Bibliography

[1] Abbas, M. I. Existence and Hyers-Ulam stability results of nonlinear implicit Caputo-Katugampola fractional differential equations with $p-$Laplacian operator. *Journal of Interdisciplinary Mathematics,* 25(2):415–432, 2022.

[2] Abbas, S., Benchohra, M., Graef, J. R., and Henderson, J. *Implicit Fractional Differential and Integral Equations: Existence and Stability.* Volume 26, Walter de Gruyter GmbH, Germany, 2018.

[3] Abdeljawad, T., Sher, M., Shah, K., Sarwar, M., Amacha, I., Alqudah, M., and Al-Jaser, A. Analysis of a class of fractal hybrid fractional differential equation with application to a biological model. *Scientific Reports,* 14(1):#18937, 2024.

[4] Abdo, M. S., Abdeljawad, T., Kucche, K. D., Alqudah, M. A., Ali, S. M., and Jeelani, M. B. On nonlinear pantograph fractional differential equations with Atangana-Baleanu-Caputo derivative. *Advances in Difference Equations,* 2021:1–17, 2021.

[5] Abdo, M. S., Shammakh, W., Alzumi, H. Z., Alghamd, N., and Albalwi, M. D. Nonlinear piecewise Caputo fractional pantograph system with respect to another function. *Fractal and Fractional,* 7(2):#162, 2023.

[6] Adjimi, N., Boutiara, A., Samei, M. E., Etemad, S., Rezapour, S., and Kaabar, M. K. On solutions of a hybrid generalized Caputo-type problem via the noncompactness measure in the generalized version of Darbo's criterion. *Journal of Inequalities and Applications,* 2023(1):#34, 2023.

[7] Aghajani, A., Jalilian, Y., and Trujillo, J. J. On the existence of solutions of fractional integro-differential equations. *Fractional Calculus and Applied Analysis,* 15:44–69, 2012.

[8] Ahmad, B., Albideewi, A. F., Ntouyas, S. K., and Alsaedi, A. Existence results for a multipoint boundary value problem of nonlinear sequential Hadamard fractional differential equations. *Cubo (Temuco)*, 23(2):225–237, 2021.

[9] Ahmad, B. and Luca, R. Existence of solutions for sequential fractional integro-differential equations and inclusions with nonlocal boundary conditions. *Applied Mathematics and Computation,* 339:516–534, 2018.

[10] Ahmad, I., Shah, K., Ur Rahman, G., and Baleanu, D. Stability analysis for a nonlinear coupled system of fractional hybrid delay differential equations. *Mathematical Methods in the Applied Sciences,* 43(15):8669–8682, 2020.

[11] Ahmad, M., Jiang, J., Zada, A., Shah, S. O., and Xu, J. Analysis of coupled system of implicit fractional differential equations involving Katugampola-Caputo fractional derivative. *Complexity,* 2020(1):#9285686, 2020.

[12] Almaghamsi, L. Weak solution for a fractional Langevin inclusion with the Katugampola-Caputo fractional derivative. *Fractal and Fractional,* 7(2):#174, 2023.

[13] Almeida, R. A Caputo fractional derivative of a function with respect to another function. *Communications in Nonlinear Science and Numerical Simulation,* 44:460–481, 2017.

[14] Almeida, R., Malinowska, A. B., and Monteiro, M. T. T. Fractional differential equations with a Caputo derivative with respect to a kernel function and their applications. *Mathematical Methods in the Applied Sciences,* 41(1):336–352, 2018.

[15] Almeida, R., Malinowska, A. B., and Odzijewicz, T. Fractional differential equations with dependence on the Caputo-Katugampola derivative. *Journal of Computational and Nonlinear Dynamics,* 11(6):#061017, 2016.

[16] Ali, A., Sarwar, M., Zada, M. B., and Shah, K. Existence of solution to fractional differential equation with fractional integral type boundary conditions. *Mathematical Methods in the Applied Sciences,* 44(2):1615–1627, 2021.

[17] Ali, G., Khan, R. U., Kamran, Aloqaily, A., and Mlaiki, N. On qualitative analysis of a fractional hybrid Langevin differential equation with novel boundary conditions. *Boundary Value Problems,* 2024(1):#62, 2024.

[18] Alrabaiah, H., Ahmad, I., Shah, K., and Rahman, G. U. Qualitative analysis of nonlinear coupled pantograph differential equations of fractional order with integral boundary conditions. *Boundary Value Problems,* 2020:1–13, 2020.

[19] Al-Sadi, W., Zhenyou, H., and Alkhazzan, A. Existence and stability of a positive solution for nonlinear hybrid fractional differential equations with singularity. *Journal of Taibah University for Science,* 13(1):951–960, 2019.

[20] Amara, A., Etemad, S., and Rezapour, S. Topological degree theory and Caputo-Hadamard fractional boundary value problems. *Advances in Difference Equations,* 2020(1):369, 2020.

[21] Arab, M. and Awadalla, M. A coupled system of Caputo-Hadamard fractional hybrid differential equations with three-point boundary conditions. *Mathematical Problems in Engineering,* 2022(1):#1500577, 2022.

[22] Aslantaş, M. Existence of the solution of nonlinear fractional differential equations via new best proximity point results. *Mathematical Sciences,* 18:645–653, 2024.

[23] Baitiche, Z., Derbazi, C., and Benchohra, M. ψ–Caputo fractional differential equations with multi-point boundary conditions by topological degree theory. *Results in Nonlinear Analysis,* 3(4):167–178, 2020.

[24] Balachandran, K., Kiruthika, S., and Trujillo, J. Existence of solutions of nonlinear fractional pantograph equations. *Acta Mathematica Scientia,* 33(3):712–720, 2013.

[25] Balachandran, K. and Park, J. Y. Nonlocal Cauchy problem for abstract fractional semilinear evolution equations. *Nonlinear Analysis: Theory, Methods and Applications,* 71(10):4471–4475, 2009.

[26] Benchohra, M., Bouriah, S., and Graef, J. R. Nonlinear implicit differential equations of fractional order at resonance. *Electronic Journal of Differential Equations,* 324:1–10, 2016.

[27] Boutiara, A., Abdo, M. S., and Benbachir, M. Existence results for ψ-Caputo fractional neutral functional integro-differential equations with finite delay. *Turkish Journal of Mathematics,* 44(6):2380–2401, 2020.

[28] Boutiara, A., Etemad, S., Hussain, A., and Rezapour, S. The generalized U-H and U-H stability and existence analysis of a coupled hybrid system of integro-differential IVPs involving φ-Caputo fractional operators. *Advances in Difference Equations,* 2021:1–21, 2021.

[29] Burton, T. A. A fixed-point theorem of Krasnoselskii. *Applied Mathematics Letters,* 11(1):85–88, 1998.

[30] Byszewski, L. Theorems about existence and uniqueness of solutions of a semi-linear evolution nonlocal Cauchy problem. *Journal of Mathematical Analysis and Applications,* 162:494–505, 1991.

[31] Byszewski, L. and Lakshmikantham, V. Theorem about the existence and uniqueness of a solution of a nonlocal abstract Cauchy problem in a Banach space. *Applicable Analysis,* 40(1):11–19, 1991.

[32] Çelik, C. and Develi, F. Implicit fractional differential equations: existence of a solution revisited. *Mathematical Methods in the Applied Sciences,* 47(6):5090–5097, 2024.

[33] Cen, Z., Huang, J., and Xu, A. An efficient numerical method for a two-point boundary value problem with a Caputo fractional derivative. *Journal of Computational and Applied Mathematics,* 336:1–7, 2018.

[34] Chabane, F., Benbachir, M., Etemad, S., Rezapour, S., and Avcı, İ. On the $\rho-$Caputo impulsive $p-$Laplacian boundary problem: an existence analysis. *Qualitative Theory of Dynamical Systems,* 23(3):#133, 2024.

[35] Chen, H., Meng, S., and Cui, Y. Monotone iterative technique for conformable fractional differential equations with deviating arguments. *Discrete Dynamics in Nature and Society,* 2020(1):#5827127, 2020.

[36] Chen, P. and Feng, W. Fractional evolution equations with nonlocal initial conditions and superlinear growth nonlinear terms. *Qualitative Theory of Dynamical Systems,* 23(2):#69, 2024.

[37] Chaudhary, R. and Reich, S. Existence and controllability results for Hilfer fractional evolution equations via integral contractors. *Fractional Calculus and Applied Analysis,* 25(6):2400–2419, 2022.

[38] Das, S., Pandey, D. N., and Sukavanam, N. Approximate controllability of a functional differential equation with deviated argument. *Nonlinear Dynamics and Systems Theory,* 14(3):265–277, 2014.

[39] Deng, K. Exponential decay of solutions of semilinear parabolic equations with nonlocal initial conditions. *Journal of Mathematical Analysis and Applications,* 179(2):630–637, 1993.

[40] Derbazi, C. and Baitiche, Z. Coupled systems of $\psi-$Caputo differential equations with initial conditions in Banach spaces. *Mediterranean Journal of Mathematics,* 17(5):#169, 2020.

[41] Devi, A. and Kumar, A. Hyers-Ulam stability and existence of solution for hybrid fractional differential equation with $p-$Laplacian operator. *Chaos, Solitons and Fractals,* 156:#111859, 2022.

[42] Devi, D. and Borah, J. Existence of solutions for a nonlinear nonlocal hybrid functional fractional differential equation. *Rocky Mountain Journal of Mathematics,* 53(5):1459–1467, 2023.

[43] Devi, D. and Borah, J. On the solution of nonlinear nonlocal Volterra-Fredholm type hybrid fractional differential equation. *Indian Journal of Pure and Applied Mathematics,* 2023:1–12, 2023.

[44] Devi, D. and Borah, J. Results on existence, uniqueness and stability of a impulsive Caputo-Katugampola hybrid FDE with $p-$Laplacian operator. *Mathematical Methods in the Applied Sciences,* 2025(0):1–12, 2025.

[45] Dhage, B. C. On some variants of Schauder's fixed point principle and applications to nonlinear integral equations. *Journal of Mathematical and Physical Sciences,* 25:603–611, 1988.

[46] Dhage, B. C. A fixed point theorem in Banach algebras involving three operators with applications. *Kyungpook Mathematical Journal,* 44(1):145–155, 2004.

[47] Dhage, B. C. On a fixed point theorem in Banach algebras with applications. *Applied Mathematics Letters,* 18(3):273–280, 2005.

[48] Dhage, B. C. On solvability of operator inclusions $x \in AxBx + Cx$ in Banach algebras and differential inclusions. *Communications in Applied Analysis,* 14(4):567–596, 2010.

[49] Dhage, B. C. and Jadhav, N. S. Basic results in the theory of hybrid differential equations with linear perturbations of second type. *Tamkang Journal of Mathematics,* 44(2):171–186, 2013.

[50] Dhage, B. C. and Lakshmikantham, V. Basic results on hybrid differential equations. *Nonlinear Analysis: Hybrid Systems,* 4(3):414–424, 2010.

[51] Dhawan, K., Vats, R. K., Nain, A. K., and Shukla, A. Well-posedness and Ulam-Hyers stability of Hilfer fractional differential equations of order $(1, 2]$ with nonlocal boundary conditions. *Bulletin des Sciences Mathématiques,* 191:#103401, 2024.

[52] Dineshkumar, C., Udhayakumar, R., Vijayakumar, V., Shukla, A., and Nisar, K. S. A note on approximate controllability for nonlocal fractional evolution stochastic integrodifferential inclusions of order $r \in (1, 2)$ with delay. *Chaos, Solitons and Fractals,* 153:#111565, 2021.

[53] Duman, O. and Develi, F. Existence and Hyers-Ulam stability results for partial fractional-order delay differential equations. *Results in Mathematics,* 77(3):#97, 2022.

[54] El-Borai, M. M. Some probability densities and fundamental solutions of fractional evolution equations. *Chaos, Solitons and Fractals,* 14(3):433–440, 2002.

[55] El'sgol'ts, L. E. and Norkin, S. B. *Introduction to the Theory of Differential Equations with Deviating Arguments.* Academic Press, London, 1973.

[56] Faree, T. A. and Panchal, S. K. Existence of solution for impulsive fractional differential equations with nonlocal conditions by topological degree theory. *Results in Applied Mathematics,* 18:#100377, 2023.

[57] Furati, K. M. and Kassim, M. D. Existence and uniqueness for a problem involving Hilfer fractional derivative. *Computers and Mathematics with Applications,* 64(6):1616–1626, 2012.

[58] Gal, C. G. Nonlinear abstract differential equations with deviated argument. *Journal of Mathematical Analysis and Applications,* 333(2):971–983, 2007.

[59] Gu, H. and Trujillo, J. J. Existence of mild solution for evolution equation with Hilfer fractional derivative. *Applied Mathematics and Computation,* 257:344–354, 2015.

[60] Gul, R., Sarwar, M., Shah, K., Abdeljawad, T., and Jarad, F. Qualitative analysis of implicit Dirichlet boundary value problem for Caputo-Fabrizio fractional differential equations. *Journal of Function Spaces,* 2020(1):#4714032, 2020.

[61] Gunasekar, T., Raghavendran, P., Santra, S. S., and Sajid, M. Existence and controllability results for neutral fractional Volterra-Fredholm integro-differential equations. *Journal of Mathematics and Computer Science,* 34(4):361–380, 2024.

[62] Guo, Y., Shu, X. B., and Yin, Q. Existence of solutions for first-order Hamiltonian random impulsive differential equations with Dirichlet boundary conditions. *Discrete and Continuous Dynamical Systems-B*, 27(8):#4455, 2022.

[63] Herzallah, M. A. and Baleanu, D. On fractional order hybrid differential equations. *Abstract and Applied Analysis,* 2014(1):#389386, 2014.

[64] Hilal, K., Kajouni, A., and Zerbib, S. Hybrid fractional differential equation with nonlocal and impulsive conditions. *Filomat,* 37(10):3291–3303, 2023.

[65] Hilfer, R. *Applications of Fractional Calculus in Physics.* World Scientific, 2000.

[66] Iqbal, M., Shah, K., and Khan, R. A. On using coupled fixed-point theorems for mild solutions to coupled system of multipoint boundary value problems of nonlinear fractional hybrid pantograph differential equations. *Mathematical Methods in the Applied Sciences,* 44(10):8113–8124, 2021.

[67] Isaia, F. On a nonlinear integral equation without compactness. *Acta Mathematica Universitatis Comenianae (New Series)*, 75(2):233–240, 2006.

[68] Kaliraj, K. and Muthuvel, K. Existence of solution for Volterra-Fredholm type stochastic fractional integro-differential system of order $\mu \in (1, 2)$ with sectorial operators. *Mathematical Methods in the Applied Sciences,* 46(12):13142–13154, 2023.

[69] Kamalapriya, B., Balachandran, K., and Annapoorani, N. Existence results for fractional integro-differential equations of Sobolev type with deviating arguments. *Journal of Applied Nonlinear Dynamics,* 11(01):57–67, 2022.

[70] Karthikeyan, K., Karthikeyan, P., Baskonus, H. M., Venkatachalam, K., and Chu, Y. M. Almost sectorial operators on $\Psi-$Hilfer derivative fractional impulsive integro-differential equations. *Mathematical Methods in the Applied Sciences,* 45(13):8045–8059, 2022.

[71] Kavitha, K., Vijayakumar, V., Udhayakumar, R., and Ravichandran, C. Results on controllability of Hilfer fractional differential equations with infinite delay via measures of noncompactness. *Asian Journal of Control,* 24(3):1406–1415, 2022.

[72] Katugampola, U. N. New approach to a generalized fractional integral. *Applied Mathematics and Computation*, 218(3):860–865, 2011.

[73] Katugampola, U. N. A new approach to generalized fractional derivatives. *Bulletin of Mathematical Analysis and Applications*, 6(4):1–15, 2014.

[74] Kavitha, K., Vijayakumar, V., Udhayakumar, R., and Nisar, K. S. Results on the existence of Hilfer fractional neutral evolution equations with infinite delay via measures of noncompactness. *Mathematical Methods in the Applied Sciences,* 44(2):1438–1455, 2021.

[75] Khan, H., Jarad, F., Abdeljawad, T., and Khan, A. A singular ABC-fractional differential equation with $p-$Laplacian operator. *Chaos, Solitons and Fractals,* 129:56–61, 2019.

[76] Khan, H., Tunc, C., Chen, W., and Khan, A. Existence theorems and Hyers-Ulam stability for a class of hybrid fractional differential equations with $p-$Laplacian operator. *Journal of Applied Analysis and Computation,* 8(4):1211–1226, 2018.

[77] Kilbas, A. A., Srivastava, H. M., and Trujillo, J. J. *Theory and Applications of Fractional Differential Equations.* Elsevier, Amsterdam, The Netherlands, 2006.

[78] Kreyszig, E. *Introductory Functional Analysis with Applications.* Wiley, New York, 1978.

[79] Kucche, K. D. and Mali, A. D. On the nonlinear ψ-Hilfer hybrid fractional differential equations. *Computational and Applied Mathematics,* 41(3):#86, 2022.

[80] Kumar, A., Jeet, K., and Vats, R. K. Controllability of Hilfer fractional integro-differential equations of Sobolev-type with a nonlocal condition in a Banach space. *Evolution Equations and Control Theory,* 11(2):605–619, 2022.

[81] Kumar, J., Singh, S., Arora, S., and Dabas, J. Total controllability of nonlocal semilinear functional evolution equations with non-instantaneous impulses. *Indian Journal of Pure and Applied Mathematics,* 1–18, 2024.

[82] Kumar, P., Pandey, D. N., and Bahuguna, D. Approximations of solutions to a fractional differential equation with a deviating argument. *Differential Equations and Dynamical Systems,* 22(4):333–352, 2014.

[83] Lakshmikantham, V., Bainov, D. D., and Simeonov, P. S. *Theory of Impulsive Differential Equations*. World Scientific, 1989.

[84] Leibenson, L. S. General problem of the movement of a compressible fluid in a porous medium. *Izvestiya Akademii Nauk Kirgizskoi SSR,* 9(1):7–10, 1983.

[85] Li, M., Debbouche, A., and Wang, J. Relative controllability in fractional differential equations with pure delay. *Mathematical Methods in the Applied Sciences,* 41(18):8906–8914, 2018.

[86] Liu, B. and Liu, Y. Positive solutions of a two-point boundary value problem for singular fractional differential equations in Banach space. *Journal of Function Spaces,* 2013(1):#585639, 2013.

[87] Louakar, A., Hamid, L., Kajoun, A., and Hilal, K. Existence results for a class of ψ-Hilfer fractional hybrid differential equations. *Turkish Journal of Mathematics and Computer Science,* 16(2):450–462, 2024.

[88] Lu, H., Sun, S., Yang, D., and Teng, H. Theory of fractional hybrid differential equations with linear perturbations of second type. *Boundary Value Problems,* 2013:1–16, 2013.

[89] Ma, L. and Chen, Y. Analysis of Caputo-Katugampola fractional differential system. *The European Physical Journal Plus,* 139(2):#171, 2024.

[90] Ma, R., Meng, Y., and Pang, H. The existence results of solutions to the nonlinear coupled system of Hilfer fractional differential equations and inclusions. *Fractal and Fractional,* 8(4):#194, 2024.

[91] Matar, M. M., Abbas, M. I., Alzabut, J., Kaabar, M. K., Etemad, S., and Rezapour, S. Investigation of the $p-$Laplacian nonperiodic nonlinear boundary value problem via generalized Caputo fractional derivatives. *Advances in Difference Equations*, 2021(1):1–8, 2021.

[92] Mawhin, J. *Topological Degree Methods in Nonlinear Boundary Value Problems*. American Mathematical Society, Providence, Rhode Island, 1979.

[93] Miller, K. S. and Ross, B. *An Introduction to the Fractional Calculus and Fractional Differential Equations.* John Willey and Sons, Inc., New York, 1993.

[94] Mohan Raja, M., Vijayakumar, V., and Veluvolu, K. C. An analysis on approximate controllability results for impulsive fractional differential equations of order $1 < r < 2$ with infinite delay using sequence method. *Mathematical Methods in the Applied Sciences,* 47(1):336–351, 2024.

[95] Ndiaye, A. and Mansal, F. Existence and uniqueness results of Volterra-Fredholm integro-differential equations via Caputo fractional derivative. *Journal of Mathematics,* 2021(1):#5623388, 2021.

[96] Nisar, K. S. Efficient results on Hilfer pantograph model with nonlocal integral condition. *Alexandria Engineering Journal,* 80:342–347, 2023.

[97] Patel, R., Vijayakumar, V., Nieto, J. J., Jadon, S. S., and Shukla, A. A note on the existence and optimal control for mixed Volterra-Fredholm type integro-differential dispersion system of third order. *Asian Journal of Control*, 25(3):2113–2121, 2023.

[98] Pazy, A. *Semigroups of Linear Operators and Applications to Partial Differential Equations.* Volume 44, Springer, 2012.

[99] Podlubny, I. *Fractional Differential Equations.* Academic Press, San Diego, 1999.

[100] Pradeesh, J. and Vijayakumar, V. Investigating the existence results for Hilfer fractional stochastic evolution inclusions of order $1 < \mu < 2$. *Qualitative Theory of Dynamical Systems,* 23(1):#46, 2024.

[101] Priyadharshini, A. and Vijayakumar, V. Discussion on the existence and controllability of Hilfer fractional stochastic differential equation with non-dense domain. *Journal of Control and Decision,* 1–16, 2024.

[102] Rathinasamy, S. and Yong, R. Approximate controllability of fractional differential equations with state-dependent delay. *Results in Mathematics,* 63(3):949–963, 2013.

[103] Raja, M. M. and Vijayakumar, V. Existence results for Caputo fractional mixed Volterra-Fredholm type integro-differential inclusions of order $r \in (1, 2)$ with sectorial operators. *Chaos, Solitons and Fractals,* 159:#112127, 2022.

[104] Redhwan, S. S., Shaikh, S. L, and Abdo M. S. Theory of Nonlinear Caputo-Katugampola fractional differential equations, arXiv:1911.08884, 2019.

[105] Rudin, W. *Real and Complex Analysis.* Tata McGraw-Hill Education, 2006.

[106] Sakthivel, R., Ren, Y., and Mahmudov, N. I. On the approximate controllability of semilinear fractional differential systems. *Computers and Mathematics with Applications,* 62(3):1451–1459, 2011.

[107] Saravanakumar, S. and Balasubramaniam, P. Non-instantaneous impulsive Hilfer fractional stochastic differential equations driven by fractional Brownian motion. *Stochastic Analysis and Applications,* 39(3):549–566, 2021.

[108] Sathiyaraj, T. and Balasubramaniam, P. Null controllability of nonlinear fractional stochastic large-scale neutral systems. *Differential Equations and Dynamical Systems,* 27:515–528, 2019.

[109] Salim, A., Benchohra, M., Lazreg, J. E., and N'guérékata, G. Nonlinear implicit generalized Hilfer type fractional differential equations with non-instantaneous impulses. *Discrete and Continuous Dynamical Systems-S*, 17(5&6):2234–2250, 2024.

[110] Salem, A. and Alharbi, K. N. Total controllability for a class of fractional hybrid neutral evolution equations with non-instantaneous impulses. *Fractal and Fractional,* 7(6):#425, 2023.

[111] Samina, Shah, K., and Khan, R. A. Stability theory to a coupled system of nonlinear fractional hybrid differential equations. *Indian Journal of Pure and Applied Mathematics,* 51:669–687, 2020.

[112] Samoilenko, A. M. and Perestyuk, N. A. *Impulsive Differential Equations.* World Scientific, 1995.

[113] Sevinik Adigüzel, R., Aksoy, Ü., Karapinar, E., and Erhan, İ. M. On the solution of a boundary value problem associated with a fractional differential equation. *Mathematical Methods in the Applied Sciences,* 47(13):10928–10939, 2024.

[114] Sevinik Adigüzel, R., Aksoy, Ü., Karapinar, E., and Erhan, İ. M. Uniqueness of solution for higher-order nonlinear fractional differential equations with multi-point and integral boundary conditions. *Revista de la Real Academia de Ciencias Exactas, Físicas y Naturales. Serie A. Matemáticas*, 115(3):#155, 2021.

[115] Shafiullah, Shah, K., Sarwar, M., and Abdeljawad, T. On theoretical and numerical analysis of fractal-fractional non-linear hybrid differential equations. *Nonlinear Engineering,* 13(1):#20220372, 2024.

[116] Shah, K., Ahmad, I., Nieto, J. J., Rahman, G. U., and Abdeljawad, T. Qualitative investigation of nonlinear fractional coupled pantograph impulsive differential equations. *Qualitative Theory of Dynamical Systems,* 21(4):#131, 2022.

[117] Shah, K. and Hussain, W. Investigating a class of nonlinear fractional differential equations and its Hyers-Ulam stability by means of topological degree theory. *Numerical Functional Analysis and Optimization,* 40(12):1355–1372, 2019.

[118] Sheng, Y. and Zhang, T. The existence theory of solution in Sobolev space for fractional differential equations. *Applied Mathematics Letters,* 149:#108896, 2024.

[119] Shukla, A. and Patel, R. Controllability results for fractional semilinear delay control systems. *Journal of Applied Mathematics and Computing,* 65:861–875, 2021.

[120] Shukla, A., Vijayakumar, V., and Nisar, K. S. A new exploration on the existence and approximate controllability for fractional semilinear impulsive control systems of order $r \in (1, 2)$. *Chaos, Solitons and Fractals,* 154:#111615, 2022.

[121] Sousa, J. V. D. C. and de Oliveira, E. C. On the Ulam-Hyers-Rassias stability for nonlinear fractional differential equations using the $\Psi-$Hilfer operator. *Journal of Fixed Point Theory and Applications,* 20(3):#96, 2018.

[122] Sousa, J. V. D. C., Kucche, K. D., and Capelas de Oliveira, E. On the Ulam-Hyers stabilities of the solutions of $\Psi-$Hilfer fractional differential equation with abstract Volterra operator. *Mathematical Methods in the Applied Sciences,* 42(9):3021–3032, 2019.

[123] Stynes, M. and Gracia, J. L. A finite difference method for a two-point boundary value problem with a Caputo fractional derivative. *IMA Journal of Numerical Analysis,* 35(2):698–721, 2015.

[124] Sutar, S. T. and Kucche, K. D. On nonlinear hybrid fractional differential equations with Atangana-Baleanu-Caputo derivative. *Chaos, Solitons and Fractals,* 143:#110557, 2021.

[125] Sun, S., Zhao, Y., Han, Z., and Li, Y. The existence of solutions for boundary value problem of fractional hybrid differential equations. *Communications in Nonlinear Science and Numerical Simulation,* 17(12):4961–4967, 2012.

[126] ur Rahman, G., Wahid, F., Gómez-Aguilar, J. F., and Ali, A. Analysis of multiterm arbitrary order implicit differential equations with variable type delay. *Physica Scripta,* 99(11):#115246, 2024.

[127] Varun Bose C. S. and Udhayakumar R. A note on the existence of Hilfer fractional differential inclusions with almost sectorial operators. *Mathematical Methods in the Applied Sciences,* 45(5):2530–2541, 2022.

[128] Vivek, D., Kanagarajan, K., and Elsayed, E. Some existence and stability results for Hilfer-fractional implicit differential equations with nonlocal conditions. *Mediterranean Journal of Mathematics,* 15:1–21, 2018.

[129] Wanassi, O. K., Bourguiba, R., and Torres, D. F. Existence and uniqueness of solution for fractional differential equations with integral boundary conditions and the Adomian decomposition method. *Mathematical Methods in the Applied Sciences,* 47(5):3582–3595, 2024.

[130] Wang, H. and Jiang, J. Existence and multiplicity of positive solutions for a system of nonlinear fractional multi-point boundary value problems with $p-$Laplacian operator. *Journal of Applied Analysis and Computation*, 11:351–366, 2021.

[131] Wang, J. and Zhou, Y. Existence and controllability results for fractional semilinear differential inclusions. *Nonlinear Analysis: Real World Applications,* 12(6):3642–3653, 2011.

[132] Xiao, S. and Li, J. New result on finite-time stability for Caputo-Katugampola fractional-order neural networks with time delay. *Neural Processing Letters,* 55(6):7951–7966, 2023.

[133] Yang, M. and Wang, Q. Existence of mild solutions for a class of Hilfer fractional evolution equations with nonlocal conditions. *Fractional Calculus and Applied Analysis,* 20(3):679–705, 2017.

[134] Zeng, B. and Wang, S. Existence for nonlinear fractional evolutionary equations involving ψ-Caputo fractional derivative. *Journal of Applied Analysis and Computation,* 14(3):1414–1433, 2024.

[135] Zerbib, S., Hilal, K., and Kajouni, A. On the hybrid fractional semilinear evolution equations. *International Journal of Nonlinear Analysis and Applications,* 16(1):307–318, 2024.

[136] Zhang, X. M. On the initial value problem of impulsive differential equation involving Caputo-Katugampola fractional derivative of order $q \in (1, 2)$. *International Journal of Dynamical Systems and Differential Equations,* 12(1):75–105, 2022.

[137] Zhao, Y., Sun, S., Han, Z., and Li, Q. Theory of fractional hybrid differential equations. *Computers and Mathematics with Applications,* 62(3):1312–1324, 2011.

[138] Zhou, Y. *Basic Theory of Fractional Differential Equations.* World Scientific, 2014.

List of published/communicated papers:

1. Devi, D. and Borah, J. Existence of solutions for a nonlinear nonlocal hybrid functional fractional differential equation. *Rocky Mountain Journal of Mathematics*, 53(5):1459–1467, 2023.

2. Devi, D. and Borah, J. On the solution of nonlinear nonlocal Volterra-Fredholm type hybrid fractional differential equation. *Indian Journal of Pure and Applied Mathematics,* 2023:1–12, 2023.

3. Devi, D. and Borah, J. Results on existence, uniqueness and stability of a impulsive Caputo-Katugampola hybrid FDE with $p-$Laplacian operator. *Mathematical Methods in the Applied Sciences*, 2025(0):1–12, 2025.

4. Devi, D. and Borah, J. Existence, uniqueness, and Hyers-Ulam stability for an implicit hybrid fractional differential equation with $p-$Laplacian operator. (Communicated)

5. Devi, D. and Borah, J. Existence and exact controllability for a perturb evolution inclusions governed by Hilfer fractional derivatives. (Communicated)

6. Devi, D. and Borah, J. Multipoint BVP of a perturb FDE governed by generalised Caputo derivative via topological degree theory. (Communicated)

List of conference presentation:

1. Devi, D. Existence results for a boundary value problem of Caputo type hybrid fractional differential equation, National Conference on Advances in Mathematical Sciences (NCAMS-2022), 22-23 December 2022, organised by Gauhati University.

2. Devi, D. On solution to a special class of hybrid differential equations with fractional derivative, International Conference on Fractional Calculus: Theory, Applications and Numerics, 27-29 January 2023, organised by National Institute of Technology Puducherry, Karaikal.

3. Devi D. Existence of solution for a nonlinear nonlocal Volterra-Fredholm type hybrid fractional differential equation, International Conference on Pure and Applied Mathematics (ICPAM-2023), 26-28 October 2023, organised by Dr B R Ambedkar National Institute of Technology Jalandhar.

4. Devi, D. On solution to a first kind of hybrid fractional differential equation, International Conference on Role of Mathematics for the Development of Science and Society , 21-22 December 2023, organized by Department of Mathematics, Tripura University.