis method for solution of fractional wave equations, Advances in Mechanical Engineering, 7(12), 1-8, (2015) (IF- 0.787) **(SCIE-IF-1.316)**.

72. **Sunil Kumar** (with Jing-Jing Yao, Amit Kumar), A fractional model to describing the Brownian motion of particles and its analytical solution, Advances in Mechanical Engineering, 7(12), 1-11, (2015) **(SCIE-IF-1.316)**.

73. **Sunil Kumar** (with Devendra Kumar and Jagdev Singh), Fractional modelling arising in unidirectional propagation of long waves in dispersive media, Advances in Nonlinear Analysis, (DOI: 10.1515/anona-2013-0033), (2016) (IF-1.258) **(SCI-IF-4.279)**.

74. **Sunil Kumar** (with M. M. Khader, S. Abbasbandy & J. Zhou), New Fractional Homotopy Analysis Transform Method for Solving the Physical Model of Fractional Heat-Like, Walailak Journal of Science and Technology, 13, (2016), (Thailand) **(Scopus-IF-0.146)**.

75. **Sunil Kumar** (with V. Meena, L. Rajendran, P.G. Jansi Rani), Mathematical modeling of gas phase and biofilm phase biofilter performance, Egyptian journal of basic and applied sciences, 3(1), 94-105, (2016).

76. **Sunil Kumar** (with Amit Kumar, Dumitru Baleneu), Two analytical method for time -fractional nonlinear coupled Boussinesq-Burger equations arises in propagation of shallow water waves, Nonlinear Dynamics, 85(2), 699-715, (2016) **(SCI-IF 5.022)**.

77. **Sunil Kumar** (with Ioannis K. Argyros, Santhosh George), Local Convergence of a multi-point family of high order methods in Banach spaces under Holder continuous derivative, Nonlinear Engineering, (Accepted) (2016) **(SCImago-IF-0.313)**.

78. **Sunil Kumar** (with Mohd. Naseem, Mukesh Singh, Amit Kumar), Homotopy analysis transform algorithm to solve time-fractional foam drainage equation, Nonlinear Engineering 5(4) (2016) **(SCImago-IF-0.444)**.

79. **Sunil Kumar** (with Amit Kumar), Residual power series method for fractional Burger types equations, Nonlinear Engineering 5(4) (2016) **(SCImago-IF-0.444)**.

80. **Sunil Kumar** (with George A. Anastassiou, Ioannis K. Argyros), Monotone convergence of extended iterative methods and fractional calculus with applications, Fundamenta Informmaticae, 151, 1-4 (2017) **(SCI-IF-0 1.333)**.

81. **Sunil Kumar** (with Chong Li, Amit Kumar, Xiao-Jun Yang),On the approximate solution of nonlinear time-fractional KdV equation via modified homotopy analysis Laplace transform method, Journal of Nonlinear Science and Application, 9 (2016), 5463-5470 **(SCIE)**.

82. **Sunil Kumar** (with Yu Zhang Amit Kumar, Dumitru Baleanu, Xiao-Jun Yang), Residual power series method for time-fractional Schrodinger equations, Journal of Nonlinear Science and Application, 5821-5829 (2016) **(SCIE)**.

83. **Sunil Kumar** (with Jagdev Singh, Ram Swroop, Devendra Kumar) Numerical computation of fractional partial differential equations arising in physics, Journal of the Nigerian Mathematical Society 35(3) (2016).

84. **Sunil Kumar** (with Z.H. Guoa, O, Acan), Simudu Transform series expansion method for solving the local fractional laplace equation in fractal thermal problems, Therm. Sci 20, 739-742 (2016) **(SCI-IF-1.541)**.

85. **Sunil Kumar** (with Amit Kumar, Z. Odibat), A nonlinear fractional model to describe population dynamics of two interacting species, Mathematical Methods in Applied Sciences. 40(11) (2017) 4134-4118 **(SCIE-IF-2.321)**.

86. **Sunil Kumar** (with Amit Kumar), A modified analytical approach for fractional Discrete KdV equations arising in particle vibrations, Proceeding of the National Academy of Sciences, INDIA Section A:Physical Sciences 40(11) 4134-4148 (2017) **(SCIE-IF-1.544)**.

87. **Sunil Kumar** (with Emile Franc Doungmo Goufo) Shallow water wave models with and without singular kernel: Existence, uniqueness and similarities, Mathematical Problem in Engineering volume (2017) Article id 4609834,9 pages **(SCIE-IF-1.305)**.

88. **Sunil Kumar** (with Amit Kumar, Ioannis K. Argyros), A new analysis for the Keller Segel model of fractional order, Numerical Algorithims, 75(1) 213-228 (2017) **(SCIE-IF-3.041)**.

89. **Sunil Kumar** (with Zaid Odibat, Nabil Shawagfeh, Ahmed Alsaedi Tasawar Hayat), A study on the convergence conditions of generalized differential transform method, Mathematical Methods in the Applied Sciences, 40(1) 40-48 (2017) **(SCI-IF-2.321)**.

90. **Sunil Kumar** (with Amit Kumar, Sheng-Ping Yan), Residual Power Series Method for fractional diffusions equations, Fundamenta Informmaticae, 151(1-4), 213-230 (2017) **(SCI-IF-1.333)**.

91. **Sunil Kumar** (with S. Abbasbandy, E. Shivanian and K. Vajravelu), A new approximate analytical technique for dual solutions of nonlinear differential equations arising in mixed convection heat transfer in a porous medium, International Journal of numerical methods for heat and fluid flow 27(2) 486-503 (2017) **(SCIE-IF-: 1.958)**.

92. **Sunil Kumar** (with B. Sharma, MK Paswan, D. Mahto), Chebyshev Operational Matrix Method for Lane-Emden Problem, Nonlinear Engineering-Modeling and Aplication, 8: 1–9 (2019) **(SCImago-IF-0.444)**.

93. **Sunil Kumar** (with B. Sharma, MK Paswan), Numerical investigation of MHD stagnation-point flow and heat transfer of sodium alginate non-Newtonian nanofluid, Nonlinear Engineering-Modeling and Aplication, (2019) 8: 179–192 **(SCImago-IF-0.444)**.

94. **Sunil Kumar** (with V.F. Morales Delgado, J.F. Gmez-Aguilar, M.A. Tanew-Hernindez), Analytical Solutions of the Keller-Segal chemotaxis model involving fractional operators without singular Kernel, The European Physical Journal Plus,(2018) 133: 200 **(SCI-IF-3.911)**.

95. **Sunil Kumar** (with Bhuvnesh Sharma, M.K. Paswan), Analytical solution for mixed convection and MHD flow of electrically conducting non-Newtonian nanofluid with different nanoparticles: A comparative study, International Journal of Heat and Technology 36(3), 987-996 (2018) **(ESCI-IF- 0.283)**.

96. **Sunil Kumar** (with AEl Ajou, MN. Oqielat, ZA Zhour, Shaher Momani), Solitary solutions for time-fractional nonlinear dispersive PDEs in the sense of conformable fractional derivative, Chaos 29, 093102 (2019) **(SCI-IF- 3.642)**.

97. **Sunil Kumar** (with Amit Kumar, Shaher Momani, M Aldhaifallah, KS Nisar), Numerical solutions of nonlinear fractional model arising in the appearance of the stripe patterns in two dimensional systems, Advances in Difference Equations, 2019(1) 1-19 (2019) **(SCIE-IF-1.130)**.

98. **Sunil Kumar** (with Z. Odibat), A robust computational algorithm of homotopy asymptotic method for solving systems of fractional differential equation, J. Comput. Nonlinear Dynam. Aug 2019, 14(8): 081004 **(SCIE-IF.2.085)**.

99. **Sunil Kumar** (with K. Gangadhar,M. Venkata Subba Rao, Sonia Sharma, Shankar Rao Munjam), A series-form solution of the coupled nonlinear equations by the method of directly defined inverse mapping and SRM, International Journal of Ambient Energy, doi.org/10.1080/01430750.2019.1688679, (2019): **(Scopus)**.

100. **Sunil Kumar** (with Emile F. Doungmo Goufoa, SB Mugisha), Similarities in a fifth-order evolution equation with and with no singular kernel, Chaos, Solitons and Fractals, 130 (2020) 109467 **(SCI-IF-5.944)**.

101. **Sunil Kumar** (with Behzad Ghanbari, Ranbir Kumar), A study of behaviour for immune and tumor cells in immunogenetic tumour model with non-singular fractional derivative, Chaos, Solitons and Fractals, 133, (2020) 109619 **(SCI-IF-5.944)**.

102. **Sunil Kumar** (with B. Sharma, C. Cattani, D. Baleanu), Nonlinear dynamics of Cattaneo-Christov heat flux model for third-grade power-law fluid, J. Comput. Nonlinear Dynam. 2020, 15(1): 011009 (9 pages) **(SCIE-IF-2.085)**.

103. **Sunil Kumar** (with Mohamed Jleli, Ranbir Kumar and Bessem Samet), Analytical approach for time fractional wave equations in the sense of Yang-Abdel-Aty-Cattani via the homotopy perturbation transform method, Alexandria Engineering Journal, 59(5), 2859-2863 (2020) **(SCI-IF-3.732)**.

104. **Sunil Kumar** (with KS Nisar, Ranbir Kumar, C. Cattani, B. Samet), A new Rabotnov fractional-exponential function based fractional derivative for diffusion equation under external force, Mathematical Methods in applied Sciences, 43(7), 4460-4471 (2020), **(SCIE-IF-2.321)**.

105. **Sunil Kumar** (with Ranbir Kumar, Jagdev Singh, Kottakkaran Sooppy Nisar, Devendra Kumar), An efficient numerical scheme for fractional model of HIV-1 infection of CD4 + T-Cells with the effect of antiviral drug therapy, Alexandria Engineering Journal, 59(4), 2053-2064 (2020) **(SCI-IF-3.732)**.

106. **Sunil Kumar** (with Bhuvnesh Sharma, Zakia Hammouch, Carlo Cattani), A study of spreading non-Newtonian fluids for cooling turbine disk using Legendre operational matrix method, Nonlinear Dynamics System Theory (Accepted),(2020) **(SCImago)**.

107. **Sunil Kumar** (with Amit Kumar, Syed Abbas, M Al Qurashi, Dumitru Baleanu), A modified analytical approach with existence and uniqueness for fractional Cauchy reaction–diffusion equations, Advances in Difference Equations, 28 (2020) **(SCIE-IF-1.130)**.

108. **Sunil Kumar** (with Ranbir Kumar, RP Agarwal, B. Samet), A study on population dynamics of two interacting species by haar wavelet and Adam's-Bashforth-Moulton methods, Mathematical Methods in Applied Sciences, 43(8),5564-5578 (2020), **(SCI-IF-2.321)**.

109. **Sunil Kumar** (with Ranbir Kumar, Jagdev Singh), A comparative study for fractional chemical kinetics and carbon dioxide CO_2 absorbed into phenyl glycidyl ether problems, AIMS Mathematics, 5(4): 3201–3222, (2020) **(SCIE-IF-0.6)**.

110. **Sunil Kumar** (with Amal Alshabanat, Mohamed Jleli, Bessem Samet), Generalization of Caputo-Fabrizio fractional derivative and applications to electrical circuits, Frontier in Physics, 8, 2020, 64 **(SCI-IF-3.560)**.

111. **Sunil Kumar** (with Ranbir Kumar, Carlo Cattani, Bessem Samet), Chaotic behavior of fractional predator-prey dynamical system, Chaos, Solitons and Fractals, 135, 109811, (2020) **(SCI-IF-5.944)**.

112. **Sunil Kumar** (with P. Veeresha, D. G. Prakasha), A fractional model for propagation of classical optical solitons by using nonsingular derivative, Mathematical Methods in Applied Sciences, DOI: 10.1002/mma.6335 (2020) **(SCI-IF-2.321)**.

113. **Sunil Kumar** (with Surath Ghosh, C. Cattani, A. Ciancio, Zeyad Al-Zhour), A study on fractional Black-Scholes option pricing model of financial market via new Yang-Abdel-Aty-Cattani operator, Alexandria Engineering Journal,(Submitted) 2020 **(SCI-IF-3.732)**.

114. **Sunil Kumar** (with Surath Ghosh, Bessem Samet, Emile Franc D. Goufo, M.A.Aty), An analysis for heat equations arises in diffusion process using new Yang-Abdel-Aty Cattani fractional operator, Mathematical Methods in Applied Sciences, 43(9), 6062-6080, (2020) **(SCI-IF-2.321)**.

115. **Sunil Kumar** (with Surath Ghosh, Surath Ghosh, Mansour S. M. Lotayif, Bessem Samet), A model for describing the velocity of a particle in Brownian motion by Robotnov function based fractional operator, Alexandria Engineering Journal,59(3), 1435-1449 (2020) **(SCI-IF-3.732)**.

116. **Sunil Kumar** (with Ali Ahmadian, Ranbir Kumar, Devendra Kumar, Jagdev Singh, Dumitru Baleanu, , Mehdi Salimi), An efficient numerical method for fractional SIR epidemic model of infectious disease by using Bernstein wavelets, Mathematics, 2020, 8(4), 558, (2020) **(SCI-IF-1.105)**.

117. **Sunil Kumar** (with Dumitru Baleanu1, Mohamed Jleli, and Bessem Samet), A fractional derivative with two singular kernels and application to a heat conduction problem, Advances in Difference Equation, 2020, 252 (2020), **(SCIE-IF-1.130)**.

118. **Sunil Kumar** (with Ranbir Kumar, HM Srivastava), A study of the fractional-order dynamical model associated with susceptible-infected- recovered epidemic of childhood diseases, Chaos, Solitons and Fractals, (Accepted) 2020 **(SCI-IF-5.944)**.

119. **Sunil Kumar** (with Jagdev Singh, Devendra Kumar), An efficient computational method for local fractional transport equation occurring in fractal porous media, Computational and Applied Mathematics, 39, 137 (2020), **(SCI-IF-2.239)**.

120. **Sunil Kumar** (with MK Bansal, Shiv Lal, Devendra Kumar, Jagdev Singh), Fractional differential equation pertaining to an integral operator involving incomplete H-function in the kernel, Mathematical Methods in Applied Sciences, DOI:10.1002/mma.6670, **(SCI-IF-2.321)**.

121. **Sunil Kumar** (with Khalid K. Ali, Mohamed A. Abd El Salam, Emad M. H. Mohamed, Bessem Samet, M.S. Osman), Numerical solution for generalized non-linear fractional integro-differential equations with linear functional arguments using Chebyshev series, Advances in Difference Equation, 2020, 494 (2020), **(SCI-IF-1.130)**.

122. **Sunil Kumar** (with M. Tahir, Hamood ur Rehman, Muhammad Ramzan, Ahmad Hasan, M.S. Osman), Exact traveling wave solutions of Chaffee-Infante equation in (2+1)-dimensions and dimensionless Zakharov equation, Mathematical Methods in Applied Sciences, 44(2), 1500-1513 (2021), **(SCI-IF-2.321)**.

123. **Sunil Kumar** (with Ajay Kumar, Bessem Samet, J.F. Gomez-Aguilar, M.S. Osman), A chaos study of tumor and effector cells in fractional tumor-immune model for cancer treatment, Chaos, Solitons and Fractals, 141, 110321 (2020) **(SCI-IF-5.944)**.

124. **Sunil Kumar** (with Ajay Kumar, Bessem Samet, Hemen Dutta), A study on fractional host-parasitoid population dynamical model to describe insect species, Numerical Methods for Partial Differential Equations, 37(2), 1673-1692 (2021) **(SCI-IF-3.009)**.

125. **Sunil Kumar** (with Surath Ghosh, Ranbir Kumar, Mohamed Jleli), A fractional model for population dynamics of two interacting species by using spectral and Hermite wavelets methods, Numerical Methods for Partial Differential Equations, 37(2), 1652-1672 (2021) **(SCI-IF-3.009)**.

126. **Sunil Kumar** (with M. S. Kiran1, V.S. Betageri1, D. G. Prakasha, P. Veeresha), A mathematical analysis of ongoing outbreak COVID-19 in India through non-singular derivative, Numerical Methods for Partial Differential Equations, 37(2), 1282-1298 (2021) **(SCI-IF-3.009)**.

127. **Sunil Kumar** (with Surath Ghosh, Mohamed Jleli, S. Araci), A fractional model of Cauchy-Reaction diffusion equations by using Robotnov function, Numerical Methods for Partial Differential Equations, (Accepted) (2020) **(SCI-IF-3.009)**.

128. **Sunil Kumar** (with Ranbir Kumar, M.S. Osman, Bessem Samet), A wavelet based numerical scheme for fractional order SEIR epidemic of measles by using Genocchi polynomials, Numerical Methods for Partial Differential Equations, 37(2), 1250-1268 (2021) **(SCI-IF-3.009)**.

129. **Sunil Kumar** (with MM. Khader, Khaled. M. Saad, Dumitru Baleanu), A spectral collocation method for fractional chemical clock reactions, Computational and Applied Mathematics, 39, 324 (2020). **(SCI-IF-2.239)**.

130. **Sunil Kumar** (with Ranbir Kumar, Shaher Momani, S. Hadid), A study on fractional COVID-19 disease model by using Hermite wavelets, Mathematical Methods in Applied Sciences, (Accepted) (2021) **(SCI-IF-2.321)**.

131. **Sunil Kumar** (with B. Ghanbari), A study on fractional predator-prey-pathogen model with Mittag-Leffler kernel-based operators, Numerical Methods for Partial Differential Equations, (Accepted) (2020) **(SCI-IF-3.009)**.

132. **Sunil Kumar** (with PK Shaw, A.H. Abdet Aty, E.E. Mahmoud), A numerical study on fractional differential equation with population growth model, Numerical Methods for Partial Differential Equations, (Accepted) (2020) **(SCI-IF-3.009)**.

133. **Sunil Kumar** (with S. Ghosh, S. Kundu), Spectral approximation methods for nonequilibrium transport in turbulent channel flows using fADE, Applied Numerical Mathematics, 162 (2020) 53-66 **(SCI-IF-2.468)**.

134. **Sunil Kumar** (with R.P. Chauhan, S. Momani, S. Hadid), Numerical investigation of a COVID-19 model through singular and non-singular fractional operators, Numerical Methods for Partial Differential Equations, (Accepted) (2020) **(SCI-IF-3.009)**.

135. **Sunil Kumar** (with H. Mohammadi, Sh. Rezapour, S. Etemad), A theoretical study of the Caputo-Fabrizio fractional modeling for hearing loss due to Mumps virus with optimal control, Chaos Solitons and Fractals, 144, 110668 (2021) **(SCI-IF-5.944)**.

136. **Sunil Kumar** (with Surath Ghosh, S. Momani, S. Hadid), Robotnov function based operator for biological population model of biology, International Journal of Numerical Methods for Heat and Fluid Flow, (Accepted) (2021) **(SCI-IF-2.236)**.

137. **Sunil Kumar** (with Mohamed A. Abdelkawy, Emad E. Mahmoud, Kholod M. Abualnaja, Abdel-Haleem Abdel-Aty), Accurate spectral algorithm for two-dimensional variable-order fractional percolation equations, Mathematical Methods in the Applied Sciences, (Accepted) (2021) **(SCI-IF-2.321)**.

138. **Sunil Kumar** (with P. Veeresha, D.G. Prakasha, Abdel-Haleem Abdel-Aty, H. Singh, E. E. Mahmoud), An efficient approach for fractional nonlinear chaotic model with Mittag-Leffler law, Journal of King Saud University, 33(2), 101347 (2021) **(SCI-IF- 4.011)**.

139. **Sunil Kumar** (with RP Chauhan, Abdel-Haleem Abdel-Aty, M. R. Alharthi), A study on transmission dynamics of HIV/AIDS model through fractional operators , Result in Physics, 22, 103855 (2021) **(SCI-IF- 4.476)**.

140. **Sunil Kumar** (with Soufiane Bentouta, Salih Djilali), Hopf bifurcation analysis in an age-structured heroin model, The European Physical Journal Plus, 136(2) 1-13 (2021) **(SCI-IF-3.911)**.

143. **Sunil Kumar** (with Ranbir Kumar, H. M. Srivastava, Emad E. Mahmoud), Laguerre wavelet scheme for fractional SIR epidemic model of childhood diseases, Numerical Methods for Partial Differential Equations, (Accepted) (2021) **(SCI-IF-3.009)**.

147. **Sunil Kumar** (with S. Djilali, S. Bentout, B. Ghanbari), New results in modeling herd behavior in ecological interaction, Numerical Methods for Partial Differential Equations, (Accepted) (2021) **(SCI-IF-3.009)**.

148. **Sunil Kumar** (with Muhammad Altaf Khan, Saif Ullah), A robust study on 2019-nCOV outbreaks through non-singular derivative, The European Physical Journal Plus, 136, 168 (2021) **(SCI-IF- 3.911)**.

149. **Sunil Kumar** (with Soufiane Bentout, Salih Djilali), Mathematical analysis of the influence of prey escaping from prey herd on three species fractional predator-prey interaction model, Physica A, 572 125840 (2021) **(SCI-IF-3.263)**.

150. **Sunil Kumar** (with Yu-Ming Chu, Nauman Raza), The unified method for abundant soliton solutions of local time fractional nonlinear evolution equations, Result in Physics, 22 (2021) 103979 **(SCI-IF- 4.476)**.

151. **Sunil Kumar** (with Salih Djilalib, Soufiane Bentout, Behzad Ghanbari), Spatial patterns in a vegetation model with internal competition and feedback regulation, The European Physical Journal Plus, 136(2) (2021) 1-24 **(SCI-IF- 3.911)**.

152. **Sunil Kumar** (with Ajay Kumar, B. Alshahrani, H. A. Yakout), Dynamical study on three-species population eco- epidemiological model with fractional order derivatives, Result in Physics, 24 104074 (2021) **(SCI-IF- 4.476)**.

153. **Sunil Kumar** (with Ajay Kumar, Abdel-Haleem Abdel-Aty, M. R. Alharthi), A study on four-species fractional population competition dynamical model, Result in Physics, 24 104089 (2021) **(SCI-IF- 4.476)**.

154. **Sunil Kumar** (with Anwar Zeb, Almaz Tesfayc, Anil Kumar), A stability analysis on a smoking model with stochastic perturbation, International Journal of Numerical Methods for Heat and Fluid Flow, (Accepted) (2021) **(SCI-IF- 2.236)**.

155. **Sunil Kumar** (with S. Djilali, S. Bentout, T.M. Touaoula, A. Tridane), Global behavior of Heroin epidemic model with time distributed delay and nonlinear incidence function, Results in Physics, (Accepted) (2021) **(SCI-IF- 4.476)**.

156. **Sunil Kumar** (with C. Liping, MA Khan, Abdon Atangana), A new financial chaotic model in Atangana-Baleanu stochastic fractional differential equations, Alexandria Engineering Journal, 60(6) 5193–5204 (2021) **(SCI-IF- 3.719)**.

157. **Sunil Kumar** (with S. Bentout1, S. Djilali, T. M. Touaoula), Threshold dynamics of difference equations for SEIR model with nonlinear incidence function and infinite delay, The European Physical Journal Plus, 136(5) (2021) 1-21 **(SCI-IF- 3.911)**.

158. **Sunil Kumar** (with RP Chauhan, D. Kumar, J. Singh), A computational study of transmission dynamics for dengue fever with a fractional approach, Mathematical Modelling of Natural Phenomena, (Accepted) (2021) **(SCI-IF- 1.642)**.

159. **Sunil Kumar** (with P. Kumar, V Erturk, Abdullahi Yusuf), Fractional time-delay mathematical modeling of Oncolytic, Chaos Solitons and Fractals, 150 (2021) 111123 **(SCI-IF- 5.944)**.

160. **Sunil Kumar** (with S. Momani, R. Kumar, HM Srivastava, S. Hadid), A chaos study of fractional SIR epidemic model of childhood diseases, Result in Physics, (2021) 104422 **(SCI-IF- 4.476)**.

161. **Sunil Kumar** (with Anwar Zeb, Tareq Saeed), A robust computational dynamics of fractional order smoking model with relapse habit, Fractal, (Accepted) (2021) **(SCI-IF- 3.665)**.

162. **Sunil Kumar** (with S. Momani, RP Chauhan, S. Hadid), A theoretical study on fractional Ebola haemorrhagic fever model, Fractal, (Accepted) (2021) **(SCI-IF- 3.665)**.

163. **Sunil Kumar** (with S. Momani, RP Chauhan, S. Hadid), A fractal-fractional 2019-nCOV model of major disaster for human life, Fractal, (Accepted) (2021) **(SCI-IF- 3.665)**.

164. **Sunil Kumar** (with Ebenezer Bonyah, Mehmet Yavuzb, Dumitru Baleanu), A robust study on the Listeriosis disease by adopting fractal-fractional operators, Alexandria Engineering Journal, (Accepted) (2021) **(SCI-IF- 3.719)**.

165. **Sunil Kumar** (with Rachid Belgacema, Ahmed Bokhari, Salih Djillali), Numerical inversion method for the Laplace transform based on Boubaker polynomials operational matrix, International Journal of Modeling, Simulation, and Scientific Computing, (Accepted) (2021) **(SCI-IF- 0.92)**.

166. **Sunil Kumar** (with S. Ghosh, S. Kundu), Time fractional advection-dispersion model to study transportation of particles with time-memory for unsteady nonequilibrium suspension in open-channel turbulent flows, Physics Scripta, (Accepted) (2021) **(SCI-IF- 0.92)**.

167. **Sunil Kumar** (with AD Adile, F. Kenmogne, AK Soup Tewa, H. Simo, AM Tahir), Dynamics of a mechanical network consisting of discontinuous coupled system oscillators with strong irrational nonlinearities: Resonant states and bursting waves, International Journal of Non-Linear Mechanics, (Accepted) (2021) **(SCI-IF- 2.985)**.

167. **Sunil Kumar** (with A. Mezouaghi, A. Benali, S. Djilali, A. Zeb, S.Rezapour), Mathematical analysis of a fractional resource-consumer model with disease developed in consumer, Advances in Difference Equations volume, (Accepted) (2021) **(SCI-IF- 2.803)**.

168. **Sunil Kumar** (with Sh. Rezapour, M.Q. Iqbal, A. Hussain, S. Etema), On two abstract Caputo multiterm sequential fractional boundary value problems under integral conditions, Mathematics and Computers in Simulation, (Accepted) (2021) **(SCI-IF- 2.463)**.

Published Book Chapters

1. **Sunil Kumar** (with Amit Kumar, J. J. Nieto, B. Sharma), Atangana–Baleanu Derivative with Fractional Order Applied to the Gas Dynamics Equations, Springer Nature Switzerland AG (2019).

2. **Sunil Kumar** (with Amit Kumar, Ranbir Kumar), A hybrid formulation of fractional model of Todda lattice equations, CPC Press.

3. **Sunil Kumar** (with Bhuvnesh Sharma, Carlo Cattani), Laminar Convection of Power-Law Fluids in Differentially Heated Closed Region: CFD Analysis, Springer Nature Switzerland (2021).

Attend National Conferences/Workshop

1. National Conference on Mathematical Modelling and Computer Simulation, Institute of Technology, Banaras Hindu University, Varanasi, 2011.

2. Workshop on Advanced Computational Mathematics, National Institute of Technology, Jamshedpur, Jharkhand, From: 23 June 2014 to 27 June 2014.

3. National Conference on "Mathematical Analysis and Computation" MNIT Jaipur, From 20-21 Feb, 2015.

Invited Talk/Lectures

- I have given a lecturer on "Numerical and Analytical Methods for Scientists and Engineers" on Feb. 19, 2015, JECRC University, Jaipur.

- **Keynote Speaker**, Fractional Calculus and Its Applications to Biology, The First Online Conference on Modern Fractional Calculus and Its Applications, Biruni University, Istanbul, Turkey, December 4-6, 2020.

International Conferences Papers

1. R. Bansal, S. Kapoor, S. Rawat, B. K Singh and **Sunil Kumar,** Role of diffusivity ratio in the linear stability analysis of double diffusive free convective flow in anisotropic porous media, Science and Engineering and National Conference (SETNC), UniKL Malaysian France Institute , Kualalumpur (Malaysia), 3-4 July (2013).

2. Zheng Hong Guo, Omer Acan, **Sunil Kumar,** Sumudu Transform Series Expension Method for Solving the Local fractional Laplace equation in Fractal Thermal Problems.

Committee Member in National/International Conferences

1. **Scientific Committee Member** in International Conference "Applied Mathematics in Heat and Fluid Flow" Shangjiang, Shanghai, China, during April 27-29, 2016
http://www.amhfaf.com/p%28scientific%20committee%29.htm

2. **Scientific Committee Member**, National Organizing Committee member in 24th International on Finite or Infinite Dimensional Complex Analysis & Applications, 22-26 August 2016, Anand International College of Engineering, Jaipur, India
http://nandice.ac.in/24icfidcaa-2016/organizeing-commeettee/

3. **Associate Editor** in International Conference in Advances in Applied Mathematics, 19-20 Novermber 2016, Ponjestly College of Engineering Nagercoil Kanyakumari, India
http://www.djicaam.org/editorialboard.html

4. **Scientific Advisory Committee Member** in National workshop on Differential Equations and Dynamical Systems, 27-28 February 2017, Shivaji University, Kolhapur
http://www.unishivaji.ac.in:8080/pages/National-Seminar-on-Differential-Equations-and-Dynamical-Systems-2017

5. **Scientific Advisory Committee member** in International Conference on Mathematical Modeling, Applied Modelling, Applied Analysis and Computation (ICMMAAC-18)
http://sws.jecrcuniversity.edu.in:81/ICMMAAC-18/NATIONAL-ADVISORY

6. **Scientific Advisory Committee Member** in 2nd International Conference on Mathematical Modelling, Applied Analysis and Computation is a specialized conference on mathematical modelling and its applications -2019 (ICMMAAC-19), JECRC University, Jaipur, India .
https://www.cmescongress.org/scientific-committee/

7. **International Scientific Committee Member** in 5th International Conference on Computational Mathematics and Engineering Science will be held in Van Yüzüncü Yıl University from June 19 to 21, 2020 in Van.
https://www.cmescongress.org/scientific-committee/

8. **Scientific Advisory Committee Member** in International Conference on Applied Mathematics in Engineering (ICAME'20) will be held from June 24 to June 26, 2020 in Burhaniye/Balikesir, Turkey.
http://icame.balikesir.edu.tr/committees.html

9. **Organizing Committee Member** in 9th International Conference on Mathematics and Information Sciences will be held from 6-8 Feb. 2020, Aswan, Egypt.

My Some National Collaboraters

1. Prof. Om P. Singh (Supervisor), Department of Applied Mathematics, Indian Institute of Technology, Banaras Hindu University, Varanasi, India.

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My Some International Collaboraters

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Declaration

I, hereby declare that all the statements made in this application are true and complete to the best of my knowledge and brief.

Place: Jamshedpur

(Sunil Kumar)