# JUGAL MOHAPATRA

Associate Professor
Department of Mathematics
National Institute of Technology Rourkela, India, 769008
Office: +91-661-246-2711
Email:  jugal@nitrkl.ac.in

## Education:

- Ph.D. in Mathematics, IIT Guwahati.
- M.Sc. and M. Phil. in Mathematics, Utkal University, Odisha.

## Research Area:
- Numerical Analysis,
- Singularly Perturbed Differential Equations
- Fractional Integro/Differential Equations

## Selected Publications:

- Title : Parameter-uniform numerical methods for global solution and global normalized flux of singularly perturbed boundary value problems using grid equidistribution, Authors: **Jugal Mohapatra** and S. Natesan, Journal: Computers & Mathematics with Applications, 60(7), 1924-1939, 2010

- Title: Uniformly convergent numerical method for singularly perturbed  differential difference equation using grid equidistribution, Authors: **Jugal Mohapatra** and S. Natesan, Journal: International Journal for Numerical Methods in Biomedical Engineering, 27(9), 1427-1445, 2011

- Title:  Numerical simulation and convergence analysis for a system of nonlinear singularly perturbed differential equations arising in population dynamics
  Authors:   D. Shakti and **Jugal Mohapatra,** Journal:   Journal of Difference Equations and Applications, Vol. 24(7), 1185-1196, 2018.

- Title:  A fourth-order numerical scheme for singularly perturbed delay parabolic problem arising in population dynamics, Authors:   L. Govindarao, **Jugal Mohapatra** and A. Das.
  Journal:   Journal of Applied Mathematics and Computing, Journal of Applied Mathematics and Computing, Vol. 63, 171–195, 2020.

- Title:  A moving mesh refinement based optimal accurate uniformly convergent computational method for a parabolic system of boundary layer originated reaction–diffusion problems with arbitrary small diffusion terms, Authors: Deepti Shakti, **Jugal Mohapatra**, Pratibhamoy Das, Jesus Vigo-Aguiar. Journal: Journal of Computational and Applied Mathematics, 2020, https://doi.org/10.1016/j.cam.2020.113167.

## Sponsored Projects:

- Title: Asymptotic and numerical approach for boundary layer development of partial differential equations with delayed arguments Sponsor: SERB, May 2018 to May 2020.
- Title: Parameter-uniform numerical schemes for singularly perturbed parabolic convection – diffusion problems exhibiting boundary layer, CSIR, April 2015 to March 2018.
- Title: Robust and Efficient Numerical Methods for Singularly Perturbed differential equations using Grid adaptivity, DST, Govt. of India, July 2014 to June 2017.