

List of Publications

Journal Publications

Kunwar Gaurav Singh and **Tinesh Pathania**. Development and Real Field Application of Meshless Generalized Finite Difference Method for Unconfined Groundwater Flow Modelling. *Mathematics and Computers in Simulation*.

Tinesh Pathania (2025). BIOEFGM II: Two-dimensional meshless model to simulate the aerobic and anaerobic biodegradation of BTEX contaminant through multiple electron acceptors in groundwater. *Engineering Analysis with Boundary Elements*, 171,106089.

Ravi Kumar Mishra, Bandita Barman and **Tinesh Pathania** (2024). Three-dimensional modeling of hydro-morphodynamic characteristics of mining affected alluvial channel using TELEMAC and GAIA. *Physics of Fluids*, 36(10).

Ganaraj Dalal, **Tinesh Pathania**, Akash Koppa and Vittal Hari (2024). Drivers and mechanisms of heatwaves in South West India. *Climate Dynamics*, 1-15.

Tinesh Pathania, Andrea Bottacin-Busolin and T.I. Eldho (2023). Evaluating the effect of aquifer heterogeneity on multiobjective optimization of in-situ groundwater bioremediation. *Engineering Analysis with Boundary Elements*, 148:336-350.

Tinesh Pathania, T.I. Eldho and Andrea Bottacin-Busolin (2020). Optimal design of in-situ bioremediation system using the meshless element-free Galerkin method and particle swarm optimization. *Advances in Water Resources*,144:103707.

Tinesh Pathania, T.I. Eldho and Andrea Bottacin-Busolin (2020). Coupled simulation of groundwater flow and multispecies reactive transport in an unconfined aquifer using the element-free Galerkin method. *Engineering Analysis with Boundary Elements*, 121:31–49.

Tinesh Pathania and T.I. Eldho (2020). A moving least squares based meshless element-free Galerkin method for the coupled simulation of groundwater flow and contaminant transport in an aquifer. *Water Resources Management*, 34: 4773–4794.

Tinesh Pathania, Andrea Bottacin-Busolin, A.K. Rastogi and T.I. Eldho (2019). Simulation of groundwater flow in an unconfined sloping aquifer using the element-free Galerkin method. *Water Resources Management*, 33: 2827-2845.

Conference Papers

Kunwar Gaurav Singh and Tinesh Pathania (2025). Optimization of groundwater pumping rates using meshless simulation-based optimization model. *EGU General Assembly 2025*, 27 April–2 May 2025.

Kunwar Gaurav Singh and Tinesh Pathania (2024). Modeling groundwater flow in a confined aquifer by using a strong-form meshless method. *HYDRO International Conference 2024*, 18–20 December 2024.

Ravi Kumar Mishra, Bandita Barman and Tinesh Pathania (2024). Estimating bathymetry of a mining affected straight alluvial Channel. *HYDRO International Conference 2024*, 18–20 December 2024.

Tinesh Pathania and T.I. Eldho (2022). Effect of hydraulic gradient on the optimal cost of in-situ groundwater bioremediation. *EGU General Assembly 2022*, 23–27 May 2022.

Tinesh Pathania, T.I. Eldho and Andrea Bottacin-Busolin (2021). Effect of soil heterogeneity on the optimal design of in-situ groundwater bioremediation systems. *EGU General Assembly 2021*, online, 19–30 April 2021.

Tinesh Pathania and T.I. Eldho (2021). Groundwater flow modeling in a heterogeneous porous medium using

meshless method. *HYDRO International Conference 2021*, online, 23–25 December 2021.

Tinesh Pathania and T.I. Eldho (2020). Optimal in-situ bioremediation system design for contaminated groundwater using meshless EFGM simulation and PSO. *World Environmental and Water Resources Congress, ASCE*.

Tinesh Pathania and T.I. Eldho (2019). Simulation of aerobic biodegradation of a hydrocarbon contaminant in the groundwater using the element-free Galerkin method. *ISH - HYDRO 2019 International Conference*. Osmania University, Hyderabad, India, 18-20 December 2019.

Tinesh Pathania and T.I. Eldho (2019). Meshless simulation of multispecies reactive transport in a porous medium using the element-free Galerkin method. *International Groundwater Conference (IGWC-2019)*. IIT Roorkee, Roorkee, India, 21-24 October 2019.

Tinesh Pathania, Andrea Bottacin-Busolin and A.K Rastogi (2018). Simulation of coupled groundwater flow and contaminant transport in a confined aquifer using the meshless element free Galerkin method. *EGU General Assembly*. Vienna, Austria, Vienna, 8-13 April 2018.

Tinesh Pathania and A.K Rastogi (2017). Groundwater flow simulation in confined aquifer by meshless element free Galerkin method. *10th World Congress of EWRA on Water Resources and Management*. Athens, Greece, 5-9 July 2017.

Tinesh Pathania (2016). Simulation of advective-dispersive transport in a porous medium using the operator splitting technique. *Sixth International Congress on Computational Mechanics and Simulation (ICCMS 2016)*. IIT Bombay, Mumbai, India, 27 June-1 July 2016.