



## Dr. ASHUTOSH RATH – Ph. D.

**Name** : ASHUTOSH RATH  
**Designation** : Senior Assistant Professor  
**Department** : CIVIL ENGINEERING  
(Joined the Institute in 2013)  
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### RESEARCH INTERESTS

- Irrigation and Water Management • Groundwater, Hydrology, Soft Computing

### ACADEMIC QUALIFICATIONS

- **Ph. D.** (Optimal Irrigation Water Management, **VSSUT Burla, Odisha, India**)
  - **M. Tech.** (Water Resources Engineering) **VSSUT Burla, Odisha, India**
  - **B.TECH.** (Civil Engineering, **VSSUT Burla, Odisha, India**)

### Teaching Experience/Industrial Experience/Research Experience

**Teaching Experience – 11 years**

**Industrial Experience – 14 years**

**Research Experience- 5 years**

## PUBLICATIONS

### JOURNAL

Détermination of flow paramètres in Mundoghat irrigation canal of Hirakud canal system using Flow measuring instrument, Measurement Elsevier, 136,298-306,2019

Evaluation of performance of irrigation canals using benchmarking techniques a case study of Hirakud dam canal system Odisha, India, ISH Journal of Hydraulic Engineering, Taylor & Francis, 26(1),51-58,2018

Optimal allocation of agricultural land for crop Planning in Hirakud canal command area using, swarm intelligence technique, ISH Journal of Hydraulic Engineering, Taylor & Francis, 27(1)38-50,2021

Water allocation from Hirakud Dam, Odisha, India for irrigation and power generation using optimization techniques, ISH Journal of Hydraulic Engineering, Taylor & Francis, 27(3),274-288,2021

Optimal Allocation of Water for Irrigation and Power Generation—A Case Study of Hirakud Reservoir, Odisha, India. Taiwan Water Conservancy, 66(3),21-34,2018

Discharge Measurement in Part of Hirakud Canal System, Odisha, India, Using Chiu's Equation, Journal of The Institution of Engineers (India): Series A, 100(3),479-486,2019

CONJUNCTIVE USE OF GROUNDWATER AND SURFACE WATER IN A PART OF HIRAKUD COMMAND AREA, International Journal of Engineering and Technology (IJET), 9(4),3002-3010,2017

Optimal Irrigation Management at Mundoghat Canal Command Area of Hirakud Canal System using Particle Swarm Optimization, International Journal of Scientific Engineering and Research (IJSER), 5(7),180-185,2015

Flow Measurement in Huma Tail distributary of Hirakud Command Area, India using Chiu's Equation, *Pertanika J. Sci. & Techno.* 27(1),409-420,2019

Impact of Climate Change on the Mahanadi Basin – A Case Study, *Disaster Advances*, 11 (5) 38-42, (2018)

Water quality assessment for River Mahanadi of Odisha, India using statistical techniques and Artificial Neural Networks, *Journal of Cleaner Production* Elsevier, 417 (2023) 137713

Flood Management in Hirakud Reservoir using Particle Swarm Optimization, *Disaster Advances*, 11(4),11-17,2018

### List of papers published in Proceedings of National and International conferences

Rath, A., Samantaray, S. and Swain, P. C.( 2016). Study of flow properties in Paramanpur canal Odisha, India using entropy theory '*International Conference on Recent Advances in Mechanics & Materials*, 113-119.

Rath, A., Biswal, S., Samantaray, S. and Swain, P.C. (2016). Derivation of Optimal Cropping pattern in part of Hirakud command area using Cuckoo Search' '*International Conference on Advanced Material Technologies(ICAMT)*' IOP Publication,1-11.

Rath, A., Biswal, S., Samantaray, S. and Swain, P.C. (2017). Discharge measurement in Sambalpur Distributary of Hirakud canal system, Odisha, India using Chiu's equation, *49th Indian Water Works Association Convention*, 1-9.

Rath, A., Biswal, S., Samantaray, S. and Swain, P.C. (2017). Application of Genetic Algorithm to derive an Optimal Cropping Pattern in Part of Hirakud Command'' *ICCAN, 2017, KITS, SPRINGER, Progress in Computing, Analytics and Networking, Springer, Singapore*, 711-721

### Chapter in Edited Book

Optimization of the Cropping Pattern using Cuckoo Search Technique,*Smart Techniques for a Smarter Planet, Studies in Fuzziness and Soft Computing, Springer*, 19–35, (2019)

Impact Assignment of Integrated Watershed Management in the Micro Watersheds of Sambalpur District, Odisha, India  
*Handbook of Water Harvesting and Conservation: Case Studies and Application Examples*, John Wiley & Sons, Ltd, 341-358, (2021)

### Awards

#### **DAMODAR SAHOO MEMORIAL AWARD**

Rath, A. and Swain, P.C. (2017) Optimal Cropping pattern in Senhapali distributary of Hirakud command using Cuckoo search, *Technical Annual 58<sup>TH</sup>Session, The Institution of Engineers (India)*, 52-59.

#### **ER. AVAYA CHANDRA NAYAK MEMORIAL AWARD**

Rath, A. and Swain, P.C.(2018) Derivation of optimal cropping Pattern for the command area of Paramanpur distributary, Sambalpur, India using Particle Swarm Intelligence Technique, *Technical Annual 59<sup>TH</sup> Session, The Institution of Engineers (India)*, 82-86.