

## BIO - DATA

**1. Name & Designation :** Dr. Bipul Talukdar  
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Department of Civil Engineering  
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### **6. Educational Qualifications:**

Examination	Board/ University	Class/ Division Obtained	Year of Passing
HSLC	SEBA	I	1982
Pre University(Sc.)	Cotton College Gauhati University	I	1984
B.E.(Civil Engg.)	JEC-Dibrugarh University	I	1988
M.E.(Civil Engg.)	AEC-Gauhati University	I	1991
Ph.D.(Hydrology)	University of Roorkee.(Now IIT Roorkee)	Obtained Degree	2000

### **7. Teaching Experience :**

Particulars	Period (From.... To...)	Experience in years
Lecturer, Civil engineering Department, POWI, Jorhat	March 1992 to September 1992	6 months
Lecturer, Civil engineering Department, Jorhat Engineering College	October 1992 to November 1997.	5 years 1 month.
Assistant Professor, Civil Engineering Department, Assam Engineering College	December 1997 to January 2006.	8 years 1 month.
Associate Professor, Civil Engineering Department, Assam Engineering College	January 2006 to March 2012	6 years 2 months
Professor, Civil Engineering Department, Assam Engineering College	March 2012 till date	9 years

## 8. Industry Experience :

Particulars	Period From	Experience in years
Worked as Engineer-in-charge in 15MLD Zoo Road Water Supply Scheme, Hengerabari Guwahati. Under Assam Urban Water Supply & Sewerage Board.	1989 to 1992	3 years

## 9 . Area of Specialization: Water Resources System Planning & Management

**10. Areas of Interest :** Water Resources Engg., Watershed Management, Remote Sensing & GIS, Restoration & Management of Lakes and Rivers, River Bank Erosion, Concrete Technology and Construction Management.

## 11. Thesis Supervised

Sl. No.	Degree	Title of Thesis	Year Awarded	Name of Student	Co-Supervisor
1.	M.E	Development of Optimal Reservoir Operation Policy using Deterministic Dynamic Programming.	2001	Ms. Babita Baruah	No.
2.	M.E	Reservoir Operation Model using Stochastic Dynamic Programming.	2001	Mr. Bhaskarjyoti Choudhury	No.
3.	M.E.	Seepage Analysis Through Unsymmetrical Sheet Piles.	2002	Mr. Bhaskar Das	No.
4.	M.E.	Effect of Soil Conservation Measures on Sediment Yield : A Case Study on Baltijan Microwaterched of Puthimari River.	2003	Mr.S.M. Hazarika	Dr. M.M. Deb Goswami
5.	M.E.	Flood Frequency Analysis of Tributaries of the river Brahmaputra in Darrang District of Assam.	2003	Mr. Bhaskar Saharia	No.
6.	M.E.	Identification of Regional Flood by Mathematical Expectation	2004	Ms. Arpita Das	Dr. M.M. Deb Goswami
7.	M.E.	ANN Approach for Deriving Multipurpose Reservoir Operating Rules.	2004	Mr. S.J. Chakaravorty	No.
8.	M.E.	Derivation of Optimal Cropping Pattern for a Watershed.	2005	Mr. Bhupen Choudhury	No

9.	M.E.	Performance Evaluation of Kaldia Irrigation Project	2006	Mr. Paban Choudhury	No.
10.	M.E.	Erosion Pattern of Majuli and its Remedial Measures	2006	Mr. P. P. Neog	No.
11.	M.E.	Suitability of Foundation on Performance of Rockfill dam and Earthen dam using FEM	2006	Mr. Mitrajit Roy	Dr. D. Goswami
12.	M.E.	Scouring Around Bridge Piers and its Remedial Measures	2010	Ms. Pallavi Dutta	Mr. P. Goswami
13.	M.E.	Bank Erosion Mitigation Strategies for Large Alluvial Rivers	2012	Ms. Madhusmita Kumari	No.
14.	M.E.	Evaluation of Scour Depth Around Bridge Piers	2012	Ms. Toniholi L. Shohe	Mr. P. Goswami
15.	M.E.	Determination of Optimal Operating Policy for Multipurpose Reservoir under Deterministic Environment	2012	Mr. Mrinmoy Pathak	No.
16.	M.E.	Development of Yield Model for Pagladiya Reservoir System	2013	Mr. Dhanajoy Talukdar	No.
17.	M.E.	Reliability Based Simulation Model for Power Potential Study of a Hydropower System.	2013	Ms. Navaneeta Choudhury	No.
18.	M.E.	Optimal Design of Composite Channel	2014	Mr. Ajit Kalita	No.
19.	M.E.	Mathematical Modeling of an Erosion Affected Reach of River Brahmaputra	2014	Mr. Priyanjit Purkayastha	No.
20.	M.E.	Static and Dynamic Modelling of Floodplain Management	2014	Ms. Sagarika Patowary	No.
21.	M.E.	Mathematical Modeling of an Erosion Affected Reach of River Beki	2014	Ms. Mayuri Deka	No.
22.	M.E.	Vulnerability Analysis of an Embankment using G.I.S & Remote Sensing.	2015	Mr. Anjil Baid	No.
23.	M.E.	Assessment of Sediment Yield from a Watershed : A GIS Based Approach.	2015	Mr. Tsanpo Luit Kashyap	No.
24.	M.E.	Hydrological Modelling of a Flash Flood Event in	2016	Mr. Sazidur Rahman	No.

		Krishnai River Basin			
25	M.E.	Stability Analysis of Geobag Revetment for River Bank Protection.	2016	Mrs. Rhitwika Barman	No.
26	M.E.	Water Footprint Assessment of Nalbari District of Assam	2017	Mr. Sanjeeb Baruah	No.
27	M.E.	Flood Risk Assessment to Municipal Infrastructure : A case Study on Guwahati City.	2017	Mr. Madhurjya Protim Bharadwaj	No.
28	M.E.	Determination of Most Efficient Pattern of Pro-siltation Measures Adopted in Alluvial Rivers	2018	Ms. Anwasha Gayan	No.
29	M.E.	Morphometric Analysis and Assessment of Hydropower Potential of the Jia Bharali River Basin of the States of Assam and Arunachal Pradesh using GIS.	2018	Mr. Ubedur Rahman	No.
30	M.E.	Rainfall Runoff Relationship of Pagladiya River Basin	2018	Mr. Atiqur Rahman	No.
31	M.E.	Study of Sediment Behaviour and River Flow Characteristics in the Brahmaputra River with respect to Dredging.	2018	Ms. Daisy Koch	No.
32	M.E.	Rainfall Runoff Modelling of Puthimari River Basin	2019	Mr. Ishan Khaund	No.
33	M.Tech	Sediment Transport Modelling in Brahmaputra Basin for Assessment of Stable Morphology along the River Stretch between Tezpur and Guwahati.	2019	Ms. Ankita Gogoi	No.
34	M.Tech	An Integrated Study on Soil Loss and Sediment Yield as a Factor of Embankment Breaching	2021	Mr. Sanjib Gohain	No.
1	Ph.D.	Integrated Management of Land and Water Resources of a Water-logged Area using RS & GIS Technology	2011	Dr. Debasis Deb	No.
2	Ph.D.	Evaluation of Scour Depth Around Bridge Piers.	2014	Dr. Pankaj Goswami	Prof. B. D. Saikia

3	Ph.D.	Development of Optimal Irrigation Strategies Under Conjunctive Use System	2014	Dr. Sirajul Islam	No.
4	Ph.D.	Erosion Hazard Assessment of Brahmaputra River Bank in Lower Assam Region.	2020	Dr. Nripen Majumdar	No.
5	Ph.D.	Sediment Transport Modelling	Ongoing	Mrs. Rhitwika Barman	No.

## 12. Details of Sponsored / Consultancy Project Handled

Sl. No	Title	Funding Agency	Amount (Rs.in lakhs)	Duration	PI/Co-PI
1.	Explicit Consideration of Reliability in Multiobjective Stochastic Dynamic Programming Models for Reservoir Planning and Operation Problems.	AICTE	02.50	2 yr	No.
2.	Evaluation of Scour Depth Around Bridge Piers	AICTE	14.68	3yr	Mr. P. Goswami
3.	Mathematical Modeling of an Erosion Affected Reach of River Brahmaputra	AICTE	18.00	3yr	Dr. U.K. Misra
4.	Modernization of Computational Lab.	AICTE	05.00	1 yr	No.
5.	Modernization of Environmental Engg. Lab.	AICTE	12.50	1 yr	No.
6.	Evaluation of Master Plans made during 10 <sup>th</sup> Plan	MoWR	25.00	2 yr.	Dr. B. Sarma
7.	Stability Checking of the Building Structures/ Foundations at Lakwa Plant (Phase I).	GAIL (India) Limited	02.37	1mon	Dr. U. K. Nath
8.	Stability Checking of the Building Structures/ Foundations at Lakwa Plant (Phase II).	GAIL (India) Limited	04.10	1mon	Dr. U. K. Nath
9.	Feasibility Study for Structural Stability for Various Blocks of Referral Hospital Campus at Falkawn, Mizoram.	HSCC(I) Ltd.	06.00	1mon	Dr. U. K. Nath
10.	Structural Soundness of Construction of Ph-A (Balance) Building for JNV at Distt. Williamangar (Meghalaya).	Himalaya Construc.,	06.00	1mon	Dr. U. K. Nath
11.	11. Evaluation study of various FMP schemes of State Water Resources Department particularly at Biswanath chariali, Morigaon, Nalbari, N.	MoWR	29.00		Dr. B. Sarma & Dr. U. K. Misra

	Lakhimpur, Gohpur, Dhubri etc.				
12	Determination of Most Efficient Pattern of Pro-siltation Measure for Alluvial Rivers.	AICTE	21.60	3yr	No
13	Development of Sustainable Self Compacting Concrete with the Effective use of Locally Available Waste Material.	MHRD (TEQIP III)	2.57	1yr	Mrs. Rhitwika Barman
14	Land use land cover (LULC) changes in Jorhat Town, Assam and its impact in Urban Storm Flooding	MHRD (TEQIP III)	2.83	1yr	Mr. Priyanjit Purkayastha
15	Change Detection of LULC & Delineation of Flood Prone Areas using Geo-spatial Technologies – A case study of Assam.	MHRD (TEQIP III)	2.50	1Yr	Dr. K. Manjulavani, JNTUH

### 13. Short Term Course Attended

Sl. No.	Title of the Course	Host Institution	Duration
1.	Engineering Optimization using MATLAB and Excel	IIT Guwahati	29/02/12 to 02/03/12
2.	Conservation and Management of Lakes and Rivers	IIT Roorkee	19/01/09 to 30/01/09
3.	Optimization Methods for Water Resources Planning and Management	IIT Guwahati	15/06/09 to 19/06/09
4.	Hydroinformatics for Surface and Subsurface Water Resources	IIT Guwahati	09/06/08 to 13/06/08
5.	Flood Hazard Mitigation and Watershed Management	IIT Guwahati	01/12/06 to 05/12/06
6.	Seismic Evaluation and Retrofit	IIT Roorkee	19/12/05 to 24/12/05
7.	Regional Workshop on Disaster Management	IIT Guwahati	06/05/05 to 08/05/05
8.	Non-Destructive Testing of Plain and Reinforced Concrete	NITTTTR, Kolkata	16/08/04 to 20/08/04
9.	GIS and Remote Sensing Application in Water Resources	IIT Guwahati	01/12/03 to 05/12/03
10.	Investigation, Planning & Operation of Multipurpose Reservoirs – A computer Aided	IIT Roorkee	28/10/96 to

	Design Approach		07/11/96
11.	Remote Sensing from Space to Classroom	IIT Roorkee	22/06/93 to 06/07/93

#### 14. Details of Research Publications

##### International/National Conference:

1. Talukdar B., Hazarika S.M., and Goswami M.D (2004). Determination of Conservation Practice Factor For A Rainfed Watershed, published in the International Conference on Advanced Modeling Techniques for Sustainable Management of Water Resources. Deptt. Of Civil Engg., NIT Warangal, 28-30 Jan, 2004.
2. Nath U.K. and Talukdar B. (2008). Influences of Workability in Concrete Mix-Design 14th Annual Convention and National Seminar on "Recent Trends in High Rise Buildings", Indian Building Congress, New Delhi, 2008 paper No. 9(i).
3. Nath U.K. and Talukdar B. (2009). Influence of Coconut Fiber on Compressive Strength of Concrete, National Conferences on Current Challenges in Civil Engineering, Velammal Engineering College, Chennai.
4. Deb Debasis, Talukdar Bipul (2009). Abstract on 'Effect of valley slope on the performance of Earth and Rock fill Dam, accepted and published at WSEAS conference held at Cambridge University during 24<sup>th</sup> to 26<sup>th</sup> Feb. 2009, U.K.
5. Nath U.K. and Talukdar B. (2010). Concrete Mix Design-Issues and Challenges", Proc. of 26th National Convention of Civil Engineers, The Institution of Engineers (India) , Assam State Centre, Guwahati, pp. 241-245.
6. Nath U.K., and Talukdar B. (2010). Concrete With Coconut Fiber : An Alternative Construction Material, Proc. of 26th National Convention of Civil Engineers, The Institution of Engineers (India) , Assam State Centre, Guwahati, pp. 311-314.
7. Nath U.K., Talukdar B., Nath R., Sarma M, Shyam B., Machahary P. (2010). A New Approach to Concrete Mix Design, National conferences on Disaster Mitigation in Housing in India: an Agenda for Future, IITR, Roorkee, pp. 231-238
8. Islam Sirajul and Talukdar Bipul (2012). Integrated Management of Ground Water with Artificial Recharge from Rainwater Harvesting for an Urban Water Supply System. International Conference on Environmentally Sustainable Urban Ecosystems (ENSURE 2012), IIT Guwahati, 24-26<sup>th</sup> Feb., 2012, Paper No. 289.
9. Talukdar Bipul and Das Ranjit (2015). Assessment of River Bank Erosion and Vulnerability of Embankment to Breaching: A RS and GIS Based Study in

Subansiri River in Assam, India. Int. confe. on Climate Change and Water & Environment Management in Mosoon Asia, 28-30 January, 2015, Bangkok, Thailand.

10. Talukdar Bipul and Srivastava D.K. (2015). Conflict Resolution in Reservoir Operation Problems using Multiobjective Stochastic Dynamic Programming. 9<sup>th</sup> World Congress of European Water Resources Association (EWRA 2015), Water Resources Management in Changing World: Challenges and Opportunities, June 10-13, 2015, Istanbul, Turkey.
11. Choudhury N and Talukdar Bipul (2015). Reliability Based Simulation for Power Potential Study of a Hydroelectric Project. 9<sup>th</sup> World congress of European Water Resources Association (EWRA 2015), Water Resources Management in Changing World: Challenges and Opportunities, June 10-13, 2015, Istanbul, Turkey. This paper has been selected for Journal publication in International Water Utility Journal from EWRA.
12. Deka, M., and Talukdar, B. (2016). A Study of an Erosion-Affected Reach of the River Beki Using Mathematical Modeling. Proc. of World Environmental and Water Resources Congress 2016, ASCE, West Palm Beach, Florida, USA, May 22-26, 2016, pp 334-342.
13. Baid, A., Talukdar, B., and Das, R. (2016). Vulnerability Analysis of Embankment Reach: A Remote Sensing and GIS Based Study in Nona River in Assam, India. Proc. of International Conference on Civil Engineering for Sustainable Development – Opportunities and Challenges, AEC, Guwahati, December 19-21, 2016, pp 44-48.
14. Rahman, S., and Talukdar, B., (2016). Hydrological modelling of Krishnai river basin. Proc. of International Conference on Civil Engineering for Sustainable Development – Opportunities and Challenges, AEC, Guwahati, December 19-21, 2016, pp 233-237.
15. Barman, R., and Talukdar, B., (2016). Stability analysis of geobag revetment for riverbank protection. Proc. of International Conference on Civil Engineering for Sustainable Development – Opportunities and Challenges, AEC, Guwahati.
16. Talukdar, B., and Koch, D. (2018). Study of sediment behaviour and river flow characteristics in the Brahmaputra river using HEC RAS software. 2<sup>nd</sup> International conference on Civil Engineering for Sustainable Development – Opportunities and Challenges, 18-19 December, 2018, Assam Engineering College, Guwahati. Pp. 244-252.
17. Gayan A. and Talukdar, B. (2018). Trap efficiency of porcupine system in alluvial rivers. 2<sup>nd</sup> International conference on Civil Engineering for Sustainable Development – Opportunities and Challenges, 18-19 December, 2018, Assam Engineering College, Guwahati. Pp. 244-252.



18. Gohain S. and Talukdar B (2021). "Causes and Ecological Impact of Embankment Breach in Dhemaji District". Proceedings of International Conference on 'Hydraulics, Water Resources, and Coastal Engineering', 26th-28th March 2021, NIT Rourkela.

#### **ASCE Online Library Publication:**

1. Deb Debasis and Talukdar Bipul (2010). Optimum Management of Land and Water Resources of a Water logged Area Using DP Model" presented in the conference titled "World Environmental and Water Resources Congress, 2010" at Providence, Rhode Island, USA held during 16<sup>th</sup> May to 20<sup>th</sup> May 2010 and organized by ASCE & EWRI, pp-2619-2629.
2. Deb Debasis and Talukdar Bipul (2010). Remote Sensing and Geographic Information System for Assessment, Monitoring and Management of Flooded and Waterlogged Areas, North district of Tripura state, India, presented in the conference titled 'Watershed 2010', Innovations in Watershed Management under Land use and Climatic Change at Madison, Wisconsin, USA held during from 23<sup>rd</sup> Aug. to 27<sup>th</sup> Aug. 2010 and organized by ASCE & EWRI, pp-1013-1024.
3. Talukdar Bipul, Deb Debasis, and Srivastava D.K. (2011). Development of Multi-objective Reservoir Operation Model for Flood Control Benefit. Presented in the conference titled 'World Environmental and Water Resources Congress, 2011', held at Palm Springs, California, USA during 22<sup>nd</sup> May to 26<sup>th</sup> May 2011 and organized by the ASCE & EWRI, pp-3978-3989.
4. Deb Debasis, Talukdar Bipul and Srivastava D.K. (2011). Application of Remote Sensing and GIS Tools in Delineating Environmentally-delicate-Areas for Optimum Land Use Planning: A Case Study. Presented in the conference of World Environmental and Water Resources Congress, 2011, held at Palm Springs, California, USA during 22<sup>nd</sup> May to 26<sup>th</sup> May 2011 organized by ASCE & EWRI, pp-3862-3875.
5. Deb Debasis, and Talukdar Bipul (2012). Hydro-geomorphological Analysis of a Water Logged area of South Tripura District using RS and GIS Technology. Proc. of World Environmental and Water Resources Congress, 2012, Albuquerque, New Mexico, USA, 20-24 May 2012, organized by ASCE & EWRI.
6. Talukdar Bipul , Deb Debasis and Srivastava D.K (2012). Development of Multi-objective Stochastic Dynamics programming (MOSDP) Reservoir operation model. Proc. of World Environmental and Water Resources Congress, 2012, Albuquerque, New Mexico, USA, 20-24 May 2012, organized by ASCE & EWRI.

### Referred Journal Publication:

1. Islam, S., and Talukdar, B. (2012). "Application of artificial immune system in optimization of reservoir operation." *International Journal of Water Resources and Environmental Management*, vol. 3, no.2, pp. 241-254.
2. Islam, S., and Talukdar, B. (2014). "Crop yield optimization using genetic algorithm with the CROPWAT model as a decision support system." *International Journal of Agricultural Engineering*, vol. 7, no.1, pp. 7-14.
3. Islam, S., and Talukdar, B. (2016). "A Linked Simulation-Optimization (LSO) Model for Conjunctive Irrigation Management using Clonal Selection Algorithm." *Journal of the Institution of Engineers, India: Series-A*, vol.97, no.3, pp.181-189.
4. Islam, S., and Talukdar, B. (2016). "Performance Improvement of a Rainfall Prediction Model using Particle Swarm Optimization". *International Journal of Computational Engineering Research*, vol. 6, no. 7, pp. 39-42.
5. Kalita, T., and Talukdar, B., (2017). "Establishment of Intensity-Duration-Frequency Formula for Precipitation in Puthimari Basin, Assam". *International Journal of Innovative Research in Science, Engineering and Technology*, Vol. 6 no.4, pp. 5713-5721.
6. Talukdar, B., Baid, A., and Das, R., (2017). "Indexing Vulnerability of an Embankment Reach against Breaching : A Remote Sensing and Hydrodynamic based Study." *European Water*, Vol. 60 pp. 67-71.
7. Das, R., and Talukdar, B., (2017). "Assessment of River Bank Erosion and Vulnerability of Embankment to Breaching : A RS and GIS based Study in Subansiri River in Assam, India." *Environment and Ecology Research*, Vol. 5(1) pp. 1-5
8. Mazumdar, N., and Talukdar, B., (2018). "Assessment of River Bank Erosion Potential in Brahmaputra River in Lower Assam Region using Modified Rosgen's Bank Erosion Hazard Index Method", *IOSR Journal of Engineering (IOSRJEN)*, Vol. 08, Issue 8, pp. 21-27.
9. Mazumdar, N., and Talukdar, B., (2018). "Role of Critical Shear Stress and Erodibility of Soil in Stream Bank Erosion in Lower Assam Region of River Brahmaputra", *Journal of Engineering Research and Application ISSN : 2248-9622*, Vol. 8, Issue 8 (Part -I) Aug 2018, pp 41-50.
10. Mazumdar, N., and Talukdar, B., (2018), "Application of ROM Scale for Assessing Erosional Vulnerability in Lower Assam Region of River Brahmaputra", *International Journal of Engineering Science Invention (IJESI)* ISSN (Online): 2319 – 6734, ISSN (Print): 2319 – 6726, Volume 7 Issue 8, pp. 63-68.

11. Mazumdar, N., and Talukdar, B., (2018)., “Role of Physical Properties of Soil in River Bank Erosion Assessment: A Case Study in Lower Assam Region of River Brahmaputra of India”, *American Journal of Engineering Research (AJER)* e-ISSN: 2320-0847 p-ISSN : 2320-0936 Volume-7, Issue-9, pp-197-205.
12. Rahman, U., and Talukdar, B., (2018)., “Assessment of Hydropower Potential of the Jia Bharali River of the States of Assam and Arunachal Pradesh of India”, *International Journal for Research Trends and Innovation*, Vol. 3, Issue 8 | ISSN: 2456-3315, pp. 42-61.
13. Rahman, U., and Talukdar, B., (2018)., “Derivation of Morphometric Parameters of the Jia Bharali River Basin of the States of Assam and Arunachal Pradesh (India) Based on ASTER DEM”, *International Journal of Science and Research (IJSR)* ISSN (Online): 2319-7064, Vol. 7, Issue 7, pp. 628-634.
14. Rahman, U., and Talukdar, B., (2018)., “ SRTM DEM Based Derivation of Morphometric Parameters of the Jia Bharali River Basin of the States of Assam and Arunachal Pradesh of India”, *International Journal of Scientific Development and Research*, Volume 3, Issue 7, pp. 196-202.

### **Book Chapter**

1. Islam, S., and Talukdar, B. (2016). “Water Supply System Planning by Artificial Groundwater Recharge from Rooftop Rainwater Harvesting” , In: Sarma, A.K., Singh, V.P., Suresh, A.K., and Bhattacharjya, R.K. (Eds.), *Urban Hydrology, Watershed Management and Socio-Economic Aspects*. Springer International Publishing, Switzerland, pp. 145-159.
2. Islam, S., and Talukdar, B. (2018). “Application of Artificial Immune System in Water Resources Management”, In: Denis Mazuyer and Bhattacharjya, R.K. (Eds.), *Metaheuristic Optimization Methods: Algorithms and Engineering Applications*. Springer International Publishing. In Press.

### **15. Invited Lectures :**

1. “New Frontiers in Civil Engineering : Challenges and Opportunities in North East India” Key note presented on National Conference organised by Royal School of Engineering & Technology, 5-6 November, 2015.
2. “Quality Control and Non-destructive Testing of Concrete”, Workshop on Quality Control organised by Meghalaya PWD (Building) in Collaboration with Road Research Laboratory (R&B), 13-14 May, 2016, Shillong, Meghalaya.

3. "Flood and Erosion Management in Brahmaputra Basin", Workshop on Thrust Areas of 100 days agenda of Honorable Chief Minister of Assam, 30-31 July, 2016, Guwahati.
4. "Flood and Erosion Management – Lessons Learned from Brahmaputra Basin" , Lead Talk in Workshop on Space Technology Inputs for Disaster Risk Reduction in North Eastern Region with Special Emphasis on Early Warning, Preparedness and Mitigation, March 16-17, 2017, North East Space Application Centre, Umiam, Shillong, Meghalaya.
5. "Hydrologic Modelling", Key note presented on National Conference on Hydrology and Watershed Management, 24-25 March, 2017, NIT Silchar.
6. "River Interventions – Success and Failure Stories and Lessons Learnt", lecture presented during National Conclave on Brahmaputra Basin organised by Gauhati University during 12-13 February, 2018.
7. "Operation of a Multipurpose Reservoir" theme-based lecture given in training course on "Development of Climate Risk Management (CRM) tools for Agriculture & Water Resources management" during March 13 to 20, 2018 organised by NESAC in collaboration with IMD and IIT Bhubneshwar.
8. Lead Speaker in the workshop on "Advancement in Water Modelling Tools", at Civil Engineering Department, IIT Guwahati, 15<sup>th</sup> May 2019.
9. Key note lecture at TEQIP III sponsored FDP on "Disaster Risk Management", at PSG College of Technology, Coimbatore, 11-16 October, 2019.
10. Key note Lecture at National Seminar on "Rain Water Harvesting, its Purification and Ground Water Recharge", organised by Assam Down Town University on 22-23 November, 2019.
11. Expert Lecture on Concrete Technology at "Special Training on Structural Design of Piped Water Supply Scheme for Graduate Engineers of PHED, Assam.", 25-30 November, 2019.
12. "Overview of Hydrology and Water Resources in India – Surface and Ground Water", Expert lecture presented at Certificate Course on "Remote Sensing and GIS Application in Water Resources", organised by North East Space Application Centre (NESAC), Barapani on 27<sup>th</sup> November, 2019.
13. "Water Footprint Assessment – A step towards Integrated Water Resources Management", Expert lecture delivered at Workshop on Advances in

Integrated Water Resources Management, Civil Engineering Department, IIT Guwahati, December 16-18, 2019.

14. Lead Speaker, Webinar on “Let Us Understand Concrete” organised by Royal Global University on 6th June 2020
15. Invited talk on “Sustainable Solution to Flood and Erosion Problem of Assam” in FDP on Emerging Prospects of STEM Education in Engineering and Technology organised by Royal School of Engineering and Technology during 21 – 28 July 2020.
16. Invited talk on “ Basics of E-learning Tools for Effective Teaching” organised by Radha Gobinda Baruah College, Guwahti on June 25, 2020
17. Invited talk on “Urban Flood Scenario of Guwahati City and its Remedial Measures” on the Foundation day celebration of Women’s Engineer Forum of Assam, 14th November, 2021

#### **16. Short Term Course Conducted**

1. Coordinator, Refresher course on “Hydrology and Hydraulic Engineering” for Engineers of Water Resources Department of Govt. of Assam, from 4<sup>th</sup> to 14<sup>th</sup> June, 2013 at Assam Engineering College, Guwahati, Assam (sponsored by DHI (India) Water & Environment Pvt. Ltd., New Delhi.)
2. Coordinator, DoNER sponsored training programme on "Mitigation of river bank erosion problems", 23 January - 3 February and 13 March 23 March, 2012 at Civil Engg. Deptt., IIT Guwahati.
3. Coordinator, TEQIP III (MHRD) sponsored FDP on “Recent Advances in Concrete Technology”, 15-19 July, 2019, Civil Engineering Department, Assam Engineering College.

#### **17. Research and Development**

##### **Research Experience**

1. Comparative study of various numerical methods of gradually varied flow profiles with laboratory data for non-prismatic channels.
2. Flood frequency analysis study using four different techniques for ten rivers of Assam and finding out the best method for a particular purpose.
3. Development of a software for determination of pressure and exit gradient of a weir on permeable foundation using Khosla’s theory.

4. Development of a software for optimum utilization of water for tea gardens of Assam.  
Reliability or risk is one of the most important objectives of water resources management problems, and the concept of reliability of different releases in the reservoir release policy is not taken into account and its applications are very limited. Successfully applied the concept of reliability of different releases in reservoir release policy using a stochastic dynamic programming model.
5. Developed a new concept of multiobjective stochastic dynamic programming approach into reservoir operation problems.
6. Developed a new approach for solving simultaneous equations for large size water resources problems without eliminating the redundant equations.

### **18. Any Other Information**

1. Worked as a member of the Expert Committee on *Brahmaputra Water Diversion by China*, constituted by the Government of Assam.
2. Editor of “Emerging Trends in Construction Technology : Challenges and Future Directions”, Proc. of the 26<sup>th</sup> National Convention of Civil Engineers, Institution of Engineers (I), 9-10 October, 2010, Guwahati, Assam.
3. Editor of the Souvenir of World Water Day 2012, organized by Institution of Engineers (I), Assam State Centre, Guwahati on 22<sup>nd</sup> March, 2012.
4. Member of the Advisory Group of Experts on Flood, Erosion and Water management to Govt. of Assam (Constituted vide memo no. WR(G)29/2012/33 dated 16/07/2014)
5. Acted as Joint Organising Secretary and Editor of the Proceedings of International Conference on Sustainable Development – Opportunities & Challenges (CESDOC2016 & 2018), Guwahati, India.
6. Acted as Member of the Expert Committee on *Flood and Erosion Protection of Majuli Island*, constituted by Government of Assam vide Govt. Notification no. WR(G)75/2016/1 dated 21<sup>st</sup> February, 2017.
7. Won the “**Union Ministry of Water Resources – Department of Irrigation Prize**” for the year 2017 jointly with Dr. Sirajul Islam for their paper titled “A Linked Simulation-Optimization (LSO) Model for Conjunctive Irrigation Management using Clonal Selection Algorithm.” Which was adjudged as the best contribution to the field of Irrigation Engineering in the year 2016.
8. Visited **University of Melbourne, Australia** as an academic visitor from 14th August to 08th October, 2017 under Smart Assam Project, which is a collaborative project between Govt. of Assam and University of Melbourne.

9. Acted as Resource Person in the *2<sup>nd</sup> Annual Workshop on “Smart Villages”* organised by Assam Engineering College in collaboration with University of Melbourne, Australia from 4<sup>th</sup> to 7<sup>th</sup> December, 2017.
10. Acted as a Guest Editor to the Topical Collection on “Sustainable Development – A Civil Engineering Perspective”, published by International Journal of Springer Nature Applied Sciences, The Netherlands.
11. Member of the Project Level Monitoring Committee for the Brahmaputra Studies Centre under Gauhati University.
12. Member of the Guahati University Technical Committee.
13. Member of the Gauhati University Construction Committee.
14. Nominated as Member of the Board of Studies for Civil Engineering of North Eastern Hill University.
15. Nominated as Member of the Board of Studies for Civil Engineering of Assam Science and Technology University.

**Date : 1<sup>st</sup> February, 2022**

**Prof. B. Talukdar**