

Publications in International Journals

- Akanksha Srivastava, Renu Valsala, Sheeja Jagadevan. Biogeochemical modelling to assess the effect of bioclogging on multiple electron acceptor-mediated petroleum hydrocarbon bioremediation in vadose zone. Environmental Science and Pollution Research, Year 2024. DOI:<https://doi.org/10.1007/s11356-024-33232-x>
- Gautam Roy, Renu Valsala. **Numerical model to assess the effect of hydrogeological characteristics of mine waste piles on capping efficiency in unsaturated conditions.** Multiscale and Multidisciplinary Modeling, Experiments and Design, Year 2024. DOI:[10.1007/s41939-024-00488-2](https://doi.org/10.1007/s41939-024-00488-2)
- Gautam Roy, Renu Valsala. Impact of capping on pyrite oxidation ion transport in unsaturated mine waste pile: A hydrogeochemical modeling study. Modeling Earth Systems and Environment, Year 2024. DOI:<https://doi.org/10.1007/s40808-024-01991-8>
- Gautam Roy, Renu Valsala. Hydrogeochemical modelling of pyrite oxidation ion mobility in unsaturated mine waste rock piles. Environmental Earth Sciences, Volume 83, Year 2024, Pages 127. DOI:<https://doi.org/10.1007/s12665-023-11414-z>
- Akanksha Srivastava, **Renu V**, Sheeja Jagadevan. Biogeochemical modelling to assess benzene removal by biostimulation in aquifers containing natural reductants. Environ Sci Pollut Res (2023). <https://doi.org/10.1007/s11356-023-25557-w>
- Akanksha Srivastava., **Renu V**. Numerical modeling to assess the effect of soil texture on transport and attenuation of petroleum hydrocarbons in unsaturated zone. Environ Sci Pollut Res (2023). <https://doi.org/10.1007/s11356-023-25557-w>
- **Renu V**, Suresh Kumar G. Numerical modeling on co-colloidal transport of BTEX in fractured rock. Environmental Earth Sciences. 81, 37 (2022). <https://doi.org/10.1007/s12665-021-10161-3>
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- **Renu V**, Suresh Kumar G. Co-colloidal BTEX and Microbial transport in a Saturated Porous System: Numerical Modeling and Sensitivity Analysis. Transport in Porous Media. 2019; 127 (2): 269-294. DOI: 10.1007/s11242-018-1191-2.
- **Renu V**, Suresh Kumar G. Mathematical modeling on mobility and spreading of BTEX in a discretely fractured aquifer system under the coupled effect of dissolution, sorption, and biodegradation. Transport in Porous Media. 2018; 123 (2): 421-452. DOI: 10.1007/s11242-018-1049-7.
- **Renu V**, Suresh Kumar G. Multispecies transport modeling on biodegradation of Benzene, Toluene and Xylene in a saturated fracture-matrix system with multiple electron acceptors. Environmental Engineering Science. 2018; DOI:10.1089/ees.2017.316.
- **Renu V**, Suresh Kumar G. Interaction of dissolution, sorption and biodegradation on transport of BTEX in a saturated groundwater system: numerical modeling and spatial moment analysis. Journal of Earth System Science. 2018; 127:53.
- **Renu V**, Suresh Kumar G. Multi-component transport of BTX in a discretely fractured aquifer with fracture-skin: numerical investigation and sensitivity analysis. Environmental Earth Sciences. 2017; 76(17): 1-15. DOI:10.1007/s12665-017-6956-3.

- **Renu V**, Suresh Kumar G. Benzene Dissolution and Transport in a Saturated Sinusoidal Fracture with non-uniform Flow: Numerical Investigation and Sensitivity Analysis. *Environmental Processes*. 2017; 4(3):587-601. DOI: 10.1007/s40710-017-0252-9.
- **Renu V**, Suresh Kumar G. Numerical modeling on benzene dissolution into groundwater and transport of dissolved benzene in a saturated fracture-matrix system. *Environmental Processes*. 2016; 3(4):781-802. DOI: 10.1007/s40710-016-0166-y.
- **Renu V**, Suresh Kumar G. Temporal moment analysis of multi-species radionuclide transport in a coupled fracture-skin-matrix system with a variable fracture aperture. *Environmental Modeling & Assessment*. 2016; 21(4): 547-562. DOI: 10.1007/s10666-016-9515-5.
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- **Renu V**, Suresh Kumar G. Numerical modeling and spatial moment analysis of solute mobility and spreading in a coupled fracture-skin-matrix system. *Geotechnical and Geological Engineering*. 2012; 30(6): 1289-1302. DOI: 10.1007/s10706-012-9540-3.

International Conferences

- Akanksha Srivastava, Renu Valsala. and Sheeja Jagadevan, 2024, June. Nitrate Mediated Biostimulation of Petroleum-based NAPLs in Subsurface Environment with Dynamic pH Scenarios: A Hydrogeochemical Modelling Approach. **21st Annual Meeting of the Asia Oceania Geosciences Society** held at Pyeongchang-gun, Gangwon-do during the period 23 Jun to 28 Jun 2024
- Akanksha Srivastava, Renu Valsala, Sheeja Jagadevan. **Hydrogeobiochemical Modelling for Bioremediation of Mono-Aromatic Hydrocarbons Using Nitrate-Sulfate-Reducing Assemblages in Aquifers**. **EGU General Assembly 2024**. Vienna, Austria, 14–19 Apr 2024, EGU24-4243, <https://doi.org/10.5194/egusphere-egu24-4243>, 2024.
- Akanksha Srivastava, Renu Valsala, Sheeja Jagadevan. Biogeochemical Modelling for Monitoring the Impact of Microbial Clogging on Benzene Bioremediation in Unsaturated Aquifers. In *AGU Fall Meeting Abstracts* (Vol. 2023, pp. H11B-07). **AGU Fall Meeting 2023**, held in San Francisco, CA, 11-15 December 2023
- Akanksha Srivastava. and Valsala, R., 2022. “Numerical Modelling of Benzene Biodegradation in Aquifers Under the Presence of Multiple Electron Acceptors”. *Indian Geotechnical Conference (IGC) 2022*. 15 th – 17 th December, 2022, Kochi Chapter.
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- Renu V, Suresh Kumar G. Numerical Modeling on Two-Phase Fluid Flow in a Coupled Fracture-Skin-Matrix System. *AGU Fall Meeting* held at San Francisco between 14th and 18th Dec 2015. Abstract ID: 69054, Paper Number: H54F-05.
- Renu V, Suresh Kumar G. Numerical Modeling on Fate and Migration of BTEX dissolving from a Residual Source Zone within a Saturated Groundwater System. *7th International Groundwater Conference (IGWC-2017) on Groundwater Vision 2030 – “Water Security,*

Challenges & Climate Change Adaption” (Theme: 6 & Technical Session: 10) held at New Delhi-India during 11-13 Dec2017.

- Renu V, Suresh Kumar G. Modeling Investigations on Sorption of Petroleum Hydrocarbons to Clay Minerals in a Saturated Porous Aquifer. Proceedings of the Fourth International Conference in Ocean Engineering (ICOE2018) Part of the Lecture Notes in Civil Engineering book series (LNCE, volume 22), 2019.