1.	**Name**	:	Dhrubajyoti Sen
2.	**Date of Birth**	:	17th August, 1963 **Nationality:** Indian
3.	**Present position**	:	Professor, Department of Civil Engineering, Indian Institute of Technology, Kharagpur, Kharagpur – 721302, West Bengal
4.	**Contact**	:	e-mail: djsen@civil.iitkgp.ernet.in; mobile: 09434721888

5. **Education** :

- **Ph. D. (Computational Hydrology)**, IIT Delhi, 1995
- **M. Tech. (Water Resources Engineering)**, IIT Delhi, 1987 (First amongst M. Tech. students of WRE)
- **B. Tech. (Civil Engineering)**, IIT Kharagpur, 1985 (First amongst B. Tech. Civil Engineering students)

6. **Member in Professional Associations and other assignments** :

- Associate Chair Professor (Brahmaputra) sponsored by the Ministry of Water Resources, Government of India
- Member of International Association for Hydraulic Research (IAHR)
- Member of Indian Hydraulic Society
- Associate Editor of Australian Journal of Water Resources
- Reviewer for Proceedings of the Institution of Civil Engineers (U.K.), Journal of Water Management
- Reviewer for Journal of Hydrology, American Society of Civil Engineers

7. **Publications in journals**

1. Garg, N. K. and Sen, D. (1994) "Determination of watershed features for surface runoff models", Journal of Hydraulic Engineering, American Society of Civil Engineers, Vol. 120 No. 4, pp. 427-447.
2. Sen, D. and Garg, N. K. (1998) "Efficient solution technique for dendritic channel networks", Journal of Hydraulic Engineering, American Society of Civil Engineers, Vol. 124, No. 8, pp. 831-839.
3. Garg, N. K. and Sen, D. (2001) "Integrated physically based rainfall runoff model using FEM", Journal of Hydrologic Engineering, American Society of Civil Engineers, Vol. 6, No. 3, pp. 179-188.
4. Sen, D. and Garg, N. K. (2002) "Efficient algorithm for gradually varied flows in channel networks", Journal of Irrigation and Drainage Engineering, American Society of Civil Engineers, Vol. 128, No. 6, pp. 351-357.
5. Islam, A., Raghuwanshi, N. S., Singh, R. and Sen, D. (2005) "Comparison of Gradually Varied Flow Computation Algorithms for Open-Channel Network" Journal of Irrigation and Drainage Engineering, American Society of Civil Engineers, Vol. 131, No. 5, September/October 2005, pp. 457-465.
6. Kuiry, S. N., Pramanik, K. and Sen, D. (2008) "Finite Volume Model for Shallow Water Equations with Improved Treatment of Source Terms" Journal of Hydraulic Engineering, American Society of Civil Engineers, Vol. 134, No. 2, pp. 231-242.
7. Ghosh, M. K., Kumar, G. and Sen, D. (2009) "Study of downstream scour for river diversion barrages" Proceedings of the Institution of Civil Engineers (U.K.), Journal of Water Management, Vol. 162, No. 5.
8. Pramanik, N., Panda, R. K. and Sen, D. (2009) "One Dimensional Hydrodynamic Modeling of River Flow using DEM Extracted River Cross-sections", Water Resources Management, Springer Pub. (DOI: 10.1007/s11269-009-9474-6).
9. Pramanik, N., Panda, R. K., & Sen, D., (2009) "Development of design flood hydrographs using probability density functions", Hydrological Processes, Wiley Interscience. (DOI: 10.1002/hyp.7494).
10. Kuiry, S. N., Sen, D. and Bates, P. (2010) "A coupled 1D-quasi 2D flood inundation model with unstructured grids" Journal of Hydraulic Engineering, American Society of Civil Engineers,

8.	**Publications in proceedings of seminars/conferences**	:	1. "Automatic regulation of canals" *Proceedings of Conference on High Technology in Water Resources*, Central Board of Irrigation and Power, New Delhi. (1984) 2. "An efficient solution algorithm for dendritic channel networks using FEM or FDM", *Proceedings of International Conference on Integrated Water Resources Management for Sustainable Development*, National Institute of Hydrology (Roorkee), New Delhi. (2000) 3. "A remote-sensing GIS compatible surface rainfall-runoff model for regional level planning", *Proceedings of Workshop on GIS technologies for sustainable development at local level,* Department of Science and Technology, New Delhi. (2001) 4. "Some technical considerations for rainwater harnessing at Cherrapunjee and Mawsynram", *Proceedings of National Seminar on Water and Land Management including CAD for Socio-Economic upliftment of NE Region,* North East Regional Institute of Water and Land Management (Tezpur), Guwahati. (2001) 5. "Living with floods", *Seminar on Rural Development for a Healthy Rural-Urban Interface*, Institution of Engineers, Kharagpur. (2001) 6. "An algorithm for coupling 1D river flow and quasi 2D flood inundation flow", *Fifth International Conference on Hydroinformatics*, Cardiff, UK. 7. "A comparison of some numerical schemes for flood inundation simulation", *International Conference on Water Related Disasters*, Indian Association of Hydrologists, Kolkata. (2002) 8. "Comparison of experimental and numerical simulation of scouring below barrages", *Proceedings of National Conference on Hydraulics and water Resources,* Pune. (2003) 9. "Implications of engineering decisions on river siltation / erosion", *Proceedings of Seminar on Siltation of Rivers – Problems and Solutions*, New Delhi. (2004) 10. "A high resolution method for 2D shallow water equations on unstructured quadrilateral grids", *Advances in Water Engineering for Sustainable Development*, Chennai. (2005)
9	**Academic visits**		1. Hydro-Quebec, Montral, Canada (2 months, 1996): Attended training on hydropower design and detailing automation under a World Bank aided training programme. 2. University of Bristol, Bristol, U.K. (6 months, 2007): Worked on a computational flood inundation simulation project under the Commonwealth Academic Fellowship supported by the Association of Commonwealth Universities. 3. Federal Technical Institution of Lausanne, Lausanne, Switzerland (2 months, 2009): Worked on an experimental facility to study the sediment deposition upstream of barrage under the Indo-Swiss fellowship: Indo-Swiss Joint Research Proposal (ISJRP).

10. **Details of Relevant Projects undertaken:**

I   **Name of the project:** Design of Stilling Basin under variable hydraulic conditions
Year: 2002-2008
Client: Ministry of Water Resources, Government of India
Position Held: Principal Investigator
Activities Performed: Experimental investigations on model barrage structures to obtain the relation between scour on the downstream and the hydraulic parameters like discharge, upstream and downstream water levels, gate openings, etc. Finally, an optimum configuration of the downstream flexible apron was worked out.

ii   **Name of the project:** Resource mapping of Midnapore District using RS/GIS
Year: 2002-2006
Client: Department of Science and Technology, Government of India
Position Held: Principal Investigator
Activities Performed: Thematic data and information of the Midnapore district in West Bengal prepared.

Iii **Name of the project:** Resource mapping / Flood analysis of Ajay and Mayurakshi rivers using RS/GIS
Year: 2006-2009
Client: Department of Science and Technology, Government of India
Position Held: Principal Investigator
Activities Performed: The remote sensing and GIS techniques were applied to delineate the watershed and flood plains of the Ajay and Mayurakshi river basins followed by the application of the computer models HEC-HMS and MIKE-FLOOD to demarcate the areas prone to flooding under rainfalls of different return periods.

Iv **Name of the project:** Preparation of Drainage plan for Shantiniketan - Sriniketan
Year: 2006- 2008
Client: Shantiniketan - Sriniketan Development Authority, Government of West Bengal
Position Held: Consultant
Activities Performed: The master plan of drainage for the town of Bolpur and the University campus of Visva-Bharati as well as the surrounding areas falling under the Shantiniketan - Sriniketan Development Area were prepared.

V **Name of the project:** Farakka Barrage Pond Stabilisation and Bagmari Canal Syphon Aqueduct Problem
Year: 2007-2009
Client: Inland Waterways Authority of India, Government of India
Position Held: Consultant
Activities Performed: Experiments were conducted on scale models of the Farakka Barrage and its pond area to obtain the possible navigational routes through the sedimented pond area. A separate model study was also conducted to study the navigational difficulties in the Feeder Canal of the project ad propose remedial solutions.

Vi **Name of the project:** West Bengal Coast Risk Assessment due to Tropical Cyclones
Year: 2006-2007
Client: Department of Disaster Management, Government of West Bengal
Position Held: Consultant
Activities Performed: The risk due to cyclones on the coastal districts of West Bengal were evaluated and mapped. Remedial solutions for the drainage of Kolkata and its surroundings were also proposed.

vii **Name of the project:** Surface and Ground Water Resources of the District of Burdwan and Management Strategies for Optimal Utilisation
Year: 2005-2006
Client: District Administration of Bardhaman, Government of West Bengal
Position Held: Consultant
Activities Performed: The combined water availability from both surface and ground water sources were evaluated for the district of Bardhaman and evaluated against the total demand due to irrigation (the major component). Remedial solutions for optimal water usage were proposed.

11. **Employment Record** **:**

Period **:** J – Till date
Employer **:** Indian Institute of Technology, Kharagpur
Position Held **:** Professor (Department of Civil Engineering)
Experience **:** Teaching and research in Water Resources Engineering. Execution of sponsored and consultancy projects.

Period **:** Aug 2004 – July 2010
Employer **:** Indian Institute of Technology, Kharagpur
Position Held **:** Associate Professor (Department of Civil Engineering)
Experience **:** Teaching and research in Water Resources Engineering. Execution of sponsored and consultancy projects.

Period **:** July, 1999 – Aug 2004
Employer **:** Indian Institute of Technology, Kharagpur
Position Held **:** Assistant Professor (Department of Civil Engineering)
Experience **:** Teaching and research in Water Resources Engineering. Execution of sponsored and consultancy projects.

Period	:	June 1998 – July 1999
Employer	:	Central Water Commission, New Delhi
Position Held	:	Deputy Director (Narmada Dams Directorate)
Experience		Design aspects of dam and irrigation channel tunnel of the Indira Sagar Project on River Narmada.

Period	:	May 1996 – May 1998
Employer	:	Central Water Commission, Shillong
Position Held	:	Executive Engineer (Meghna Inv. Division)
Experience	:	Management of hydrological data collection for the independent rivers of southern Meghalaya and River Barak of Cachar district, Assam.

Period	:	Sep 1995 – May 1996
Employer	:	Central Water Commission, New Delhi
Position Held	:	Deputy Director (Software Management Directorate)
Experience	:	Computer analysis of structural and geotechnical aspects of hydropower project components.

Period	:	March 1990 – Sep 1995
Employer	:	Central Water Commission, New Delhi
Position Held	:	Deputy Director (Sardar Sarovar Dams Design Directorate)
Experience	:	Design of components for the Sardar Sarovar Dam project: intakes, draft tubes, and related geotechnical works.

Period	:	April 1987 – March 1990
Employer	:	Central Water Commission, New Delhi
Position Held	:	Assistant Executive Engineer (Upper Yamuna Division)
Experience	:	Management of hydrological data collection based upon automatic weather station communicated through UHF/VHF telemetry network for River Yamuna from Tajewala to Delhi.