Dr. Kashif Ali Abro

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HEC Approved PhD Supervisor: Since 30-Dec-2020 for 03 years

PhD PCD No: 18412 (Higher Education Commission, Islamabad, Pakistan)

Pakistan Research Repository: http://prr.hec.gov.pk/jspui/handle/123456789/10965



Working as an Assistant Professor (Mathematics) BS-19 at Department of Basic Sciences and Related Studies, Mehran University of Engineering and Technology, Jamshoro, Sindh, Pakistan.

RESEARCH OBJECTIVES

To work on projects related to Applied Mathematics under the following specifications:

- ➤ Fractionalized non-Newtonian Fluids Flows (Investigation of rheological parameters of fluid flows)
- ➤ Nanofluids as the base fluids with nanoparticles (Enhancement of thermal conductivities of gold nanoparticles, single and multi-walled carbon nanotubes and molybdenum disulfide)
- Modern Fractional and Fractal Differentiations (To explore the impacts of a comparative study of new fractional definitions, such as Atangana-Baleanu (AB), Caputo-Fabrizio (CF), Atangana-Aguilar (AA) fractional derivatives)
- ➤ Integral Transforms
 (Analysis on validity of boundary conditions via different transforms on fractional and ordinary partial differential equations)
- Modern Control Engineering Theory
 (Armature controlled of DC servomotor, RL, RC, RLC, magnetically coupled circuits and supercapacitors circuits, diffusion processes with dissipation in electrical components)
- ➤ Piece-wise Fractal-Fractional Differential and Integral Operators (To disclose the fractal behavior of different rheological problems)

INTERNATIONAL RESEARCH RANKING

- ➤ Unique honor of publishing **117** research papers in a short span of 07 years (from 2015-to date).
- ➤ Listed as the *top 2 % of the most cited Scientist* around the globe recognized by Stanford University, United States of America in 2020.
- A bibliometric analysis of Atangana-Baleanu operators in fractional calculus from United States of America has acknowledged me for *most productive researcher and declared as 5th top researcher* throughout the world in the field of *FRACTIONAL CALCULUS*.
- ➤ Honour of having 2707 citations and h-index 31 and i-10 indexed 80 in Google scholar.
- ➤ Honour of having (>300) impact factor as per Journals Citation Report.



- Amongst the *highly cited researcher* in Mehran University of Engineering and Technology, Jamshoro, Pakistan from 2015 to till to date.
- **Reviewer** of several SCI and ISI international journals.
- ➤ Guest editor of few Journals for Special/Regular Issues.
- ➤ Honour of having score in Researchgate (RG) **34.14** and Researchgate (RG) Reads **18414**.
- ➤ Honour of having **2609** citations Researchgate (RG).
- Received reviewer certificates from publishers Elsevier, Springer, AIP publishers and few others.
- Awarded with *progress in fractional differentiation and application award* in testimony of the high regard of my achievements in the area of fractional calculus and its applications. The first online conference on Modern Fractional Calculus and its Applications, Biruni University, Istanbul, Turkey, December 4-6, 2020.
- ➤ Organized 1st International Conference on Mathematics and Applied Science (ICoMAS) 2022 at Mehran University of Engineering and Technology, SZAB Campus Khairpur Mir's, Pakistan as a *supporting member* from March 21-23, 2022.
- ➤ *National Keynote-Speaker* in 1st International Conference on Mathematics and Applied Science (ICoMAS) 2022 at Mehran University of Engineering and Technology, SZAB Campus Khairpur Mir's, Pakistan as a supporting member from March 21-23, 2022.

INTERNATIONAL RESEARCH PROJECT/ASSOCIATE

- ➤ Honour to work on research project provided by Faculty of Natural and Agricultural Sciences, University of the Free State, Bloemfontein, South Africa.
- ➤ Honour to work on research project provided by Faculty of Mathematics and Statistics, Ton Duc Thang University, Ho Chi Minh City, Vietnam with foreign Professors and collaborators.
- ➤ Honour to work on research project provided by King Faisal University, Al Ahsa 31982, Saudi Arabia. (The Deanship of Scientific Research, the Vice-Presidency for Graduate Studies and Scientific Research, King Faisal University, Al-Ahsa, Saudi Arabia).

EDUCATIONAL RECORD

DEGREE	CLASS	DISCIPLANE	YEAR	INSTITUTE	COUNTRY
Post Doctorate	1 st	Applied Mathematics	2020	UFS South Africa	South Africa
PhD	1 st	Applied Mathematics	2019	NEDUET Karachi	Pakistan
MS	1 st	Applied Mathematics	2014	NEDUET Karachi	Pakistan
BS	1 st	Mathematics	2009	UoS Jamshoro	Pakistan
HSC	1 st	Pre-Engineering	2005	BISE Hyderabad	Pakistan
Diploma	1 st	(I.T)	2005	BISE Hyderabad	Pakistan
SSC	1 st	Science	2003	BISE Hyderabad	Pakistan

RESEARCH TITLE IN POST-DOCTORATE

"Numerical Simulations of Non-Linear Mathematical Models via Fractal-Fractional Differentiations and Integrations"

I completed my post doctorate under the *supervision of Professor Dr. Abdon Atangana* form *University of the Free State, Bloemfontein, South Africa*. Professor Dr. Abdon Atangana has valuable contribution over the past three decades in "Fractional Calculus" and he is known as a great scientist in the field of "Fractional Calculus".

RESEARCH TITLE IN DOCTOR OF PHILOSOPHY

"Unsteady Magnetohydrodynamic (MHD) non-Newtonian Fluid Flows in Porous Medium"

RESEARCH TITLE IN MASTER OF SCIENCE

"Some Exact Solutions of Accelerated Flows over Magnetohydrodynamic (MHD) Maxwell Fluid"

SCI, ISI AND SCOPUS REFEREED JOURNALS

- ➤ Scientific Report [Impact Factor & JCR]
- ➤ Chaos An Interdisciplinary Journal of Nonlinear Science [Impact Factor & JCR]
- ➤ Bulletin of the Chemical Society of Ethiopia [Impact Factor & JCR]
- ➤ Chaos, Solitons & Fractals [Impact Factor & JCR]
- ➤ Journal of Polymers and the Environment [Impact Factor & JCR]
- ➤ Mathematical Methods in the Applied Sciences [Impact Factor & JCR]
- ➤ Results in Engineering [Impact Factor & JCR]
- ➤ Archives of Electrical Engineering [Impact Factor & JCR]
- ➤ Advances in Mechanical Engineering [Impact Factor & JCR]
- ➤ Journal of Thermal Analysis and Calorimetry [Impact Factor & JCR]
- ➤ Discrete and Continuous Dynamical Systems-S [Impact Factor & JCR]
- ➤ Journal of Magnetics [Impact Factor & JCR]
- ➤ Journal of Australian Ceramic Society [Impact Factor & JCR]
- ➤ International Journal of Heat and Technology [Impact Factor & JCR]
- ➤ Canadian Journal of Physics [Impact Factor & JCR]
- ➤ Journal of Bionanoscience [Impact Factor & JCR]
- ➤ International Journal of Non-Linear Analysis and Applications [ISI Indexed]
- Engineering Science and Technology, An International Journal [ISI Indexed]
- ➤ Journal of Fluid Mechanics and Thermal Sciences [**ISI Indexed**]

INTERNATIONAL RESEARCH COLLABORATION

Joint research collaboration has been established with leading foreign/national scholars.

- ➤ Professor Dr. Abdon Atangana (University of the Free State, Bloemfontein, South Africa)
- Professor Dr. José Francisco Gomez-Aguilar (Nacional de Tecnologico Mexico)
- Professor Dr. Fahd Jarad (Cankaya University, Turkey)
- Professor Dr. Ali Akgul (Siirt University, Turkey)
- Professor (Associate) Dr. Ilyas Khan (Majmaah University, Saudi Arabia)
- > Professor Dr. Mohammad Mehdi Rashidi (University of Birmingham, United Kingdom)
- ➤ Professor Dr. Qasem Al-Mdallal (Capital University of Science and Technology, UAE)
- Professor Dr. Asifa Tassaddiq ((Majmaah University, Saudi Arabia))
- > Dr. Ali Saleh Alshomrani (King Abdul Aziz University, Jeddah)
- > Dr. Norzieha Mustapha (Fakulti Sains Komputer dan Matematik, Universiti Teknologi Machang, Kelantan.)
- ➤ Professor Dr. Zakia Hamooch, University Moulay Ismail, Boutalamine, Errachidia, Morocco.

ACADEMIC DISTINCTIONS

- ➤ Have become **Author** and **Reviewer** of Text Books of Mathematics (Class-X-IX) published by Sindh Text Book Board, Jamshoro, Government of Sindh.
- ➤ Have become **Judge/Evaluator** of First Science and Arts Exhibition 2022 held Public School Hyderabad (Managed by Sukkur IBA University).
- ➤ Have Passed **GAT** (subjective) Mathematics with percentile Score 87.93 held on 18-01-2015 and

- valid up to 17-01-2017.
- Received award of as a handsome amount (**Post research publication honorarium**) on publishing research papers/book chapters in international peer reviewed journals with ISSN and impact factor.
- ➤ Obtained Prime Minister's **Laptop** and **merit certificate** from Higher Education Commission, Islamabad.
- ➤ Have participated in one-day workshop on "Mathematical Modeling of Fluid Flow and Its Applications" conducted on 25th August 2017 at Mehran University of Engineering and Technology, Jamshoro, Pakistan.
- ➤ Have participated in one-day workshop on "Outcome Based Education and Accreditation System" conducted on 5th May 2016 at Mehran University of Engineering and Technology, Jamshoro, Pakistan.

STUDENTS UNDER SUPERVISON/COSUPERVISION

Summary of Research Students

PhD Students	M.Phil. Students	
03	07	

> 01. Mr. Imran Qasim Memon (PhD student in progress)

Topic: Heat Transfer of Fractional Nanofluids under Different Geometries

> 02. Mr. Bhojraj Lohana (M.Phil. Student) (Achieved)

Topic: Fractional Treatment on Heat Transfer of Gravity-Driven Fluid Flow

> 03. Mr. Liagat Ali (M.Phil. Student in progress)

Topic: Thermal Deformity and Pyrolysis of Magnetized and Fractional Newtonian Fluid with Rheological Investigation

➤ 04. Ms. Amarah Akhund (M.Phil. Student in progress)

Topic: Use of Modern Fractal-Fractional Differential Operators in the Study Newtonian Fluid

> 05. Mr. Muzzafar Ali Laghari (M.Phil.) (Achieved)

Topic: Helical Flows of Fractional Viscoelastic Fluid in a Circular Pipe

> 06. Mr. Muhammad Nawaz (M.Phil. Student) (Achieved)

Topic: Application of Caputo-Fabrizio Fractional Derivative to Casson Fluid

> 07. Ms. Ambreen (M.Phil. Student) (Achieved)

Topic: Analytical Solutions of Fractionalized Brikman Fluid

> 08. Mr. Dur Muhammad (M.Phil. Student) (Achieved)

Topic: Heat and Mass Transfer of Second Grade Fluid: A Fractional Calculus Approach

SUBJECT TAUGHT

<u>Master Level</u>			<u>Undergraduate Level</u>
1	Transforms & their Applications	1	Applied Calculus
2	Advanced Linear Algebra	2	Differential Equations
3	Advanced Differential Equations	3	Linear Algebra

- 4 Applied Numerical Analysis
 5 Non-linear Differential Equations
 6 Fluid Mechanics and CFD
 4 Laplace Transform
 5 Numerical Analysis
 6 Statistical Methods
 - **WORK EXPERIENCE**

• October 2017 to present

Assistant Professor in Mathematics BPS-19, Department of Basic Sciences and Related Studies, Mehran University of Engineering and Technology, Jamshoro, Pakistan.

• April 2014 to October 2017

Lecturer in Mathematics BPS-18, Department of Basic Sciences and Related Studies, Mehran University of Engineering and Technology, Jamshoro, Pakistan.

• January 2013 to April 2014

Lecturer in Mathematics (on contract basis), Department of Basic Sciences and Related Studies, Mehran University of Engineering and Technology, Jamshoro, Pakistan.

• February 2012 to January 2013

Lecturer in Mathematics (on visiting basis), Department of Basic Sciences and Related Studies, Mehran University of Engineering and Technology, Jamshoro, Pakistan.

HOBBIES

Research Journals, Mathematical sciences, Engineering applications, Newspapers and Playing volley game.

PUBLICATIONS

Publication of Book Chapter

- [1] **Kashif Ali Abro**, J.F. Gomez-Aguilar, Dual Fractional Analysis of Blood Alcohol Model Via Non-integer Order Derivatives, Fractional Derivatives with Mittag-Leffler Kernel, Trends and Applications in Science and Engineering © Springer Nature Switzerland AG, volume 194, (2019), https://doi.org/10.1007/978-3-030-11662-0_5.
- [2] **Kashif Ali Abro**, Ambreen Siyal and Abdon Atangana, Behavior of Slip Effects on Oscillating Flows of Fractional Second Grade Fluid, Handbook of Fractional Calculus for Engineering and Science, Chapman and Hall/CRC, Volume 1, (2022), https://doi.org/10.1201/9781003263517

Summary of Research Paper Publications

International Publication	National Publication	Conference	Total
102	10	07	112

2022

[119] **Kashif Ali Abro**, Abdon Atangana, Imran Qasim Memon, Comparative analysis of statistical and fractional approaches for thermal conductance through suspension of ethylene glycol nanofluid, Brazilian Journal of Physics, (2022), https://doi.org/10.1007/s13538-022-01115-6. [Impact Factor = 1.32, Journal Citation Report 2021]

- [118] Liaquat Ali Panhwer, **Kashif Ali Abro**, and Imran Qasim Memon, Thermal deformity and thermolysis of magnetized and fractional Newtonian fluid with rheological investigation, Physics of Fluids, (2022); https://doi.org/10.1063/5.0093699. [Impact Factor = 3.521, Journal Citation Report 2021]
- [117] **Kashif Ali Abro**, Abdon Atangana & J.F. Gómez-Aguilar, A comparative analysis of plasma dilution based on fractional integro-differential equation: an application to biological science, International Journal of Modelling and Simulation, (2022) DOI: 10.1080/02286203.2021.2015818 [Impact Factor = 2.7, Journal Citation Report 2021]
- [116] Samia Riaz, Mudassar Sattar, **Kashif Ali Abro**, Qasim Ali, Thermo-dynamical investigation of constitutive equation for rate type fluid: a semi-analytical approach, International Journal of Modelling and Simulation, (2022) https://doi.org/10.1080/02286203.2022.2056427 [Impact Factor = 2.7, Journal Citation Report 2021]
- [115] Hamood Ur Rehman, Aziz Ullah Awan, **Kashif Ali Abro**, ElSayed M Tag El Din, Sobia Jafar, Ahmed M. Galal, A non-linear study of optical solitons for Kaup-Newell equation without four-wave mixing, Journal of King Saud University Science, 34 (2022) 102056. https://doi.org/10.1016/j.jksus.2022.102056 [Impact Factor = 4.011, Journal Citation Report 2021]
- [114] Hulya Durur, Asif Yokus, **Kashif Ali Abro**, A non-linear analysis and fractionalized dynamics of Langmuir waves and ion sound as an application to acoustic waves, International Journal of Modelling and Simulation, (2022) https://doi.org/10.1080/02286203.2022.2064797 [Impact Factor = 2.7, Journal Citation Report 2021]
- [113] Fahad Ahmed Shaikh, Kamran Malik, Mir Aftab Hussain Talpur, **Kashif Ali Abro**, Role of distinct buffers for maintaining urban-fringes and controlling urbanization: A case study through ANOVA and SPSS, Nonlinear Engineering, 2021; 10:1–8, https://doi.org/10.1515/nleng-2021-0045 [Impact Factor = 1.04, Journal Citation Report 2020]
- [112] Basma Souayeh, **Kashif Ali Abro**, Huda Alfannakh, Muneerah Al Nuwairan, and Amina Yasin, Application of Fourier Sine Transform to Carbon Nanotubes Suspended in Ethylene Glycol for the Enhancement of Heat Transfer, Energies, 2022, 15, 1200. https://doi.org/10.3390/en15031200. [Impact Factor = 3.04, Journal Citation Report 2020]
- [111] Aziz Ullah Awan, Samia Riaz, **Kashif Ali Abro**, Ayesha Siddiqa, and Qasim Ali, The role of relaxation and retardation phenomenon of Oldroyd-B fluid flow through Stehfest's and Tzou's algorithms, Nonlinear Engineering-Modeling and Application, 11, 1-12, (2022) https://doi.org/10.1515/nleng-2022-0006.
- [110] Kashif Ali Abro, Basma Souayeh, Kamran Malik, Abdon Atangana, Chaotic characteristics of thermal convection at smaller verse larger Prandtl number through fractal and fractional differential operators from nanofluid, International Journal of Modelling and Simulation, (2022) DOI: 10.1080/02286203.2021.2018261 [Impact Factor = 2.7, Journal Citation Report 2020]
 2021
- [109] **Kashif Ali Abro**, Abdon Atangana, Jose Francisco Gomez-Aguilar, Ferromagnetic chaos in thermal convection of fluid through fractal—fractional differentiations, Journal of Thermal Analysis and Calorimetry, (2021) https://doi.org/10.1007/s10973-021-11179-2 [Impact Factor = 4.626, Journal Citation Report 2020]
- [108] Basma Souayeh, **Kashif Ali Abro**, Thermal characteristics of longitudinal fin with Fourier and non-Fourier heat transfer by Fourier sine transforms, Scientific Reports, 11, (2021), 20993, https://doi.org/10.1038/s41598-021-00318-2. [Impact Factor = 4.380, Journal Citation Report 2020]

- [107] **Kashif Ali Abro**, Abdon Atangana, Jose Francisco Gomez-Aguilar, An analytic study of bioheat transfer Pennes model via modern non-integers differential techniques, Eur. Phys. J. Plus (2021) 136:1144, https://doi.org/10.1140/epjp/s13360-021-02136-x [Impact Factor = 3.911, Journal Citation Report 2020]
- [106] Hülya Durur, Asıf Yokus, Kashif Ali Abro, Computational and traveling wave analysis of Tzitzéica and Dodd-Bullough-Mikhailov equations: An exact and analytical study, Nonlinear Engineering 2021; 10: 272–281, https://doi.org/10.1515/nleng-2021-0021 [ISI Indexed]
- [105] Asıf Yokus, Hülya Durur, **Kashif Ali Abro**, Role of shallow water waves generated by modified Camassa-Holm equation: A comparative analysis for traveling wave solutions, Nonlinear Engineering, 2021; 10: 385–394, https://doi.org/10.1515/nleng-2021-0030 [ISI Indexed]
- [104] **Kashif Ali Abro**, Abdon Atangana, Synchronization via fractal-fractional differential operators on two-mass torsional vibration system consisting of motor and roller, Journal of Computational and Nonlinear Dynamics, 2021, DOI: 10.1115/1.4052189 [Impact Factor = 2.085, Journal Citation Report 2020]
- [103] Muhammad Bilal Riaz, **Kashif Ali Abro**, Khadijah M. Abualnaja, Ali Akgul, Aziz Ur Rehman, Muhammad Abbas and Y.S. Hamed, Exact solutions involving special functions for unsteady convective flow of magnetohydrodynamic second grade fluid with ramped conditions, Advances in Difference Equations, (2021), 408, https://doi.org/10.1186/s13662-021-03562-y. [Impact Factor = 2.803, Journal Citation Report 2020]
- [102] **Kashif Ali Abro**, Abdon Atangana, Ali Raza Khoso, Dynamical behavior of fractionalized simply supported beam: An application of fractional operators to Bernoulli-Euler theory, Nonlinear Engineering, (2021), https://doi.org/10.1515/nleng-2021-0017. [Impact Factor = 1.024, Journal Citation Report 2020]
- [101] **Kashif Ali Abro**, Abdon Atangana, Strange Attractors and Optimal Analysis of Chaotic Systems based on Fractal-Fractional Differential Operators, International Journal of Modelling and Simulation, (2021), https://doi.org/10.1080/02286203.2021.1966729. [Impact Factor = 2.7, Journal Citation Report 2020]
- [100] **Kashif Ali Abro**, Abdon Atangana, José Francisco Gomez-Aguilar, Role of bi-order Atangana–Aguilar fractional differentiation on Drude model: an analytic study for distinct sources, Optical and Quantum Electronics, (2021) 53:177. https://doi.org/10.1007/s11082-021-02804-3. [Impact Factor = 1.842, Journal Citation Report 2020]
- [99] Imran Siddique, Nehad Ali Shah, **Kashif Ali Abro**, Thermography of ferromagnetic Walter's-B fluid through varying thermal stratification, South African Journal of Chemical Engineering, 36 (2021) 118–126. https://doi.org/10.1016/j.sajce.2020.12.004 [Impact Factor = 4.5, JCR 2020].
- [98] Qasim Ali, Samia Riaz, Aziz Ullah Awan, **Kashif Ali Abro**, A mathematical model for thermography on viscous fluid based on damped thermal flux, Zeitschrift für Naturforschung A, (2021), https://doi.org/10.1515/zna-2020-0322. [Impact Factor = 0.88, JCR 2020].
- [97] **Kashif Ali Abro**, Ilyas Khan, Kottakkaran Sooppy Nisar, Abdon Atangana, Super-criticism of electrochemical double layer capacitor for diffusion phenomenon: A fractional application of ultracapacitor, Alexandria Engineering Journal, (2021) 60, 3361–3368, https://doi.org/10.1016/j.aej.2021.01.058 [Impact Factor = 2.46, JCR 2020].
- [96] **Kashif Ali Abro**, Jose Francisco Gomez-Aguilar, Fractional modeling of fin on non-Fourier heat conduction via modern fractional differential operators, Arabian Journal for Science and Engineering, (2021), https://doi.org/10.1007/s13369-020-05243-6. [Impact Factor = 1.711, JCR 2020].
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[94] Arshad Riaz, Aziz Ullah Awan, Sajad Hussain, Sami Ullah Khan, **Kashif Ali Abro**, Effects of solid particles on fluid-particulate phase flow of non-Newtonian fluid through eccentric annuli having thin peristaltic walls, Journal of Thermal Analysis and Calorimetry, (2020); https://doi.org/10.1007/s10973-020-10447-x. [Impact Factor = 3.228, JCR 2020].

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- [92] **Kashif Ali Abro**, Sania Qureshi, and Abdon Atangana, Mathematical and numerical optimality of non-singular fractional approaches on free and forced linear oscillator, Nonlinear Engineering, 9, (2020) 449-456. [Impact Factor = 3.228, JCR 2020].
- [91] Takasar Hussain, Aziz Ullah Awan, **Kashif Ali Abro**, Muhammad Ozair, Mehwish Manzoor, A mathematical and parametric study of epidemiological smoking model: a deterministic stability and optimality for solutions, European Physical Journal Plus, 136:11, (2021), https://doi.org/10.1140/epjp/s13360-020-00979-4 [Impact Factor = 3.228, JCR 2020].
- [90] Imran Qasim Memon, **Kashif Ali Abro**, Muhammad Anwar Solangi, Asif Ali Shaikh, Functional shape effects of nanoparticles on nanofluid suspended in ethylene glycol through Mittage-Leffler approach, Physica Scripta, 96(2), 025005 (2020); https://doi.org/10.1088/1402-4896/abd1b3 [Impact Factor = 1.985, JCR 2020]
- [89] Muhammad Ozair, Takasar Hussain, Mureed Hussain, Aziz Ullah Awan, Dumitru Baleanu, **Kashif Ali Abro**, A Mathematical and Statistical Estimation of Potential Transmission and Severity of COVID-19: A Combined Study of Romania and Pakistan, BioMed Research International, Volume 2020, Article ID 5607236, 14 pages, https://doi.org/10.1155/2020/5607236 [Impact Factor = 2.583, JCR 2020]
- [88] **Kashif Ali Abro**, Fractional characterization of fluid and synergistic effects of free convective flow in circular pipe through Hankel transform, Physics of Fluids, 32, 123102 (2020); https://doi.org/10.1063/5.0029386 [Impact Factor = 3. 145, JCR 2020]
- [87] **Kashif Ali Abro**, Imran Qasim Memon, Ambreen Siyal, Thermal transmittance and thermomagnetization of unsteady free convection viscous fluid through non-singular differentiations, Physica Scripta, (2020), https://doi.org/10.1088/1402-4896/abc981.[Impact Factor = 1.985, JCR 2020]
- [86] **Kashif Ali Abro,** Abdon Atangana, Dual fractional modeling of rate type fluid through non-local differentiation, Numerical Methods for Partial Differential Equations, 1–16 (2020). https://doi.org/10.1002/num.22633, [Impact Factor = 2.236, JCR 2020].
- [85] **Kashif Ali Abro,** Abdon Atangana, Numerical and mathematical analysis of induction motor by means of AB–fractal-fractional differentiation actuated by drilling system, Numerical Methods for Partial Differential Equations, 1-15 (2020), https://doi.org/10.1002/num.22618, [Impact Factor = 2.236, JCR 2020].
- [84] **Kashif Ali Abro**, Ambreen Siyal, Basma Souayeh, Abdon Atangana, Application of Statistical Method on Thermal Resistance and Conductance during Magnetization of Fractionalized Free Convection Flow, International Communications in Heat and Mass Transfer, 119 (2020) 104971, https://doi.org/10.1016/j.icheatmasstransfer.2020.104971, [Impact Factor = 3.971, JCR 2020].
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- [80] Qasim Ali, Samia Riaz, Aziz Ullah Awan, **Kashif Ali Abro**, Thermal investigation for electrified convection flow of Newtonian fluid subjected to damped thermal flux on a permeable medium, Physica Scripta, (2020), https://doi.org/10.1088/1402-4896/abbc2e. [Impact Factor = 1.985, JCR 2020].

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- [78] Ilyas Khan, Syed Tauseef Saeed, Muhammad Bilal Riaz, **Kashif Ali Abro**, Syed Muhammad Husnine, Kottakkaran Sooppy Nisar, Influence in a Darcy's medium with heat production and radiation on MHD convection flow via modern fractional approach, Journal of Materials Research and Technology, 9, (2020) 10016-10030. https://doi.org/10.1016/j.jmrt.2020.06.059 [Impact Factor = 5.289, JCR 2020].
- [77] **Kashif Ali Abro,** Muzaffar Hussain Laghari, Jose Francisco Gomez Aguilar, Application of Atangana-Baleanu fractional derivative to carbon nanotubes based non-Newtonian nanofluid: Applications in nanotechnology, Journal of Applied and Computational Mechanics, 6(SI), 2020, 1260-1269. https://doi.org/10.22055/JACM.2020.33461.2229[Impact Factor = 2.3, JCR 2020].
- [76] Asıf Yoku, Hülya Durur, **Kashif Ali Abro**, Dogan Kaya, Role of Gilson–Pickering equation for the different types of soliton solutions: A nonlinear analysis, European Physical Journal-Plus, (2020) 135:657, https://doi.org/10.1140/epjp/s13360-020-00646-8. [Impact Factor = 3.228, JCR 2020].
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