

Faculty Profile

1. Name: **Dr. Maya Rajnarayan Ray**

2. Department: Civil Engineering

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4. Phone Number: +91 7376347366

5. Office Address: Department of Civil Engineering, BIT Sindri, Dhanbad

6. Qualification:

S. No	Degree	Specialization	Institute
1	D. E.	Civil Engineering	University Polytechnic, The M.S. University of Baroda, Vadodara, Gujarat
2	B. E.	Civil Engineering	Faculty of Engineering, The M.S. University of Baroda, Vadodara, Gujarat
3	M. E.	Irrigation and Water Management	Faculty of Engineering, The M.S. University of Baroda, Vadodara, Gujarat
4	Ph. D.	Water Resources Engineering	Indian Institute of Technology, Guwahati Assam

7. Area of Specialization: Water Resources Engineering & Management

8. Research Interest

- (i) **Niche area of theses work based on the evidence of awarded certificate:** [a] **Master Dissertation:** Water Irrigation Management; [b] **Doctoral Thesis:** Operations of Hydro-Power project considering Downstream Impacts;

- (ii) **Research expertise based on evidence of published article / consultancy projects grant including 16 years research experience:** Reservoir Operation, Optimizations & Simulation, Synthetic Stream Flow Generation, Downstream Impact Study of Dam / Hydropower Projects & River Engineering; Hydraulic Structure & Computational Hydraulics; Fluid Flow & Computational Dynamics.

9. PhD (Guided): -

10. Subjects Taught:

- Applied Mechanics,
- Fluid Mechanics
- Water Resources Engineering –II,
- Water Resources Engineering & Management
- Environmental Management,
- Hydraulics & hydraulic Machines,
- Transportation Engineering,
- Geoinformatics, GIS & RS,
- Open Chanel Flow,
- Water Resources System Planning & Management,
- Dam Engineering,
- River Engineering & Hydraulics,
- Surveying

I) UG:-35

II) PG:-2

11. Professional Experience:

I) Teaching Experience:

Sl. No.	Position held	Name of Organization	from	to
1	Professor	G. H. Rasoni College of Engineering, Nagpur	December 2018	February 2021
2	Professor	G. H. Rasoni University, Amravati	August 2018	December 2018
3	Professor	Galgotia College of Engineering & Technology, Greater Noida, Gautam Budhnagar, UP	August 2014	July 2018
4	Professor	Inderprastha Engineering College Sahibabad, Ghaziabad, UP	August 2012	July 2014
5	Professor	Sri Ramswaroop Memorial College of Engineering & Management Lucknow, UP	August 2011	August 2012
6	Assistant	Institute of Technology,	March	July 2011

	Professor	Arba Minch University, SNNP Regional State, Ethiopia	2010	
7	Teaching Assistant	Indian Institute of Technology, Guwahati	July 2006	February 2010

II) Research Experience:

Sl. No.	Position held	Name of Organization	from	to
1	Full time Doctoral Program	Indian Institute of Technology, Guwahati	July 2006	February 2010
2	Research Civil Engineer	CECRI, Karaikudi, TN	August 2005	June 2006
3	Development Organizer	AKRSP-India [an associate unit of Aga Khan Foundation, Geneva-Switzerland] in Ahmadabad Zonal Office & posted at Khandwa	March 2004	July 2005

III) Industrial Experience:

Sl. No.	Position held	Name of Organization	From	to
1	Project Observer & Coordinator	Area Networking & Development Initiatives [ANANDI, NGO] – Gujarat, India	April 2002	August 2002
2	Project Observer & Coordinator	Road & Building Department, Government of Gujarat, India	March 2001	January 2002
3	Full time Consultant [Civil Engineer]	Aditya Construction Company & Designing Firm [P.L.C.], Bhavnagar, Gujarat, India;	July 1998	February 2001

12. Publications:

D) International Journal:

1. **Title of Articles:** Synthetic streamflow generation of River Gomati using ARIMA Model; **Name of the Authors:** Hemanshu Singh and Maya Rajnarayan Ray; **Name of the Journal:**

Advances in Civil Engineering and Infrastructural Development 80, (2019) 255 – 264; **Publisher:** Springer Nature, Singapore Pte Ltd. 2021; Journal No: 11269, **ISSN** (Print): 2366-2557; **ISSN** (Online): 2366-2565.

2. **Title of Articles:** Influence of Time Discretization and Input Parameter on the ANN Based Synthetic Streamflow Generation; **Name of the Authors:** Maya, R. Ray and Sarma, A.K. ; **Name of the Journal:** *Water Resources Management*; 30, (2016) 4695 – 4711; **Publisher:** Springer Publishing Company, New York City, USA; **Sponsoring Agency:** European Water Resource Association; Journal No: 11269, **ISSN** (Print): 0920 - 4741; **ISSN** (Online): 1573 - 1650.
3. **Title of Articles:** Minimizing Diurnal Variation of Downstream Flow in Hydroelectric Projects to Reduce Environmental Impact; **Name of the Authors:** Maya R. Ray and Sarma, A.K.; **Name of the Journal:** *Journal of Hydro - Environment Research*; 05, (2011) 177 - 185; **Publisher:** ELSEVIER, Amsterdam, Netherland; **Sponsoring Agency:** Korean Water Resource Association; **ISSN:** 1570 - 6443.
4. **Title of Articles:** Importance of Input Parameter Selection for Synthetic Stream Flow Generation of Different Time Step Using ANN Techniques; **Name of the Authors:** Maya R. Ray and Sarma, A.K.; **Name of the Journal** (Research Book / Research Monograph / Yearly Journal): *Proceeding of the International Joint Conference on Computational Intelligence*; 01 [NCTA – IJCCI] (2011) 211 - 217; **Special Issues:** Neural Computation Theory and Applications, Pattern Recognition; Supervised and Unsupervised Learning; **Sponsoring Agency:** UPEC, Paris, France; **ISBN:** 978-989-8425-84-3; **Remark:** Proceeding of IJCCI have recognition as a research book / Monograph for International conference.
5. **Title of Articles:** Reservoir Project in North-East India: Scope and Constraints; **Name of the Authors:** Sarma, A.K. & Maya R. Ray; **Name of the Journal:** *International Journal of Innovative Technology & Adaptive Management*; 1(3) (2013) 14 – 19; **Publisher:** IJITAM, Assam, India; **ISSN:** 2347 - 3622.
6. **Title of Articles:** The Comparative Studies on Hydro-environments of Ground Water and Surface Water Quality: A Case Study; **Name of the Authors:** Maya R. Ray and Kumar S.K.; **Name of the Journal:** *International Journal of Engineering Development and Research*; 05 (2017) 172-182; **Publisher:** IJTDR – RMS, Ahmadabad Gujarat; **ISSN:** 2321 – 9339.
7. **Title of Articles:** Impact of Hydraulics Structure on the Downstream of the River; **Name of Author:** Maya R. Ray (Single authorship); **Name of the Journal:** *International Journal of Engineering Development and Research*; Accepted in May 2017; **Journal Impact Factor:** 4.98 as per IJTDR web site; **Publisher:** IJTDR – RMS / 1702028; **ISSN NO:** 2321 – 9339.

8. **Title of the Articles:** A Hybrid Model for Synthetic Stream Flow Generation; **Name of the Authors:** Maya, R. Ray, Sarma, A.K & Singh V.P.; **Name of the Journal:** *Water Resource Management*; **(Under Preparation)**; **Publisher:** Springer Publishing Company, New York City, USA; **Sponsoring Agency:** European Water Resource Association; Journal No: 11269, **ISSN (Print):** 0920 - 4741; **ISSN (Online):** 1573 - 1650.
9. **Title of the Articles:** Environmental Impact and Losses of Run-of the River Hydroelectric Project Communicated; **Name of the Authors:** Maya R. Ray and Sarma, A.K.; **Name of the Journal:** *Journal of Hydro-Environment Research*; (Communicated); **Publisher:** Elsevier, Amsterdam, Netherlands; **Sponsoring Agency:** Korean Water Resource Association; **ISSN No:** 1570-6443

II) International Conference :

1. **Title of Article:** Synthetic Stream Flow Generation of River Gomti Using ARIMA Model; **Name of the Authors:** Hemanshu Singh and Maya R.Ray; **Name of Periodical / Conference Proceeding:** International Conference On “Recent Advancements in Civil Engineering and Infrastructural Developments-2019” (5th and 6th July 2019) **Name of Conference with Organizer Detail:** International Conference On “Recent Advancements in Civil Engineering and Infrastructural Developments-2019, G.H. Raisonni College of Engineering, Nagpur and GHRC Labs; **Sponsored by:** G.H. Raisonni College of Engineering, Nagpur and GHRC Labs; **Publication Partner:** Springer Nature Ltd.; **Venue: Date:** G.H. Raisonni College of Engineering, Nagpur 2019, 5th – 6th July; **Role of 2st Corresponding Author in Conference:** Invited Lecture.
2. **Title of Article:** Reservoir Optimization for Mitigating Downstream Impact of Dams built on a Tributary of the Brahmaputra; **Name of the Authors:** Maya R. Ray and Sarma, A.K.; **Name of Periodical / Conference Proceeding:** 1st Conference Proceeding of Core Professional Group for the Brahmaputra; CPGB (2010) 18 – 19; **Name of Conference with Organizer detail:** 1st National Conference of CPGB (a registered non- government organization formed in September 2010 under society registration act XXI of 1860), Head office: Guwahati, Assam; **Conference Venue:** Hotel Gateway Grandeur, G. S. Road, Guwahati, Assam, India; **Date:** 2010, 18th – 19th December; **Role of 1st Author in Conference:** Oral Lecture & Poster presentation.
3. **Title of Article:** Simulation Study for Minimizing Diurnal Variation of Flow in a Hydroelectric Project to Reduce Downstream Impact; **Name of Authors:** Maya R. Ray and Sarma, A.K.; **Name of Periodical / Conference Proceeding:** Scientific Proceeding of 3rd Perspective on Current & Future State of Water Resources & The Environment; EWRI-IITM (2010) 000927 - 000937; **Name of Conference with organizer detail:** International Conference organized by The Environmental and Water Resources Institute of American Society of Civil Engineers and Indian Institute of Technology Madras, Chennai, Tamilnadu,

India; **Date:** 2010, 5th - 7th January ; **Venue:** IIT Madras, India; **Role of 1st Author in Conference:** Participation and presented in poster.

4. **Title of Article:** Artificial Neural Network Based Synthetic Stream Flow Generation Model; **Name of the Authors:** Maya R. Ray and Sarma, A.K.; **Name of Periodicals /Conference Proceeding:** Scientific Proceeding of 3rd International Conference on Current and Future State of Water Resources and Environment; EWRI-IITM (2010) 000942 - 000952; **Name of Conference with organizer detail :** International Conference organized by The Environmental and Water Resources Institute of American Society of Civil Engineers and Indian Institute of Technology Madras, Chennai, Tamilnadu; **Date:** 2010, 5th - 7th January; **Conference Venue:** IIT Madras, India; **Role of 1st Author in Conference:** Invited Lecture.

III) National Journal :

1. **Title of Articles:** Assessment of downstream impacts and quantification of loss for project; **Name of the Authors:** Maya, R. Ray and Sarma, A.K.; **Name of the Journal:** *Indian Journal of Technical Education*; 12, (2012), 305 - 308; **Publisher:** Indian Society For Technical Education, Near Kata-aria Sarai, Shaheed Singh Road; New Delhi; **Sponsoring Agency:** All India Council of Technical Education, MHRD - Government of India; **ISSN:** 0971 - 3034.

IV) National Conference :

1. **Title of Article:** Assessment of Downstream Impacts and Quantification of Loss for Project; **Name of the Authors:** Maya R. Ray and Sarma, A.K.; **Name of Periodical / Conference Proceeding:** National Conference Proceeding on Emerging Vistas of Technology in 21st Century; PIET - EVOT (2012) 24-26; **Name of Conference with Organizer Detail:** Gujarat Technical University Vadodara; **Sponsored by:** Gujarat Technical University & Parul Institute of Engineering and Technology, Vadodara **Publication Partner:** The Indian Journal of Technical Education and Indian Society for Technical education; **Venue: Date:** Gujarat Technical University, L.D. College of Engineering Campus, Navrangpura, Ahmedabad, 2012, 14th – 15th April; **Role of 1st Author in Conference:** Invited Lecture.
2. **Title of Articles:** Synthetic Stream Flow Generation Model using Artificial Neural Network Technique; **Name of the Authors:** Maya R. Ray & Sarma, A.K.; **Name of Periodical /Conference Proceeding:** Annual Convention Proceeding of Association of Hydrologist of India on National Seminar of Recent Advances in Hydrology for Water Resources Development and Management; XXVII (2008) 14 -32; Chapter: II / Surface Hydrology; **Name of Conference with detail:** XXVII Annual convention of AHI on National Conference organized by Association of Hydrologist of India; **Date:** 2008, 21st - 22nd January; **Venue:** The M.S.U. of Baroda, Gujarat, India; **Role of 1st Author in Conference:** Invited Lecture.

V) Publication of Monographs /Reference Book Chapters for Undergraduate Students:

1 Title of Book Chapters: Analysis & Design of Hydraulics Structures; **Name of the Authors:** U. Mishra & Professor Dr. Maya Rajanarayan Ray; **Name of Book:** Quantum Book Series, **Year of Publication:** 2014, 1st Edition; **ISBN (CIN):** U22222UP-2011-PTC0-45661 under ministry of corporate affairs, Government of Utter Pradesh & Its registration number: 45661; **Name of Publisher:** Quantum Page Private Limited; **Publisher's Address:** 59/2/7, Site-4, Industrial Area, Sahibabad, and Ghaziabad - 201010, UP, India.

2 Title of Book Chapters: Open Channel Flow; **Name of the Authors:** U. Mishra & Dr. Maya Raj. Ray; **Name of the Book:** Quantum Book Series; **Year of Publishing:** 2015; **First Edition:** ISBN (CIN): U22222UP – 2011 - PTC0 -45661 under ministry of corporate affairs, Government of Utter Pradesh & its number of Registration: 45661; **Name of Publisher:** Quantum Page Private Limited; **Publisher Address:** 59/2/7, Site-4, Industrial Area, Sahibabad, Ghaziabad - 201010, UP, Delhi - NCR, India.

VI) Publications of Technical Reports:

1 Title: Participatory Irrigation management on Sukta Irrigation scheme, Khandwa district, MP, **Name of Magazine:** Annual Proceeding of Technical Report, **Publisher:** AKRSP (India) [a unit of Aga Khan Foundation, Geneva, and Fiscal Year of DPR: 2004-2005;

2. Title: Lift and Irrigation Management; **Publisher:** AKRSP (India), [Unit of Aga Khan Foundation], Fiscal

Year of DPR: 2004-2005.

VII) Publication of Full Research Work in Thesis Format:

1 Title of Ph.D. Thesis: Performance Evaluation of Salinity Ingress Structures in Bhavnagar District, Gujarat, India; **Name of the Author** [Role of the author during study period of M.E. (Civil Engineering) from Sept. 2002 to Feb. 2004: Regular Student]: Maya Raj. Ray; **Name of Thesis:** M.E. Thesis of Department of WREMI; **Publishing Year:** March 2004; **Name of Publisher/ Institute Copyright:** Central Library, M.S.U, Baroda, Gujarat; **Impact of Mentor detail** during study period of Master degree from 01/09/2002 to 14/03/2004: Dr. D. T. Shete. He was **Professor of Civil Engineering with specialization in WRE & Officiating Director of WREMI, The MSU, Baroda, Gujarat, India.**

2 Title of Master Dissertation: Reservoir Operations Considering Downstream Impact of a Hydroelectric Project; **Name of Author** [Role of the author during study period of Ph.D.(Civil Engineering) from 01/07/2006 to 14/03/2010: Teaching Assistant Fellow]: Maya Rajanarayan Ray; **Name of Thesis:** Ph.D. Thesis of Department of Civil Engineering; **Publishing Year:** April 2011; **Name of Publisher /Institute Copyright:** Central Library, **Indian Institute of Technology, Guwahati, Assam;** **Impact of Mentor detail** during study period of Doctoral degree from 01/07/2006 to 14/03/2010: Dr. A. K. Sarma. He was a **Professor of Civil Engineering with specialization in WRE & Dean of Student affairs, IIT Guwahati, Assam; India.**

13. Patents (Filed / Granted)” NA

S. No.	Name of the Inventor	Title of the Invention	Application / Patent No. (As applicable)	Year	Status (Filed / Granted)

14. Conference/ Workshop/Seminar/ Organized

Sl. No.	Title of Seminar / Conferences / Short – term Courses	Name of Coordinator	Funding / Sponsoring Agency	Date of Seminar / Conferences / Short – term Courses	No. of Participants
1.	One week FDP on “Water Resources System Planning, Management and Development for The Water Scarce Areas”	Dr. Maya R. Ray	TEQIP & BIT Sindri	26-30 June 2021	120
2.	International Conference On “Recent Advancements in Civil Engineering and Infrastructural Developments-2019” (Dr. Maya R. Ray (Co-coordinator)	G.H. Raison College of Engineering, Nagpur and GHRC Labs	5 th and 6 th July 2019	175

15. Symposium/ Workshop/Seminar/ Attended

Sl. No.	Title of Symposium/ Workshop/Seminar/ Short – term Courses	Date	Organizing Institute
1.	Urban Hydrology	2-6 August 2021	ATAL FDP, All India Council for Technical Education(AICTE)
2.	Inculcating Universal Human Values in Technical Education	22-26 December, 2020	All India Council for Technical Education(AICTE)
3.	The Joys, Opportunities and Challenges in Field Hydrological Research	2-6 November 2020	Department of Civil Engineering, IIT Guwahati and National Institute of Engineering Maysur, in Association with IISC Bengaluru and Global Institute for Water Security, University of Saskatchewan, Canada
4.	Current and Future State of Water Resources and the Environment	5 - 7 January 2010	EWRI of American Society of Civil Engineers and Indian Institute of

	(FDP)		Technology Madras, Chennai, India
5.	Recent Advances in Hydrology for Water Resources Development and Management (FDP)	21 – 22 January 2009	AHI- WREMI, The M.S. University Baroda, Gujarat
6.	Hydro informatics for Surface and Subsurface Water Resources (FDP)	9 - 13 June 2008	Department of Civil Engineering, IIT Guwahati and sponsored by AICTE New Delhi
7.	Flood Hazard Mitigation and Watershed Management (FDP)	1 - 5 December 2006	Department of Civil Engineering, IIT Guwahati and sponsored by AICTE New Delhi
8.	Hydro informatics and Flood Management (FDP - HFM)	16 - 20 Oct. 2006	Department of Civil Engineering, IIT Guwahati and sponsored by AICTE New Delhi
9.	Participatory Monitoring and Evaluation of Watershed Management (Workshop)	26 - 29 Oct. 2004	Watershed Organization Trust (WOTR), Ahmednagar, Maharashtra
10.	Application of GIS, Remote Sensing & GPS in Civil Engineering (Workshop)	10 - 15 Nov. 2003	Department of Civil Engineering, L.D. College of Engineering (Government of Gujarat) Ahemdabad-380015
11.	Rainwater Harvesting Including Roof Top Rainwater Harvesting (Workshop)	29 July 2003	Central Ground water Board (a research institute under Ministry of Water Resources, GOI Government of India), Ahmadabad
12.	Desalination & Membrane Technology : Present & Future [FDP/Workshop]	19 - 23 Feb. 2003	Central Salt and Marine Chemical Research Institute(CSIR National Laboratory), Bhavnagar, Gujarat

16. Administrative Position Held:

S. No.	Position Held	From (date/month/year)
1	HoD, Department of Civil Engineering Inderprastha Engineering College Sahibabad, Ghaziabad, UP	August 2012-July 2014
2	HoD, Department of Civil Engineering Galgotia College of Engineering & Management (GCET)	August 2014- October 2017

17. Award / Recognition Bestowed on Faculty (State / National / International)

(i) Examiner and Question Setter:

G. H. Raisoni University, Amravati & Saikheda Chhindwada and TMU (a State Private University), Moradabad, **Utter** Pradesh from the session of 2012 - 2015 for B. Tech. and M. Tech. course in civil engineering department;

(ii) **Theses Evaluated as External Examiner –cum- Referee:** Ph. D. Thesis (Civil Engineering) of Rashtra Sant Tukdoji Maharaj Nagpur University [a well-known State Government University of Maharashtra State] from 2016 – 2017;

(iii) **Member of Reviewer Board for Research Articles Publications in Journal:** (a) Journal of AIEEE - Annual Conference Proceeding in stream of Water resource engineering from 2017 onwards ; (b) International Journal of Engineering Development and Research from 2016;(c) International Journal of Scientific Research; (d) American Journal of Climate Change (AJCC)

(iv) **Board of Studies Membership /Academic committee for Syllabus Moderation:** GHRU Amravati Maharashtra, UPTU Lucknow in Water resource engineering for Undergraduate course (B. Tech. degree only) from 2015 to onwards and SRMU Lucknow from 2011 – 2012;

(v) **Preparation of Technical Reports :** Two DPR on Irrigation management for rural development scheme during service period of AKRSP –India;

(vi) **Editorial Member of Springer Nature:** A book series on "Advances in Civil Engineering and Infrastructural Development-Select Proceedings of ICRAEID 2019" going to be published by Springer Nature Singapore Pvt. Ltd.

(vii) **Facilitation Award detail: CSIR Foreign Travel Grant award 2009 in Civil Engineering as Quality recognition of research paper: 01** This grant was allotted for delivering lecture at Kansas City, USA which testify the best quality of research paper by CSIR-expert and paper published as full articles in Journal of Hydro Environment Research; 05 (2011) 177- 185.

(viii) **Fellowship Award** (Academic Distinction for regular Ph.D.) Detail: **1.0, Recipient of Teaching Assistant Fellowship** through doctoral entrance program of **IIT** Guwahati, Assam under HTRA (*half-time teaching and research assistantship*) scheme, sponsored by Human Resource Development Ministry, Government of India in the category of regular full time doctoral research fellowship program at par with national doctoral national fellowship of UGC / CSIR / AICTE / DST, GOI. The other facilitation of fellowship [**IITG –TAF (Civil Engineering)**] award are tax free salary, annual contingency, free accommodation instead of HRA, medicals for 4.0 years from 2006 - 2010.

18. Members of Professional Bodies:

Life Membership: [MAHI] Association of Hydrologists of India: AHI-LM-395-687