Subhasish Dey, ***Distinguished Professor, Indian Institute of Technology Jodhpur***

Subhasish Dey is a *hydraulician* and *educator*. He is known for his research on the hydrodynamics throughout the world and acclaimed for his contributions to develop theories and solution methodologies of various problems on *applied hydrodynamics*, *turbulence*, and *sediment transport*. He was conferred with the Hans Albert Einstein Award from the American Society of Civil Engineers (ASCE) in 2022.

He is currently a *Distinguished Professor* and *Head* of the Department of Civil and Infrastructure Engineering, Indian Institute of Technology (IIT) Jodhpur (2023–). Before, he worked as a *Professor* of the Department of Civil Engineering, Indian Institute of Technology (IIT) Kharagpur (1998–2023), where he served as the *Head* of the Department of Civil Engineering during 2013–15. He also held the position of *Distinguished Visiting Professor of Tsinghua University*, Tsinghua University, Beijing, China (2016–18), *Adjunct Professor* of Indian Statistical Institute Kolkata (2014–19) and *Brahmaputra Chair Professor*, IIT Kharagpur during 2009–14 and 2015.

He has offered courses on turbulent flow and sediment transport in different universities, such as the University of Hong Kong, Università di Pisa, Università della Calabria, Politecnico di Milano, University of Florence, University of Oulu, Instituto Superior Tecnico Lisbon, National Chung Hsing University etc. He has also coordinated several ISWT, GIAN short courses at IIT Kharagpur.

Presently, he is engaged in studying turbulence characteristics over smooth and rough boundaries and other turbulence related problems. His general areas of research interests encompass analytical hydrodynamics, submerged jet flows, offset jet flows, sediment transport, scour, free surface flow, coherent motion in turbulent flow, turbulent boundary-layer and time-space averaging flow characteristics over macro-rough walls, etc. He is an author of a textbook titled *Fluvial Hydrodynamics* published by Springer, Germany. He has published 224 research papers in refereed journals.

He is an *associate editor* of the *Proceedings A of the Royal Society of London: Mathematical, Physical and Engineering Sciences*, *Journal of Geophysical Research – Earth Surface (AGU)*, *Journal of Hydraulic Engineering (ASCE)*, *Journal of Hydraulic Research (IAHR)*, *Sedimentology*, *Acta Geophysica*, *Journal of Hydro-Environment Research* and *International Journal of Sediment Research*.

He is a *Vice-President* of the Council of the *World Association for Sedimentation and Erosion Research* (*WASER*), Beijing (2019–22; 2022–25). He is also a *council member of IAHR* (2015–19), *member* of *IAHR Fluvial Hydraulics Committee* (2014–), a *past-council member* of the *WASER*, Beijing (2010–13) and a *Foreign Expert in China* (2016–18). He is also engaged as a *Technical Sediment Expert* of Government of India (2023–).

He is a *fellow* of *the Indian National Science Academy (FNA), Indian Academy of Sciences* (*FASc*), *the National Academy of Sciences India* (*FNASc*), *Indian National Academy of Engineering* (*FNAE*) and *International Association for Hydro-Environment Engineering and Research* (*FIAHR*). He has received the *JC Bose Fellowship* award in 2018.

BIOGRAPHICAL DATA

Subhasish Dey

FNA, FASc, FNASc, FNAE, FIAHR, MASCE
JC Bose Fellow

Distinguished Professor, Department of Civil and Infrastructure Engineering
Indian Institute of Technology Jodhpur
Jodhpur 342030, Rajasthan
India

E-mail: subhasish@iitj.ac.in
Phone: +91 291 280 1667

Fields of Research Interest

Applied Hydrodynamics

Specific fields of research interest are as follows:

Analytical Hydrodynamics: Boundary layer, vortex flow, flow modeling
Turbulence: Coherent structure, bursting, turbulent flow measurements
Fluvial Hydraulics: Sediment transport and scour
Shallow fluid flows: Submerged wall jets, offset jets, wall transpiration

Educational Degrees

PhD	Department of Civil Engineering, Indian Institute of Technology Kharagpur, (PhD in Civil Engineering) 1992
	Thesis: Clear water scour around circular bridge piers: A model
MTech	Department of Civil Engineering, Indian Institute of Technology Kharagpur, (MTech in Hydraulic Engineering) 1984
BE	University of North Bengal, (BE in Civil Engineering) 1981

Present Position

Distinguished Professor	Department of Civil and Infrastructure Engineering, Indian Institute of Technology Jodhpur, Rajasthan, India (2023–)
Head	Department of Civil and Infrastructure Engineering, Indian Institute of Technology Jodhpur, Rajasthan, India (2023–)

Previous Positions

Professor	Department of Civil Engineering, Indian Institute of Technology Kharagpur, West Bengal, India (2007–2023)
Head	Department of Civil Engineering, Indian Institute of Technology Kharagpur, West Bengal, India (2013–15)
Brahmaputra Chair	Department of Civil Engineering, Indian Institute of Technology Kharagpur, West Bengal, India (2009–14 and April–September 2015)

Adjunct Professor	Physics & Applied Mathematics Unit, Indian Statistical Institute Kolkata (2014–19)
Associate Professor	Department of Civil Engineering, Indian Institute of Technology Kharagpur, West Bengal, India (2002–07)
Assistant Professor	Department of Civil Engineering, Indian Institute of Technology Kharagpur, West Bengal, India (1998–2002)
Senior Lecturer	Department of Applied Mechanics, National Institute of Technology Durgapur, West Bengal, India (1990–98)
Lecturer	Department of Applied Mechanics, National Institute of Technology Durgapur, West Bengal, India (1984–90)

Associate Editor of Journals

Proceedings A of the Royal Society of London: Mathematical, Physical and Engineering Sciences, The Royal Society, London (2018–)
Journal of Geophysical Research – Earth Surface, American Geophysical Union (AGU), USA (2020–)
Journal of Hydraulic Engineering, American Society of Civil Engineers (ASCE), USA (2008–)
Journal of Hydraulic Research, International Association for Hydro-Environment Engineering and Research (IAHR), Spain (2013–)
Sedimentology, Blackwell Publishing (2008–)
Acta Geophysica, Polish Academy of Sciences, Springer (2010–)
Journal of Hydro-Environment Research, Elsevier Publishers (2007–)
International Journal of Sediment Research, Elsevier Publishers (2007–)
KSCE Journal of Civil Engineering, Springer (2008–11)

Member of Editorial Board of Journals

Environmental Fluid Mechanics, Springer (2021–)
Journal of Hydraulics, Iranian Hydraulic Association (2021–)
Engineering Applications of Computational Fluid Mechanics, Taylor and Francis, UK (2006–)
International Review of Civil Engineering, Praise Worthy Prize, USA (2009–)
Flow Measurement and Instrumentation, Elsevier Publishers (2004–20)
Water Management Journal, Institution of Civil Engineers (London), UK (2004–08)

Guest Editor of Journals

Special Issue of Environmental Fluid Mechanics: *Hydrodynamic and Fluvial Instabilities*, Springer (2022)

Special Issue of Water: *Water-Worked Bedload: Hydrodynamic and Mass Transport*, IWA (2019)

List of Publications

Book (Total Number 2)

1. **Dey S** (2014): Fluvial hydrodynamics: Hydrodynamic and sediment transport phenomena. Springer-Verlag, Berlin
2. Rowinski P and **Dey S** (editors) (2019): Water: Water-worked bedload: Hydrodynamic and mass transport, MDPI, Basel, Switzerland

Book Chapter (Total Number 10)

1. Sarkar S, Ali SZ and **Dey S** (2021): Turbulence in wall-wake flow downstream of an isolated dunal bedform. R Gaudio (ed), *Turbulence and Flow–Sediment Interactions in Open-Channel Flows*, MDPI, Switzerland, 165–182
2. **Dey S** and Saraka S (2020): Turbulent length scales and Reynolds stress anisotropy in wall-wake flow downstream of an isolated dunal bedform. M B Kalinowska et al. (eds), *Recent Trends in Environmental Hydraulics*, Springer-Verlag, Berlin, 1–21
3. Padhi E, **Dey S**, Penna N and Gaudio R (2020): Hydrodynamics of water-worked and screeded gravel-bed flows. M B Kalinowska et al. (eds), *Recent Trends in Environmental Hydraulics*, Springer-Verlag, Berlin, 207–218
4. Saraka S and **Dey S** (2020): Turbulence in wall-wake flow downstream of an isolated dune. M B Kalinowska et al. (eds), *Recent Trends in Environmental Hydraulics*, Springer-Verlag, Berlin, 241–252
5. Padhi E, **Dey S**, Desai VR, Penna N and Gaudio R (2019): Water-worked gravel bed: state-of-the-art review. P Rowinski and S Dey (eds), *Water-Worked Bedload: Hydrodynamic and Mass Transport*, MDPI, Switzerland, 165–182
6. Khaple S, Hanmaiahgari PR, Gaudio R and **Dey S** (2018): Time variation of scour at downstream pier for two piers in tandem arrangement. M B Kalinowska et al. (eds), *Free Surface Flows and Transport Processes*, Springer-Verlag, Berlin, 235–243
7. Ferraro D and **Dey S** (2015): Principles of mechanics of bedforms. P Rowinski and A Radecki-Pawlik (eds), *Rivers - Physical, Fluvial and Environmental Processes*, Springer-Verlag, Berlin, 79–98
8. **Dey S**, Bose SK and Castro-Orgaz O (2012): Hydrodynamics of undular free surface flows. P Rowinski (ed), *Experimental and Computational Solutions of Hydraulic Problems*, Springer-Verlag, Berlin, 53–70
9. Gaudio R and **Dey S** (2012): Evidence of non-universality of von Kármán's κ: P Rowinski (ed), *Experimental and Computational Solutions of Hydraulic Problems*, Springer-Verlag, Berlin, 71–83
10. **Dey S** (2011): Entrainment threshold of loose boundary streams. P Rowinski (ed), *Experimental Methods in Hydraulic Research*, Springer-Verlag, Berlin, 29–48

Journal Paper (Total Number 224)

1. **Dey S**, Mahato R and SK Ali (2024): Linear and weakly nonlinear instabilities of sand waves by a turbulent flow. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 150 (in press)
2. Zhao C, Fang F, Ouro P, Stoesser T and **Dey S** (2024): Response of bedload and bedforms to near-bed flow structures. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 150 (in press)
3. Chowdhury S**,** D Sen and **Dey S** (2024): Submerged wall jet on a macro-rough boundary: turbulent flow characteristics and their scaling laws. *Environmental Fluid Mechanics*, Springer, 24 (in press)
4. SK Ali and **Dey S** (2023): Universal law of skin-friction coefficient in an axisymmetric turbulent boundary layer flow. *Journal of Fluid Mechanics*, Cambridge University Press, UK, 974(November), A31
5. Mahato R, **Dey S** and SK Ali (2023): Hydrodynamics of turbidity currents evolving over a plane bed. *Physics of Fluids*, American Institute of Physics (AIP), 35(10), 105137
6. Wang J, He G, Huang L, **Dey S** and Fang H (2023): Effects of submerged flexible vegetation on scalar transport in an open-channel flow. *Water Resources Research*, American Geophysical Union (AGU), 59(9), e2022WR034235

7. Mahato R, SK Ali and **Dey S** (2023): Stability of longitudinal sediment waves formed by turbidity currents: Linear and weakly nonlinear perspectives. *Proceedings A of the Royal Society, London*, UK, 479(September), 20230367
8. Fu J, He G, Huang L, **Dey S** and Fang H (2023): Swaying motions of submerged flexible vegetation. *Journal of Fluid Mechanics*, Cambridge University Press, UK, 971(September), A14
9. **Dey S**, Mahato R and SK Ali (2023): Turbulent shear flow over a downstream-skewed wavy bed: An analytical model based on the RANS equations with Boussinesq approximation. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 149(9), 04023028
10. D'Ippolito A, Calomino F, **Dey S**, Penna N and Gaudio R (2023): Bedload transport through emergent vegetation: current status and its future prospect. *Environmental Fluid Mechanics*, Springer, 23(3), 711–733
11. Wang J, He G, **Dey S** and Fang H (2022): Fluid–structure interaction in a flexible vegetation canopy in an open channel. *Journal of Fluid Mechanics*, Cambridge University Press, UK, 951(November), A41
12. Wang J, He G, **Dey S** and Fang H (2022): Influence of submerged flexible vegetation on turbulence in an open-channel flow. *Journal of Fluid Mechanics*, Cambridge University Press, UK, 947(September), A31
13. Mahato R, **Dey S** and SK Ali (2022): Submarine channels formation driven by turbidity currents interacting with an erodible bed. *Proceedings A of the Royal Society*, London, UK, 478(July), 20220137
14. Ali SZ and **Dey S** (2022): Origin of the scaling laws of developing turbulent boundary layers. *Physics of Fluids*, American Institute of Physics (AIP), 34(7), 071402
15. Ali SZ and **Dey S** (2022): Discovery of the zeroth law of helicity spectrum in the pre-inertial range of wall turbulence. *Physics of Fluids*, American Institute of Physics (AIP), 34(7), 071401
16. D'Ippolito A, Calomino F, Penna N, **Dey S** and Gaudio R (2022): Simulation of accelerated subcritical flow profiles in an open channel with emergent rigid vegetation. *Applied Sciences*, MDPI, 12(14), 6960
17. Gamero P, Cantero-Chinchilla FN, Bergillos RJ, Castro-Orgaz O and **Dey S** (2022): Shallow-water lee-side waves at obstacles: Experimental characterization and turbulent non-hydrostatic modeling using weighted-averaged residual equations. *Environmental Modelling and Software*, Elsevier, 155(September), 105422
18. Mahato R, **Dey S** and SK Ali (2022): Planform evolution of a sinuous channel triggered by curvature and autogenic width oscillations due to generic grain transport. *Physics of Fluids*, American Institute of Physics (AIP), 34(4), 044110
19. **Dey S**, Mahato R and Ali SK (2022): Linear stability of sand waves sheared by a turbulent flow. *Environmental Fluid Mechanics*, Springer, 22(2–3), 429–446
20. Zhao C, Ouro P, Stoesser T, **Dey S** and Fang H (2022): Response of flow and saltating particle characteristics to bed roughness and particle spatial density. *Water Resources Research*, American Geophysical Union (AGU), 58(3), e2021WR030847
21. Rathore V, Penna N, **Dey S** and Gaudio R (2022): Response of open-channel flow to a sudden change from smooth to rough bed. *Environmental Fluid Mechanics*, Springer, 22(1), 87–121
22. Penna N, Padhi E, **Dey S** and Gaudio R (2022): Response of turbulence stresses and scaling behavior of high-order structure functions to a water-worked gravel-bed surface and its implication on sediment transport. *International Journal of Sediment Research*, Elsevier, 37(1), 1–13
23. **Dey S**, Rathore V, Penna N and Gaudio R (2021): Hydrodynamics of flow over a gradually varied bed roughness. *Physics of Fluids*, American Institute of Physics (AIP), 33(12), 125112

24. Mahato R, **Dey S** and Ali SZ (2021): Instability of a meandering channel with variable width and curvature: role of sediment suspension. *Physics of Fluids*, American Institute of Physics (AIP), 33(11), 111401
25. Roy Biswas T, **Dey S** and Sen DJ (2021): Undular hydraulic jumps: Critical analysis of 2D RANS-VOF simulations. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 147(11), 06021017
26. Ali SZ and **Dey S** (2021): Linear stability of dunes and antidunes. *Physics of Fluids*, American Institute of Physics (AIP), 33(9), 094109
27. Rathore V, **Dey S**, Penna N and Gaudio R (2021): Turbulent flow characteristics over an abrupt step change in bed roughness. *Physics of Fluids*, American Institute of Physics (AIP), 33(9), 095106
28. Ali SK, **Dey S** and Mahato R (2021): Mega riverbed-patterns: linear and weakly-nonlinear perspectives. *Proceedings A of the Royal Society*, *London*, UK, 477(August), 20210331
29. Roy Biswas T, **Dey S** and Sen DJ (2021): Modeling positive surge propagation in open channels using the Serre-Green-Naghdi equation. *Applied Mathematical Modelling*, Elsevier 97(September), 803–820
30. Penna N, Padhi E, **Dey S** and Gaudio R (2021): Statistical characterization of unworked and water-worked gravel-bed roughness structures. *Journal of Hydraulic Research*, International Association for Hydraulic Research (IAHR), 59(3), 420–436
31. Ali SZ and **Dey S** (2021): Interfacial instability of sand patterns induced by turbulent shear flow. *International Journal of Sediment Research*, Elsevier, 36(4), 449–456
32. Roy Biswas T, Bagam S, **Dey S** and Sen DJ (2021): Equilibrium approach for modeling erosional failure of granular dams. *Physics of Fluids*, American Institute of Physics (AIP), 33(4), 043306
33. Mahato R, Ali SK and **Dey S** (2021): Hydrodynamic instability of free river bars. *Physics of Fluids*, American Institute of Physics (AIP), 33(4), 045105
34. Ali SZ and **Dey S** (2021): Instability of large-scale riverbed patterns. *Physics of Fluids*, American Institute of Physics (AIP), 33(1), 015109
35. Ali SZ and **Dey S** (2020): The law of the wall: A new perspective. *Physics of Fluids*, American Institute of Physics (AIP), 32(12), 121401
36. **Dey S,** Paul P, Ali SZ and Padhi E (2020): Reynolds stress anisotropy in flow over two-dimensional rigid dunes. *Proceedings A of the Royal Society*, *London*, UK, 476(October), 20200638
37. Mahato RK and **Dey S** (2020): Hydraulics of seepage from trapezoidal channels. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 146(12), 04020083
38. Sarkar S and **Dey S** (2020): Self-preserving characteristics in wall-wake flow downstream of an isolated bedform. *Environmental Fluid Mechanics*, Springer, 20(4), 1119–1139
39. **Dey S,** Paul P and Padhi E (2020): Conditional spatially averaged turbulence and dispersion characteristics in flow over two-dimensional dunes. *Physics of Fluids*, American Institute of Physics (AIP), 32(6), 065106
40. **Dey S** and Ali SZ (2020): Fluvial instabilities. *Physics of Fluids*, American Institute of Physics (AIP), 32(6), 061301
41. Penna N, Padhi E, **Dey S** and Gaudio R (2020): Structure functions and invariants of the anisotropic Reynolds stress tensor in turbulent flows on water-worked gravel beds. *Physics of Fluids*, American Institute of Physics (AIP), 32(5), 055106
42. **Dey S**, Ali SZ and Padhi E (2020): Hydrodynamic lift on sediment particles at entrainment: present status and its prospect. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 146(6), 03120001

43. Zhao C, Fang H, Liu Y, **Dey S** and He G (2020): Impact of particle shape on saltating mode of bedload transport sheared by turbulent flow. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 146(5), 04020034
44. **Dey S,** Paul P, Fang H and Padhi E (2020): Hydrodynamics of flow over two-dimensional dunes. *Physics of Fluids*, American Institute of Physics (AIP), 32(2), 025106
45. Padhi E, **Dey S**, Penna N and Gaudio R (2020): Conditional turbulence characteristics in water-worked and screeded gravel-bed flows. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 146(2), 04019052
46. **Dey S**, Ali SZ and Padhi E (2019): Bedload transport from analytical and turbulence phenomenological perspectives. *International Journal of Sediment Research*, Elsevier, 34(6), 509–530
47. Gazi AH, Afzal MS and **Dey S** (2019): Scour around piers under waves: current status of research and its future prospect. *Water*, MDPI, 11(11), 2212
48. Padhi E, Ali SZ and **Dey S** (2019): Mechanics of bed particle saltation in turbulent wall-shear flow. *Proceedings A of the Royal Society*, *London*, UK, 475(October), 20190318
49. Sarkar S, Ali SZ and **Dey S** (2019): Turbulence in wall-wake flow downstream of an isolated dunal bedform. *Water*, MDPI, 11(10), 1975
50. **Dey S**, Ali SZ and Padhi E (2019): Terminal fall velocity: The legacy of Stokes from the perspective of fluvial hydraulics. *Proceedings A of the Royal Society*, *London*, UK**,** 475(August), 20190277
51. **Dey S** and Ali SZ (2019): Bed sediment entrainment by streamflow: State of the science. *Sedimentology*, Wiley, 66(5), 1449–1485
52. Ali SZ and **Dey S** (2019): Hydrodynamics of a weakly curved channel. *Physics of Fluids*, American Institute of Physics (AIP), 31(5), 055110
53. Cantero-Chinchilla FN, Castro-Orgaz O and **Dey S** (2019): Prediction of overtopping dike failure: Sediment transport and dynamic granular bed deformation model. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 145(6), 04019021
54. Padhi E, Penna N, **Dey S** and Gaudio R (2019): Near-bed turbulence structures in water-worked and screeded gravel-bed flows. *Physics of Fluids*, American Institute of Physics (AIP), 31(4), 045107
55. Padhi E, **Dey S**, Desai VR, Penna N and Gaudio R (2019): Water-worked gravel bed: state-of-the-art review. *Water*, MDPI, 11(4), 649
56. Ali SZ and **Dey S** (2019): Bed particle saltation in turbulent wall-shear flow: A review. *Proceedings A of the Royal Society*, *London*, UK, 475(March), 20180824
57. **Dey S**, Ravi Kishore G, Castro-Orgaz O and Ali SZ (2019): Turbulent length scales and anisotropy in submerged turbulent plane offset jets. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 145(2), 04018085
58. Padhi E, Penna N, **Dey S** and Gaudio R (2018): Spatially averaged dissipation rate in flows over water-worked and screeded gravel beds**.** *Physics of Fluids*, American Institute of Physics (AIP), 30(12), 125106
59. Cheng W, Fang H, Lai H, Huang L and **Dey S** (2018): Effects of biofilm on turbulence characteristics and the transport of fine sediment. *Journal of Soils and Sediments*, Springer, 18(October), 3055–3069
60. Padhi E, Penna N, **Dey S** and Gaudio R (2018): Hydrodynamics of water-worked and screeded gravel beds: A comparative study. *Physics of Fluids*, American Institute of Physics (AIP), 30(8), 085105
61. Cantero-Chinchilla FN, Castro-Orgaz O, Schmocker L, Hager WH and **Dey S** (2018): Depth-averaged modelling of granular dike overtopping. *Journal of Hydraulic Research*, International Association for Hydraulic Research (IAHR), 56(4), 537–550

62. **Dey S**, Lodh R and Sarkar S (2018): Turbulence characteristics in wall-wake flows downstream of wall-mounted and near-wall horizontal cylinders. *Environmental Fluid Mechanics*, Springer, 18(4), 891–921
63. Bagam S, Sen DJ and **Dey S** (2018): Moraine dam breach and glacial lake outburst flood generation by physical and numerical models. *Journal of Hydrology*, Elsevier, 563(August), 694–710
64. Fang H, Han X, He G and **Dey S** (2018): Influence of permeable beds on hydraulically macro-rough flow. *Journal of Fluid Mechanics*, Cambridge University Press, UK, 847(July), 552–590
65. Langhi M, Hosoda T and **Dey S** (2018): Analytical solution of k-ε model for nonuniform flows. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 144(7), 04018033
66. **Dey S** and Ali SZ (2018): Advances in modeling of bed particle entrainment sheared by turbulent flow. *Physics of Fluids*, American Institute of Physics (AIP), 30(6), 061301
67. **Dey S**, Ali SZ and Padhi E (2018): Advances in analytical modeling of suspended sediment transport. *Journal of Hydro-Environment Research*, Elsevier, 20(June), 110–126
68. **Dey S**, Swargiary D, Sarkar S, Fang H and Gaudio R (2018): Turbulence features in a wall-wake flow downstream of a wall-mounted vertical cylinder. *European Journal of Mechanics / B Fluids*, Elsevier, 69(May-June), 46–61
69. **Dey S**, Ravi Kishore G, Castro-Orgaz O and Ali SZ (2018): Reynolds stress in submerged turbulent plane offset jets: Mathematical model. *Journal of Engineering Mechanics*, American Society of Civil Engineers (ASCE), 144(6), 06018001
70. Tan G, Fang H, **Dey S** and Wu W (2018): Rui-Jin Zhang's research on sediment transport. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 144(6), 02518002
71. **Dey S**, Swargiary D, Sarkar S, Fang H and Gaudio R (2018): Self-similarity in turbulent wall-wake flow downstream of a wall-mounted vertical cylinder. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 144(6), 04018023
72. Ali SZ and **Dey S** (2018): Impact of phenomenological theory of turbulence on pragmatic approach to fluvial hydraulics. *Physics of Fluids*, American Institute of Physics (AIP), 30(4), 045105
73. Bose SK and **Dey S** (2018): Far-wake flows downstream of cylinders: a novel generalized similarity method. *European Journal of Mechanics / B Fluids*, Elsevier, 67(January-February), 65–69
74. Ali SZ and **Dey S** (2017): Hydrodynamic instability of meandering channels. *Physics of Fluids*, American Institute of Physics (AIP), 29(12), 125107
75. Khaple S, Hanmaiahgari PR, Gaudio R and **Dey S** (2017): Splitter plate as a flow-altering pier scour countermeasure. *Acta Geophysica*, Springer, 65(5), 957–975
76. **Dey S** and Ali SZ (2017): Origin of the onset of meandering of a straight river. *Proceedings A of the Royal Society, London*, UK, 473(August), 20170376
77. **Dey S**, Ravi Kishore G, Castro-Orgaz O and Ali SZ (2017): Hydrodynamics of submerged turbulent plane offset jets. *Physics of Fluids*, American Institute of Physics (AIP), 29(6), 065112
78. **Dey S** and Ali SZ (2017): Stochastic mechanics of loose boundary particle transport in turbulent flow. *Physics of Fluids*, American Institute of Physics (AIP), 29(5), 055103
79. **Dey S** and Ali SZ (2017): Mechanics of sediment transport: Particle scale of entrainment to continuum scale of bedload flux. *Journal of Engineering Mechanics*, American Society of Civil Engineers (ASCE), 143(11), 04017127
80. Papanicolaou AN, Wilson CG, Sutarto TE, Bertrand F, Rinaldi M, **Dey S** and Langendoen E (2017): Understanding mass fluvial erosion along a bank profile:

using PEEP technology for quantifying retreat lengths and identifying event timing. *Earth Surface Processes and Landforms*, Wiley, 42(11), 1717–1732

81. Fang H, Cheng W, Fazeli M and **Dey S** (2017): Bedforms and flow resistance of cohesive beds with and without biofilm coating. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 143(8), 06017010
82. Khaple S, Hanmaiahgari PR, Gaudio R and **Dey S** (2017): Interference of an upstream pier on local scour at downstream piers. *Acta Geophysica*, Springer, 65(1), 29–46
83. Ali SZ and **Dey S** (2017): Origin of the scaling laws of sediment transport. *Proceedings A of the Royal Society*, *London*, UK, 473(January), 20160785
84. Ali SZ and **Dey S** (2016): Mechanics of advection of suspended particles in turbulent flow. *Proceedings A of the Royal Society*, *London*, UK, 472(November), 20160749
85. Ali SZ and **Dey S** (2016): Scaling laws of rough turbulent flows from turbulence phenomenology: An overview and a new approach. *Proceedings of Indian National Science Academy*, 82(2, supplementary issue), 341–348
86. Cantero-Chinchilla FN, Castro-Orgaz O, **Dey S** and Ayuso JL (2016): Nonhydrostatic dam break flows. I: Physical equations and numerical schemes. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 142(10), 04016068
87. Cantero-Chinchilla FN, Castro-Orgaz O, **Dey S** and Ayuso JL (2016): Nonhydrostatic dam break flows. II: One-dimensional depth-averaged modeling for movable bed flows. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 142(10), 04016069
88. Fang H, Fazeli M, Cheng W and **Dey S** (2016): Transport of biofilm-coated sediment particles. *Journal of Hydraulic Research*, International Association for Hydraulic Research (IAHR), 54(6), 631–645
89. Sarkar S, Papanicolaou AN and **Dey S** (2016): Turbulence in a gravel-bed stream with an array of large gravel obstacles. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 142(11), 04016052
90. Cantero-Chinchilla FN, Castro-Orgaz O and **Dey S** (2016): Distribution of suspended sediment concentration in wide sediment-laden streams: a novel power-law theory. *Sedimentology*, Wiley, 63(6), 1620–1633
91. Ali SZ and **Dey S** (2016): Hydrodynamics of sediment threshold. *Physics of Fluids*, American Institute of Physics (AIP), 28(7), 075103
92. Shafai-Bejestan M, Nabavi SMR and **Dey S** (2016): Scour downstream of grade control structures under the influence of upward seepage. *Acta Geophysica*, Springer, 64(3), 694–710
93. Ferraro D, Servidio S, Carbone V, **Dey S** and Gaudio R (2016): Turbulence laws in natural bed flows. *Journal of Fluid Mechanics*, Cambridge University Press, UK, 798(July), 540–571
94. Ali SZ and **Dey S** (2016): Theory of turbulent flow over a wavy boundary. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 142(6), 04016006
95. Ali SZ and **Dey S** (2016): Entry flow in curved pipes: Turbulent boundary layer approach. *Journal of Hydraulic Research*, International Association for Hydraulic Research (IAHR), 54(1), 90–101
96. Solari L and **Dey S** (2016): Marchi's research on supercritical flow in tight bends and backwater effects. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 142(2), 02515004
97. Bose SK and **Dey S** (2016): Circular far-wake flow behind a sphere: solutions to the second order. *Journal of Engineering Mechanics*, American Society of Civil Engineers (ASCE), 142(1), 06015005

98. Cantero-Chinchilla FN, **Dey S**, Castro-Orgaz O and Ali SZ (2015): Hydrodynamic analysis of fully developed turbidity currents over plane beds based on self-preserving velocity and concentration distributions. *Journal of Geophysical Research, Earth Surface*, American Geophysical Union (AGU), 120(10), 2176–2199
99. Bolhassani R, Afzalimehr H and **Dey S** (2015): Effects of relative submergence and bed slope on sediment incipient motion under decelerating flows. *Journal of Hydrology and Hydromechanics*, De Gruyter, 63(4), 295–302
100. Sarkar S and **Dey S** (2015): Turbulent length scales and anisotropy downstream of a wall mounted sphere. *Journal of Hydraulic Research*, International Association for Hydraulic Research (IAHR), 53(5), 649–658
101. Cantero-Chinchilla FN, Castro-Orgaz O, Garcia A, Ayuso JL and **Dey S** (2015): Free surface profiles in river flows: Can standard energy-based gradually-varied flow computations be pursued? *Journal of Hydrology*, Elsevier, 529(Part 3), 1644–1656
102. Sarkar S and **Dey S** (2015): Turbulence anisotropy in flow at an entrainment threshold of sediment. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 141(7), 06015007
103. Castro-Orgaz O, Hager WH and **Dey S** (2015): Depth-averaged model for undular hydraulic jump. *Journal of Hydraulic Research*, International Association for Hydraulic Research (IAHR), 53(3), 351–363
104. Maji S, Hanmaiahgari PR and **Dey S** (2014): Experimental studies of local scour in the pressurized OCF below a wooden log across the flow. *Sadhana, Academy Proceedings in Engineering Sciences*, Indian Academy of Sciences, 39(October), 1245–1257
105. Castro-Orgaz O and **Dey S** (2014): Second-order shallow-flow theory and Dupuit approximation for phreatic aquifers. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 140(9), 04014040
106. Bose SK and **Dey S** (2014): Gravity waves on turbulent shear flow: Reynolds averaged approach. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 140(3), 340–346
107. Bose SK and **Dey S** (2013): Sediment entrainment probability and threshold of sediment suspension: Exponential-based approach. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 139(10), 1099–1106
108. Link O, Klischies K, Montalva G and **Dey S** (2013): Effects of bed compaction on scour at piers in sand-clay mixtures. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 139(9), 1013–1019
109. Castro-Orgaz O, Mateos L and **Dey S** (2013): Revisiting the energy-momentum method for rating vertical sluice gates under submerged flow conditions. *Journal of Irrigation and Drainage Engineering*, American Society of Civil Engineers (ASCE), 139(4), 325–335
110. Langhi M, Hosoda T and **Dey S** (2013): Velocity deformation model for unsteady open-channel flows over smooth and rough beds. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 139(4), 433–443
111. Bose SK and **Dey S** (2013): Turbulent unsteady flow profiles over an adverse slope. *Acta Geophysica*, Springer, 61(1), 84–97
112. Castro-Orgaz O, Giráldez JV, Mateos L and **Dey S** (2012): Is the von Kármán constant affected by sediment suspension? *Journal of Geophysical Research, Earth Surface*, American Geophysical Union (AGU), 117(F4), F04002
113. **Dey S**, Das R, Gaudio R and Bose SK (2012): Turbulence in mobile-bed streams. *Acta Geophysica*, Springer, 60(6), 1547–1588
114. **Dey S** and Das R (2012): Gravel-bed hydrodynamics: Double-averaging approach. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 138(8), 707–725

115. Bose SK and **Dey S** (2012): Instability theory of sand ripples formed by turbulent shear flows. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 138(8), 752–756
116. Bose SK, Castro-Orgaz O and **Dey S** (2012): Free surface profiles of undular hydraulic jumps. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 138(4), 362–366
117. **Dey S**, Sarkar S and Ballio F (2011): Double-averaging turbulence characteristics in seeping rough-bed streams. *Journal of Geophysical Research, Earth Surface*, American Geophysical Union (AGU), 116(F3), F03020
118. **Dey S**, Sarkar S, Bose SK, Tait S and Castro-Orgaz O (2011): Wall-wake flows downstream of a sphere placed on a plane rough wall. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 137(10), 1173–1189
119. **Dey S**, Helkjær A, Sumer BM and Fredsoe J (2011): Scour at vertical piles in sand-clay mixtures under waves. *Journal of Waterway, Port, Coastal and Ocean Engineering*, American Society of Civil Engineers (ASCE), 137(6), 324–331
120. Castro-Orgaz O and **Dey S** (2011): Power-law velocity profile in turbulent boundary layers: An integral Reynolds-number dependent solution. *Acta Geophysica*, Springer, 59(5), 993–1012
121. **Dey S**, Sarkar S and Solari L (2011): Near-bed turbulence characteristics at the entrainment threshold of sediment beds. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 137(9), 945–958
122. Sarkar S and **Dey S** (2010): Double-averaging turbulence characteristics in flows over a gravel-bed. *Journal of Hydraulic Research*, International Association for Hydraulic Research (IAHR), 48(6), 801–809
123. **Dey S**, Nath TK and Bose SK (2010): Fully rough submerged plane wall-jets. *Journal of Hydro-Environment Research*, Elsevier**,** 4(4), 301–316
124. Gaudio R, Miglio R and **Dey S** (2010): Non-universality of von Kármán's κ in fluvial streams. *Journal of Hydraulic Research*, International Association for Hydraulic Research (IAHR), 48(5), 658–663
125. Tafarojnoruz A, Gaudio R and **Dey S** (2010): Flow-altering countermeasures against scour at bridge piers: a review. *Journal of Hydraulic Research*, International Association for Hydraulic Research (IAHR), 48(4), 441–452
126. Bose SK and **Dey S** (2010): Universal probability distributions of turbulence in open channel flows. *Journal of Hydraulic Research*, International Association for Hydraulic Research (IAHR), 48(3), 388–394
127. **Dey S**, Nath TK and Bose SK (2010): Submerged wall-jets subjected to injection and suction from the wall. *Journal of Fluid Mechanics*, Cambridge University Press, UK, 653(June), 57–97
128. Tammela S, Marttila H, **Dey S** and Klove B (2010): Effect and design of an underminer structure. *Journal of Hydraulic Research*, International Association for Hydraulic Research (IAHR), 48(2), 188–196
129. **Dey S** and Nath TK (2010): Turbulence characteristics in flows subjected to boundary injection and suction. *Journal of Engineering Mechanics*, American Society of Civil Engineers (ASCE), 136(7), 877–888
130. Ballio F, Radice A and **Dey S** (2010): Temporal scales for live-bed scour at abutments. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 136(7), 395–402
131. Chen X, Ma J and **Dey S** (2010): Sediment transport on arbitrary slopes: Simplified model. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 136(5), 311–317
132. Bose SK and **Dey S** (2009): Reynolds averaged theory of turbulent shear flows over undulating beds and formation of sand waves. *Physical Review E*, The American Physical Society, 80(3), 036304

133. Bose SK and **Dey S** (2009): Suspended load in flows on erodible bed. *International Journal of Sediment Research*, Elsevier, 24(3), 315–324
134. Afzalimhr H and **Dey S** (2009): Influence of bank vegetation and gravel bed on velocity and Reynolds stress distributions. *International Journal of Sediment Research*, Elsevier, 24(2), 236**–**246
135. Lin WJ, Lin C, Hsieh SC and **Dey S** (2009): Flow characteristics around a circular cylinder placed horizontally above a plane boundary. *Journal of Engineering Mechanics*, American Society of Civil Engineers (ASCE), 135(7), 697–716
136. Castro-Orgaz O and **Dey S** (2009): One-dimensional channel flow equations with curvature revisited. *Journal of Hydraulic Research*, International Association for Hydraulic Research (IAHR), 47(2), 157–166
137. Raikar RV and **Dey S** (2009): Maximum scour depth at piers in armor-beds. *KSCE Journal of Civil Engineering*, Springer, 13(2), 137–142
138. **Dey S** and Sarkar A (2008): Characteristics of submerged jets in evolving scour hole downstream of an apron. *Journal of Engineering Mechanics*, American Society of Civil Engineers (ASCE), 134(11), 927–936
139. **Dey S**, Chiew YM and Kadam MS (2008): Local scour and riprap stability at an abutment in a degrading bed. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 134(10), 1496–1502
140. **Dey S** and Singh NP (2008): Clear-water scour below underwater pipelines under steady flow. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 134(5), 588–600
141. **Dey S** and Papanicolaou A (2008): Sediment threshold under stream flow: A state-of-the-art review. *KSCE Journal of Civil Engineering*, Springer, 12(1), 45–60
142. Lin C, Ho TC and **Dey S** (2008): Characteristics of steady horseshoe vortex system near junction of square cylinder and base plate. *Journal of Engineering Mechanics*, American Society of Civil Engineers (ASCE), 134(2), 184–197
143. Raikar RV and **Dey S** (2008): Kinematics of horseshoe vortex development in an evolving scour hole at a square cylinder. *Journal of Hydraulic Research*, International Association for Hydraulic Research (IAHR), 46(2), 247–264
144. **Dey S** and Sarkar A (2008): Characteristics of turbulent flow in submerged jumps on rough beds. *Journal of Engineering Mechanics*, American Society of Civil Engineers (ASCE), 134(1), 49–59 [Errata (2008): *Journal of Engineering Mechanics*, 134(7), 599]
145. **Dey S,** Raikar RV and Roy A (2008): Scour at submerged cylindrical obstacles under steady flow. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 134(1), 105–109
146. Afzalimhr H, **Dey S** and Rasoulianfar P (2007): Influence of decelerating flow on incipient motion of a gravel-bed stream. *Sadhana, Academy Proceedings in Engineering Sciences*, Indian Academy of Sciences, 32(October), 545–559
147. **Dey S** and Singh NP (2007): Clear-water scour depth below underwater pipelines. *Journal of Hydro-Environment Research*, Elsevier, 1(2), 157–162
148. **Dey S** and Sarkar A (2007): Computation of Reynolds and boundary shear stress in submerged jets on rough boundaries. *Journal of Hydro-Environment Research*, Elsevier, 1(2), 110–117
149. Bose SK and **Dey S** (2007): Curvilinear flow profiles based on Reynolds averaging. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 133(9), 1074–1079
150. Sarkar A and **Dey S** (2007): Effect of seepage on scour due to submerged jets and resulting flow field. *Journal of Hydraulic Research*, International Association for Hydraulic Research (IAHR), 45(3), 357–364
151. **Dey S** and Raikar RV (2007): Clear-water scour at piers in sand beds with an armor layer of gravels. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 133(6), 703–711

152. **Dey S** and Raikar RV (2007): Scour below a high vertical drop. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 133(5), 564–568
153. **Dey S** and Raikar RV (2007): Characteristics of horseshoe vortex in developing scour holes at piers. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 133(4), 399–413
154. **Dey S** and Raikar RV (2007): Characteristics of loose rough boundary streams at near-threshold. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 133(3), 288–304
155. Bose SK and **Dey S** (2007): Theory of free surface flow over rough seeping beds. *Proceedings A of the Royal Society*, London, UK, 463(February), 369–383
156. **Dey S** and Sarkar A (2007): Effect of upward seepage on scour and flow downstream of an apron due to submerged jets. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 133(1), 59–69
157. **Dey S** and Lambert MF (2006): Discharge prediction in compound channels by end depth method. *Journal of Hydraulic Research*, International Association for Hydraulic Research (IAHR), 44(6), 767–776
158. **Dey S** and Raikar RV (2006): Live-bed scour in long contractions. *International Journal of Sediment Research*, Elsevier, 21(2), 167–171
159. **Dey S** and Sarkar A (2006): Response of velocity and turbulence in submerged wall jets to abrupt changes from smooth to rough beds and its application to scour downstream of an apron. *Journal of Fluid Mechanics*, Cambridge University Press, UK, 556(June), 387–419
160. **Dey S** and Barbhuiya AK (2006): 3D flow field in a scour hole at a wing-wall abutment. *Journal of Hydraulic Research*, International Association for Hydraulic Research (IAHR), 44(1), 33–50
161. Raikar RV and **Dey S** (2006): Pier scour and thin layered bed scour within a long contraction. *Canadian Journal of Civil Engineering*, National Research Council, Canada, 33(2), 140–150
162. **Dey S**, Sumer BM and Fredsoe J (2006): Control of scour at vertical circular piles under waves and current. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 132(3), 270–279
163. **Dey S** and Sarkar A (2006): Scour downstream of an apron due to submerged horizontal jets. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 132(3), 246–257
164. **Dey S** and Barbhuiya AK (2006): Velocity and turbulence in a scour hole at a vertical-wall abutment. *Flow Measurement and Instrumentation*, Elsevier, 17(1), 13–21
165. **Dey S** (2005): Free overfall from circular channels with flat base. *Journal of Hydraulic Research*, International Association for Hydraulic Research (IAHR), 43(5), 720–723
166. **Dey S** and Barbhuiya AK (2005): Flow field at a vertical-wall abutment. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 131(12), 1126–1135
167. **Dey S** and Raikar RV (2005): Scour in long contractions. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 131(12), 1036–1049
168. Raikar RV and **Dey S** (2005): Scour of gravel beds at bridge piers and abutments. *Water Management Journal*, Institution of Civil Engineers (ICE London), UK, 158(December), 157–162
169. Raikar RV and **Dey S** (2005): Clear-water scour at bridge piers in fine and medium gravel beds. *Canadian Journal of Civil Engineering*, National Research Council, Canada, 32(4), 775–781
170. **Dey S** and Lambert MF (2005): Reynolds stress and bed shear in nonuniform unsteady open-channel flow. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 131(7), 610–614
171. Sarkar A and **Dey S** (2005): Scour downstream of aprons caused by sluices. *Water*

Management Journal, Institution of Civil Engineers (ICE London), UK, 158(June), 55–64

172. **Dey S** (2005): End depth in U-shaped channels: a simplified approach. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 131(6), 513–516
173. **Dey S** and Cheng NS (2005): Reynolds stress in open channel flow with upward seepage. *Journal of Engineering Mechanics*, American Society of Civil Engineers (ASCE), 131(4), 451–467
174. **Dey S** and Barbhuiya AK (2005): Turbulent flow field in a scour hole at a semicircular abutment. *Canadian Journal of Civil Engineering*, National Research Council, Canada, 32(1), 213–232
175. **Dey S** and Barbhuiya AK (2005): Time variation of scour at abutments. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 131(1), 11–23
176. Raikar RV and **Dey S** (2004): Flow field in scoured zone of channel contractions. *International Journal of Sediment Research*, Elsevier, 19(4), 292–311
177. Barbhuiya AK and **Dey S** (2004): Local scour at abutments: a review. *Sadhana, Academy Proceedings in Engineering Sciences*, Indian Academy of Sciences, 29(October), 449–476
178. **Dey S** and Zanke UCE (2004): Sediment threshold with upward seepage. *Journal of Engineering Mechanics*, American Society of Civil Engineers (ASCE), 130(9), 1118–1123
179. **Dey S** and Barbhuiya AK (2004): Clear-water scour at abutments in thinly armored beds. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 130(7), 622–634
180. Raikar RV, Nagesh Kumar D and **Dey S** (2004): End depth computation in inverted semicircular channels using ANNs. *Flow Measurement and Instrumentation*, Elsevier, 15(5-6), 285–293
181. **Dey S** and Barbhuiya AK (2004): Clear water scour at abutments. *Water Management Journal*, Institution of Civil Engineers (ICE London), UK, 157(June), 77–97
182. Barbhuiya AK and **Dey S** (2004): Turbulent flow measurement by the ADV in the vicinity of a rectangular cross-section cylinder placed at a channel sidewall. *Flow Measurement and Instrumentation*, Elsevier, 15(4), 221–237
183. **Dey S** (2004): Critical bed shear for initial movement of sediments on a combined lateral and longitudinal slope. *Nordic Hydrology*, 35(2), 153–164
184. Sarkar A and **Dey S** (2004): Review on local scour due to jets. *International Journal of Sediment Research*, Elsevier, 19(3), 210–238
185. Barbhuiya AK and **Dey S** (2004): Measurement of turbulent flow field at a vertical semicircular cylinder attached to the sidewall of a rectangular channel. *Flow Measurement and Instrumentation*, Elsevier, 15(2), 87–96
186. Barbhuiya AK and **Dey S** (2004): Velocity and turbulence at a wing-wall abutment. *Sadhana, Academy Proceedings in Engineering Sciences*, Indian Academy of Sciences, 29(February), 35–56
187. **Dey S**, Nagesh Kumar D and Ram Singh D (2004): End-depth in inverted semicircular channels: experimental and theoretical studies. *Nordic Hydrology*, 35(1), 73–79
188. Barbhuiya AK and **Dey S** (2003): Vortex flow field in a scour hole around abutments. *International Journal of Sediment Research*, Elsevier, 18(4), 310–325
189. **Dey S** (2003): Threshold of sediment motion on combined transverse and longitudinal sloping beds. *Journal of Hydraulic Research*, International Association for Hydraulic Research (IAHR), 41(4), 405–415
190. **Dey S** (2003): Nonuniform open channel flow with upward seepage through loose beds. *International Journal of Sediment Research*, Elsevier, 18(3), 267–273
191. **Dey S** (2003): Free overfall in inverted semicircular channels. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 129(6), 438–447

192. **Dey S** (2003): Overfall in U-shaped channels. *Journal of Engineering Mechanics*, American Society of Civil Engineers (ASCE), 129(3), 358–362
193. **Dey S** (2003): Incipient motion of bivalve shells on sand beds under flowing water. *Journal of Engineering Mechanics*, American Society of Civil Engineers (ASCE), 129(2), 232–240
194. **Dey S** and Westrich B (2003): Hydraulics of submerged jet subject to change in cohesive bed geometry. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 129(1), 44–53
195. **Dey S** (2002): Free overfall in open channels: state-of-the-art review. *Flow Measurement and Instrumentation*, Elsevier, 13(5-6), 247–264
196. **Dey S** (2002): Free overfall from circular channels with flat base. *Flow Measurement and Instrumentation*, Elsevier, 13(5-6), 209–221
197. **Dey S** and Raju UV (2002): Incipient motion of gravel and coal beds. *Sadhana, Academy Proceedings in Engineering Sciences*, Indian Academy of Sciences, 27(December), 559–568
198. **Dey S** and Kumar A (2002): Initiation of shell motion on sand beds: An experimental study. *International Journal of Sediment Research*, Elsevier, 17(4), 286–297
199. **Dey S** and Ravi Kumar B (2002): Hydraulics of free overfall in Δ-shaped channels. *Sadhana, Academy Proceedings in Engineering Sciences*, Indian Academy of Sciences, 27(June), 353–363
200. **Dey S** (2002): Secondary boundary layer and wall shear for fully developed flow in curved pipes. *Proceedings A of Royal Society*, *London*, UK, 458(February), 283–294
201. **Dey S** (2001): A note on critical flow section in collector channels. *Sadhana, Academy Proceedings in Engineering Sciences*, Indian Academy of Sciences, 26(October), 432–445
202. **Dey S** (2001): Flow measurement by the end-depth method in inverted semicircular channels. *Flow Measurement and Instrumentation*, Elsevier, 12(4), 253–258
203. **Dey S** (2001): Experimental study on incipient motion of sediment particles on generalized sloping fluvial beds. *International Journal of Sediment Research*, Elsevier, 16(3), 391–398
204. **Dey S** (2001): Bank profile of threshold channels: a simplified approach. *Journal of Irrigation and Drainage Engineering*, American Society of Civil Engineers (ASCE), 127(3), 184–187
205. **Dey S** (2001): EDR in circular channels. *Journal of Irrigation and Drainage Engineering*, American Society of Civil Engineers (ASCE), 127(2), 110–112
206. **Dey S** and Debnath K (2001): Sediment pickup on streamwise sloping beds. *Journal of Irrigation and Drainage Engineering*, American Society of Civil Engineers (ASCE), 127(1), 39–43
207. **Dey S** and Debnath K (2000): Influence of streamwise bed slope on sediment threshold under stream flow. *Journal of Irrigation and Drainage Engineering*, American Society of Civil Engineers (ASCE), 126(4), 255–263
208. **Dey S** (2000): Chebyshev solution as aid in computing GVF by standard step method. *Journal of Irrigation and Drainage Engineering*, American Society of Civil Engineers (ASCE), 126(4), 271–274
209. **Dey S** (2000): End depth in steeply sloping rough rectangular channels. *Sadhana, Academy Proceedings in Engineering Sciences*, Indian Academy of Sciences, 25(February), 1–10
210. **Dey S** (1999): Time-variation of scour in the vicinity of circular piers. *Water, Maritime and Energy Journal*, Institution of Civil Engineers (ICE London), UK, 136(June), 67–75
211. **Dey S**, Dey Sarker HK and Debnath K (1999): Sediment threshold under stream flow on horizontal and sloping beds. *Journal of Engineering Mechanics*, American Society of Civil Engineers (ASCE), 125(5), 545–553

212. **Dey S** (1999): Sediment threshold. *Applied Mathematical Modelling*, Elsevier, 23(5), 399–417
213. **Dey S** (1998): Choke-free flow in circular channels with increase in bed elevations. *Journal of Irrigation and Drainage Engineering*, American Society of Civil Engineers (ASCE), 124(6), 317–320
214. **Dey S** (1998): End depth in circular channels. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 124(8), 856–863
215. **Dey S** and Sil SN (1998): Choke-free flow in trapezoidal channels with change in bed elevation. *Sadhana, Academy Proceedings in Engineering Sciences*, Indian Academy of Sciences, 23(June), 259–267
216. **Dey S** (1998): Free overfall in rough rectangular channels: a computational approach. *Water, Maritime and Energy Journal*, Institution of Civil Engineers (ICE London), UK, 130(March), 51–54
217. **Dey S** (1997): Local scour at cylindrical piers, part I: a review of developments of research and part II: bibliography. *International Journal of Sediment Research*, Elsevier, 12(3), 23–57
218. **Dey S** (1996): Sediment pick-up for evolving scour near circular cylinders. *Applied Mathematical Modelling*, Elsevier, 20(7), 534–539
219. **Dey S**, Bose SK and Sastry GLN (1995): Clear water scour at circular piers: a model. *Journal of Hydraulic Engineering*, American Society of Civil Engineers (ASCE), 121(12), 869–876
220. **Dey S** (1995): Three-dimensional vortex flow field around a circular cylinder in a quasi-equilibrium scour hole. *Sadhana, Academy Proceedings in Engineering Sciences*, Indian Academy of Sciences, 20(December), 871–885
221. **Dey S** and Kar SK (1995): Bed shear in evolving scour at a circular cylinder: a theoretical approach. *International Journal of Sediment Research*, Elsevier, 10(1), 13–31
222. **Dey S** (1994): No-choke flow in trapezoidal channels. *Journal of Engineering Mechanics*, American Society of Civil Engineers (ASCE), 120(10), 2224–2231
223. **Dey S** and Bose SK (1994): Bed shear in equilibrium scour around a circular cylinder embedded in a loose bed. *Applied Mathematical Modelling*, Elsevier, 18(5), 265–273
224. **Dey S** (1988): Flood discharge of Torsa river in North Bengal. *Indian Journal of Earth Sciences*, 15(4), 314–324

Conference Paper (Total Number 34)

1. **Dey S** and Ali SZ (2022): Hydrodynamics of sediment suspension. *Proceedings of Thirty-Nineth International Association for Hydraulic Research World Congress*, Granada, Spain, 313–319
2. Ali SZ and **Dey S** (2022): Instability of weakly-curved meandering channels. *Proceedings of Thirty-Nineth International Association for Hydraulic Research World Congress*, Granada, Spain, 302–312
3. Rathore V, Penna N, **Dey S** and Gaudio R (2019): Computation of bed shear stress from velocity measurements in a gradually varying roughness bed. *Proceedings of Thirty-Eighth International Association for Hydraulic Research World Congress*, Panama City, Panama, 5886–5893
4. **Dey S** and Ali SZ (2018): Phenomenological description of scaling laws of sediment transport. *Proceedings of River Flow 2018*, Lyon, France, 40, 04001
5. Ali SZ and **Dey S** (2018): Phenomenology of meandering of a straight river. *Proceedings of River Flow 2018*, Lyon, France, 40, 05004
6. Padhi E, Penna N, Gaudio R, Desai VR and **Dey S** (2018): Flow over a water-worked bed. *Proceedings of River Flow 2018*, Lyon, France, 40, 05006
7. Ali SZ and **Dey S** (2017): Turbulent shear flow over a sinusoidal bed. *Proceedings of Thirty-Seventh International Association for Hydraulic Research World Congress*, Kuala

Lumpur, Malaysia, 362–371
8. **Dey S** and Ali SZ (2017): Sediment inception by stream flow: a novel mathematical model. *Proceedings of Thirty-Seventh International Association for Hydraulic Research World Congress*, Kuala Lumpur, Malaysia, 372–381
9. Penna N, Padhi E, **Dey S** and Gaudio R (2017): Flow over a water-worked bed. *Proceedings of Thirty-Seventh International Association for Hydraulic Research World Congress*, Kuala Lumpur, Malaysia, 623–632
10. **Dey S** and Ali SZ (2016): Hydrodynamics of sediment transport: Grain scale to continuum scale. *Proceedings of Eighth International Conference on Scour and Erosion (ICSE-2016)*, Oxford, UK, CD-ROM
11. **Dey S**, Sarkar S, Bose SK, Tait S and Castro-Orgaz O (2013): Wall-wake flows downstream of a spherical particle placed on a gravel bed. *Proceedings of Thirty-Fifth International Association for Hydraulic Research World Congress*, Chengdu, China, A11043, CD-ROM
12. **Dey S**, Das R, Gaudio R and Bose SK (2011): Response of bed-load to turbulence in mobile-bed streams. *Proceedings of Symposium on River, Coastal and Estuarine Morphdynamics (RCEM 2011)*, Beijing, China, 925–948, CD-ROM
13. Langhi M, Hosoda T and **Dey S** (2011): One dimensional depth-averaged velocity deformation model for unsteady open channel flows. *Proceedings of 13th International Summer Symposium*, *JSCE*, 83–86
14. **Dey S** and Bose SK (2008): A Reynolds averaged theory of turbulent shear flow over stable sinusoidal beds and formation of sand waves. *Proceedings of Advances in Hydro-Science and Engineering*, *Eighth International Conference on Hydro-Science and Engineering*, Nagoya, Japan, CD-ROM
15. **Dey S**, Sumer BM and Fredsoe J (2006): Control of scour around circular piles under waves and current. *Proceedings of Third International Conference on Scour and Erosion*, Amsterdam, The Netherlands, 169–173
16. **Dey S** and Sarkar A (2006): Turbulent flow in submerged jumps on rough beds. *Second International Conference on Application of Fluid Mechanics in Industry and Environment*, ISI, Kolkata, 166–172
17. **Dey S** and Raikar RV (2006): Flow characteristics over gravel-beds at near-threshold. *Proceedings of Second International Conference on Application of Fluid Mechanics in Industry and Environment*, ISI, Kolkata, 158–165
18. Ho CT, Lin C and **Dey S** (2005): Characteristics of horseshoe vortex system near the junction of rectangular cylinder and base plate. *Proceedings of Twenty-Seventh Ocean Engineering Conference*, National Chung Hsing University, 195–202
19. Raikar RV and **Dey S** (2005): Scour at bridge piers in fine and medium gravel beds. *Proceedings of National Conference on Advances in Water Engineering for Sustainable Development*, IIT, Chennai, 43–51
20. Sarkar A and **Dey S** (2005): Scour hole characteristics downstream of an apron due to submerged horizontal jets. *Proceedings of National Conference on Advances in Water Engineering for Sustainable Development*, IIT, Chennai, 33–41
21. Raikar RV and **Dey S** (2004): Scour at the channel contractions in the gavel-beds. *Proceedings of Second International Conference on Scour and Erosion*, Singapore, 229–236
22. **Dey S** and Sarkar A (2004): Local scour downstream of an apron caused by submerged horizontal jet. *Proceedings of Second International Conference on Scour and Erosion*, Singapore, 293–300
23. **Dey S** and Barbhiuya AK (2003): Design scour depth at abutments in thin-armor layers. *Proceedings of International Conference on Construction Management and Materials*, IIT, Kharagpur, India, 295–304
24. Raikar RV and **Dey S** (2002): Movement of gravels in rivers: a review. *Proceedings of Conference on Hydraulics, Water Resources and Ocean Engineering*, IIT, Bombay, India, 38–44

25. **Dey S** and Westrich B (2002): Local scour of cohesive bed downstream of an apron due to submerged jet. *Proceedings of International Conference on Advances in Civil Engineering*, IIT Kharagpur, India, Vol. 1, 363–371
26. **Dey S** and Debnath K (2002): An overview on sediment threshold. *Proceedings of International Conference on Advances in Civil Engineering*, IIT Kharagpur, India, 437–445
27. **Dey S** (2001): Incipient motion of bivalve shells on sand beds under currents. *Proceedings of Fourteenth Australasian Fluid Mechanics Conference*, The University of Adelaide, Adelaide, Australia, 889–892
28. **Dey S** (2000): Open channel flow metering by end depth method. *Proceedings of Global Conference on Flow Metering and Control for New Millennium*, Palghat, Kerala, India, 409–422
29. **Dey S**, Dey Sarker HK and Debnath K (1999): Sediment threshold on stream-wise bed slopes. *Proceedings of Twenty-Sixth National Conference on Fluid Mechanics and Fluid Power*, Indian Institute of Technology Kharagpur, India, 255–262
30. **Dey S** (1999): Secondary motion of fluid in curved pipes: turbulent case. *Proceedings of Twenty-Sixth National Conference on Fluid Mechanics and Fluid Power*, Indian Institute of Technology Kharagpur, India, 155–163
31. **Dey S** (1994): Bed shear in equilibrium scour around a circular pier. *Proceedings of National Symposium on Recent Trends in Design of Hydraulic Structures*, University of Roorkee, Roorkee, India, 293–300
32. **Dey S** (1994): Bed shear in evolving scour at a circular pier. *Proceedings of Ninth Congress of Asia and Pacific Division of International Association for Hydraulic Research*, Singapore, Vol. 2, 360–367
33. **Dey S**, Bose SK and Sastry GLN (1992): Clear water scour at circular piers, part I: flow model. *Proceedings of Eighth Congress of Asia and Pacific Division of International Association for Hydraulic Research*, Pune, Vol. 3, 69–80
34. **Dey S**, Bose SK and Sastry GLN (1992): Clear water scour at circular piers, part II: design formula. *Proceedings of Eighth Congress of Asia and Pacific Division of International Association for Hydraulic Research*, Pune, Vol. 3, 81–92

PhD Theses Guided

PhD Thesis (Completed 21)

1. Gravel bed hydrodynamics: Malothu Aishwarya (ongoing)
2. Streambed instabilities in turbulent flows: Rajesh K Mahato (2023)
3. Hydrodynamics of two-dimensional rigid subaqueous dunes: Prianka Paul (2022)
4. Effects of change in bed roughness on flow characteristics: Vijit Rathore (2022)
5. Precipitation, channel dynamics, land use change and hydrology studies for the data-scarce Teesta River basin of the Indian Himalayas: Akram Ahmed (2020)
6. Turbulence characteristics in water-worked and screeded gravel-bed streams: Ellora Padhi (2020)
7. New look on hydrodynamics of sediment motion and fluvial instabilities: Sk Zeeshan Ali (2019)
8. Moraine dammed glacial lakes monitoring in the Himalayas and analysis of their outburst mechanism: Sazeda Begam (2019)
9. Flow modelling of straight and meandering compound channels: Saine Sikta Dash (2018)
10. Effects of an upstream bridge pier on scour at downstream bridge piers and scour countermeasure: Shivakumar Khaple (2017)
11. Turbulent wall-wake flow downstream of a wall-mounted vertical circular cylinder: Debshri Swargiary (2017)
12. Wall-wake flows downstream of wall-mounted and near-wall horizontal

cylinders: Rajashree Lodh (2017)

13. Hydrodynamics of submerged turbulent plane offset jets: Galla Ravi Kishore (2017)
14. Hydrodynamics of mobile sand-bed and immobile gravel-bed: Ratul Das (2011)
15. Turbulence in loose boundary streams: Sankar Sarkar (2010)
16. Effect of exceptional flow characteristics on river diversion barrages and performance improvement using depressed secondary aprons: Kapileswar Mishra (2009)
17. Turbulence in submerged wall-jets and open-channel flows subjected to injection and suction from wall: Tushar Kumar Nath (2009)
18. Local scour at submerged pipelines and their supports: Navneet Pratap Singh (2008)
19. Characteristics of flow over gravel-beds and scour within contractions and at piers: Rajkumar Raikar (2006)
20. Scour downstream of an apron and characteristics of submerged horizontal jet over rough and sudden changes from smooth to rough beds: Arindam Sarkar (2005)
21. Clear water scour at bridge abutments: Abdul Karim Barbhuiya (2003)
22. Sediment threshold and pick-up on streamwise sloping beds: Koustuv Debnath (2002)

Reviewer of Journals

Proceedings A of the Royal Society of London: Mathematical, Physical and Engineering Sciences, The Royal Society of London
Journal of Fluid Mechanics, Cambridge University Press, UK
Physics of Fluids, American Institute of Physics (AIP), USA
Journal of Hydraulic Engineering, American Society of Civil Engineers (ASCE), USA
Journal of Engineering Mechanics, American Society of Civil Engineers (ASCE), USA
Journal of Irrigation and Drainage Engineering, American Society of Civil Engineers (ASCE), USA
Journal of Waterway, Port, Coastal and Ocean Engineering, American Society of Civil Engineers (ASCE), USA
Journal of Hydrologic Engineering, American Society of Civil Engineers (ASCE), USA
Journal of Geophysical Research, Earth Surface, American Geophysical Research, USA
Water Resources Research, American Geophysical Research, USA
Journal of Hydraulic Research, International Association for Hydraulic Research, Spain
European Journal of Mechanics / B Fluids, Elsevier Publishers
Water Management Journal, Institution of Civil Engineers (London), UK
Canadian Journal of Civil Engineering, National Research Council, Canada
Journal of Turbulence, Taylor and Francis
Sedimentology, Blackwell Publishing
Acta Geophysica, Polish Academy of Sciences, Springer
Experiments in Fluids, Springer
Irrigation Science, Springer
Environmental Fluid Mechanics, Springer
Central European Journal of Physics, Springer
KSCE Journal of Civil Engineering, Springer
Fluid Dynamics Research, Elsevier Publishers
Applied Mathematical Modelling, Elsevier Publishers
Advances in Water Resources, Elsevier Publishers
Flow Measurement and Instrumentation, Elsevier Publishers
Journal of Hydro-Environment Research, Elsevier Publishers

Engineering Structures, Elsevier Publishers
International Journal of Sediment Research, Elsevier Publishers
Computers and Fluids, Elsevier Publishers
Computers and Geosciences, Elsevier Publishers
Journal of Ocean Engineering and Science, Elsevier Publishers
Ocean Engineering, Elsevier Publishers
Coastal Engineering, Elsevier Publishers
Computers and Fluids, Elsevier Publishers
Hydrological Processes, Wiley, UK
Earth Surface Processes and Landforms, Wiley, UK
Hydrology Research, IWA Publishing, UK
International Journal of River Basin Management, UK
Australian Journal of Water Resources, Engineers Australia, Australia
Engineering Applications of Computational Fluid Mechanics, Hong Kong
International Journal of Applied Mathematics and Mechanics, Hong Kong
Water Science and Engineering, China
Asian Journal of Science and Technology for Development, Thailand
Sadhana, Academy Proceedings in Engineering Sciences, Indian Academy of Sciences, India
Indian Journal of Engineering and Material Sciences, Council of Scientific and Industrial Research, India
Journal of Institution of Engineers, Institution of Engineers, India

Reviewer of Projects

National Science Center, Poland
Fondazione Cariparo (*Cariparo foundation*), Italy
Research Grant Council, Hong Kong
Department of Science and Technology, Government of India
Indo-US Science and Technology Forum, New Delhi, India
Israel Science Foundation, Israel
Mid-America Transportation Center (MATC) research program, USA

Short-Term Course Offered

In Abroad
2013 (One-day): *Turbulent flow, sediment transport and scour*, 35th IAHR World Congress, Chengdu, China
2012 (two-day): *Turbulent flow, sediment transport and scour*, Department of Soil and Water Conservation, National Chung Hsing University, Taiwan
2009 (one-day): *Turbulent flow, sediment transport and scour*, Department of Civil Engineering and Architecture, Instituto Superior Tecnico, Lisbon, Portugal
2009 (two-day): *Turbulent flow, sediment transport and scour*, Dipartimento di Ingegneria Civile, Università della Calabria, Italy
2008 (two-day): *Turbulent flow, sediment transport and scour*, Dipartimento di Ingegneria Civile, Università della Calabria, Italy
2008 (two-day): *Sediment transport and scour*, Department of Civil and Environmental Engineerring, University of Florence, Italy
2008 (two-day): *Sediment transport and scour*, Department of Process and Environmental Engineerring, University of Oulu, Finland
2007 (two-day): *Turbulent flow, sediment transport and scour*, Dipartimento di Ingegneria Civile, Università della Calabria, Italy
2007 (one-day): *Sediment transport and scour*, Dipartimento IIAR, Politecnico di Milano, Milan, Italy

2006 (three-day): *Sediment transport and scour*, Dipartimento di Ingegneria Civile, Università della Calabria, Italy
2006 (two-day): *Sediment transport and scour*, Dipartimento di Ingegneria Civile, Università di Pisa, Italy
2006 (two-day): *Sediment transport and scour*, Department of Civil Engineering, The University of Hong Kong, Hong Kong

In India
2016 (two-week, GIAN): *Advances in hydraulic modelling*, Department of Civil Engineering, Indian Institute of Technology Kharagpur
2015 (two-week, GIAN): *Hydrodynamics of riverbed erosion and scour at structures*, Department of Civil Engineering, Indian Institute of Technology Kharagpur
2014 (two-week, ISWT): *Modelling in fluvial processes*, Department of Civil Engineering, Indian Institute of Technology Kharagpur
2005 (one-week, CEP): *Erosion and sedimentation of riverbeds*, Department of Civil Engineering, Indian Institute of Technology Kharagpur

Award

Hans Albert Einstein Award, American Society of Civil Engineers (ASCE), 2022
JC Bose Fellow, 2018
Fellow of Indian National Science Academy (FNA), 2018
Fellow of Indian Academy of Sciences (FASc), 2012
Fellow of the National Academy of Sciences India (FNASc), 2012
Fellow of Indian National Academy of Engineering (FNAE) 2008
Fellow of West Bengal Academy of Science & Technology (FWAScT), 2021
Brahmaputra Chair Professor for Water Resources, 2009–14
International Talent Exchange Program "Fluvial Eco-Hydraulic" 111 Plan, Tsinghua University, China, 2018–22
Distinguished Visiting Professor of Tsinghua University, Tsinghua University, China, 2016–18
Foreign Expert in China, Tsinghua University, China, 2016–18
Adjunct Professor, Physics & Applied Mathematics Unit, Indian Statistical Institute Kolkata, 2014–19
The Royal Society of London Fellowship for Incoming Short Visit, University of Bradford, UK, 2007
Obermann Interdisciplinary Research Grant, The University of Iowa, USA, 2006
Indian National Science Academy – Chinese Academy of Sciences Exchange Programme Grant, 2006
Deutscher Akademischer Austauschdients (DAAD) Fellowship, Germany, 2003
Deutscher Akademischer Austauschdients (DAAD) Fellowship, Germany, 2000

Recognition

Vice President

World Association for Sedimentation and Erosion Research, Beijing (2019–22)

Council Member

International Association for Hydro-Environment Engineering and Research (IAHR) (2015–19)
World Association for Sedimentation and Erosion Research, Beijing (2010–13)

Member

IAHR Fluvial Hydraulics Committee (2014–)

Research Experience

Technical University of Denmark, Denmark (2009): Worked on sediment transport in Coastal and River Engineering Section, Department of Mechanical Engineering, Technical University of Denmark, Denmark

University of Bradford, UK (2007): Worked on sediment transport in the School of Engineering, Design and Technology, University of Bradford, UK

University of Iowa, USA (2006): Worked on bank stability in Obermann Center and Iowa Institute of Hydraulic Research, The University of Iowa, USA

National Chung Hsing University, Taiwan (2005): Worked on horseshoe vortex in Department of Civil Engineering, National Chung Hsing University, Taiwan

Technical University of Denmark, Denmark (2004): Worked on sediment transport in Coastal and River Engineering Section, Department of Mechanical Engineering, Technical University of Denmark, Denmark

Technische Universität Darmstadt, Germany (2003): Worked on sediment threshold under upward seepage in Institut für Wasserbau und Wasserwirtschaft, Technische Universität Darmstadt, Germany

The University of Adelaide, Australia (2001): Worked on Reynolds stress and bed shear in nonuniform-unsteady open channel flow in Department of Civil and Environmental Engineering, The University of Adelaide, Australia

Universität Stuttgart, Germany (2000): Worked on scour downstream of an apron in Institut für Wasserbau, Universität Stuttgart, Germany

Indian Institute of Technology Kharagpur (1998–): As a faculty in the Department of Civil Engineering, working on pier scour, abutment scour, scour downstream apron, scour below pipeline, sediment transport and open channel hydraulics

National Institute of Technology Durgapur (1984–89 and 1991–98): As a faculty in the Department of Applied Mechanics, worked on the various field of hydraulics

Indian Institute of Technology Kharagpur (1989–91): Worked as a Doctoral Research Scholar in the Department of Civil Engineering, Indian Institute of Technology Kharagpur

Indian Institute of Technology Kharagpur (1983–84): Worked as a Post-graduate Scholar in the Department of Civil Engineering, Indian Institute of Technology Kharagpur

Overseas Activity

Visiting Professor, School of Environment, Southern University of Science and Technology, Shenzhen, China (June 2023)

Visiting Professor, Department of Hydraulic Engineering, Tsinghua University, Beijing, China (May 2023)

Deligate of Government of India, The Hague, The Netherlans (February 2023)

Paper presentation, 39th IAHR World Congress, Granada, Spain (June 2022)

Visiting Professor, Dipartimento di Ingegneria Civile, Università della Calabria, Italy (June 2022)

Distinguished Visiting Professor, Department of Hydraulic Engineering, Tsinghua University, Beijing, China (December 2019)

Distinguished Visiting Professor, Department of Hydraulic Engineering, Tsinghua University, Beijing, China (June–July 2019)

Visiting Professor, Department of Soil and Water Conservation, National Chung Hsing University, Taiwan (2019)

Invited Lecture, Thirty-eight International School of Hydraulics, Poland (2019)

Distinguished Visiting Professor, Department of Hydraulic Engineering, Tsinghua University, Beijing, China (December 2018)

Chairman of Opening Ceremony, River Flow 2018, Lyon, France (2018)
Distinguished Visiting Professor, Department of Hydraulic Engineering, Tsinghua University, Beijing, China (June–July 2018)
Meeting of Editorial Board of International Journal of Sediment Research, Beijing, China (2017)
Chair of Kynotes, 37th IAHR World Congress, Kuala Lumpur, Malaysia (2017)
Distinguished Visiting Professor, Department of Hydraulic Engineering, Tsinghua University, Beijing, China (2017)
Keynote Speaker, *Eighth International Conference on Scour and Erosion (ICSE-2016)*, Oxford, UK (2016)
Distinguished Visiting Professor, Department of Hydraulic Engineering, Tsinghua University, Beijing, China (2016)
Visiting Professor, Hydrotech Research Institute, National Taiwan University, Taiwan (2015)
Visiting Professor (funded by the National Research Science Council, Taiwan), Department of Soil and Water Conservation, National Chung Hsing University, Taiwan (2015)
Chair of a Session, 35th IAHR World Congress, Chingdu, China (2013)
Visiting Professor, Dipartimento di Ingegneria Civile, Università della Calabria, Italy (2013)
Visiting Professor, Department of Hydraulic Engineering, Tsinghua University, Beijing, China (2013)
Lecture Delivered and Field Visit to South Island, The University of Auckland, New Zealand (2012)
Visiting Professor, Hydrotech Research Institute, National Taiwan University, Taiwan (2012)
Visiting Professor (funded by the National Research Science Council, Taiwan), Department of Soil and Water Conservation, National Chung Hsing University, Taiwan (2012)
Invited Lecture, Thirty-first International School of Hydraulics, Poland (2012)
Invited Lecture in RCEM2011, Tsinghua University, Beijing, China (2011)
Visiting Professor, DHI-NTU Centre, Nanyang Technological University, Singapore (2011)
Visiting Professor, Dipartimento di Difesa del Suolo "V. Marone", Università della Calabria, Italy (2011)
Keynote Speaker, Thirtieth International School of Hydraulics, Poland (2010)
Visiting Scientist, Laboratoire Central des Ponts et Chaussées, IFSTTAR - Centre de Nantes, France (2010)
Visiting Professor, Hydrotech Research Institute, National Taiwan University, Taiwan (2010)
Visiting Professor, Department of Civil Engineering, National Chung Hsing University, Taiwan (2010)
Visiting Professor, Department of Civil Engineering and Architecture, Instituto Superior Tecnico, Lisbon, Portugal (2009)
Visiting Professor, Dipartimento di Difesa del Suolo "V. Marone", Università della Calabria, Italy (2009)
Visiting Professor, Coastal and River Engineering Section, Department of Mechanical Engineering, Technical University of Denmark, Denmark (2009)
Visiting Professor, Dipartimento di Difesa del Suolo "V. Marone", Università della Calabria, Italy (2008)
ICHE2008 paper presentation, Department of Civil Engineerring, Nagoya University, Japan (2008)
Visiting Professor, Department of Civil and Environmental Engineerring, University of Florence, Italy (2008)
Visiting Professor, Department of Process and Environmental Engineerring, University of Oulu, Finland (2008)
Visiting Professor, Dipartimento di Difesa del Suolo "V. Marone", Università della

Calabria, Italy (2007)
Visiting Professor, Dipartimento IIAR, Politecnico di Milano, Milan, Italy (2007)
Visiting Professor, School of Engineering, Design and Technology, University of Bradford, UK (2007)
Lecture Delivered, Department of Civil Engineering, University of Glasgow, UK (2007)
Visiting Professor, Department of Geography, University of Hull, UK (2007)
IIT Nominated Professor for India-Australia Workshop on Water Resources Engineering, Department of Civil and Environmental Engineering, The University of Adelaide, Australia (2007)
Visiting Professor, Dipartimento di Difesa del Suolo "V. Marone", Università della Calabria, Italy (2006)
Visiting Professor, Dipartimento di Ingegneria Civile, Università di Pisa, Italy (2006)
Visiting Scholar, Iowa Institute of Hydraulic Research, The University of Iowa, USA (2006)
Visiting Professor, Institute of Mechanics, Chinese Academy of Science, Beijing, China (2006)
Lecture Delivered, Department of Hydropower and Hydraulic Engineering, China Institute of Water Resources and Hydropower Research, Beijing, China (2006)
Lecture Delivered, Department of Hydropower and Hydraulic Engineering, Tsinghua University, Beijing, China (2006)
Visiting Professor, Department of Civil Engineering, The University of Hong Kong, Hong Kong (2006)
Visiting Professor, Department of Hydraulic and Ocean Engineering, National Cheng Kung University, Taiwan (2005)
Visiting Professor, Department of Civil Engineering, National Chung Hsing University, Taiwan (2005)
Chair of a Session, Second International Conference on Scour and Erosion (ICSE-2), Singapore (2004)
Visiting Professor, Coastal and River Engineering Section, Department of Mechanical Engineering, Technical University of Denmark, Denmark (2004)
Visiting Professor, Institut für Wasserbau und Wasserwirtschaft, Technische Universität Darmstadt, Germany (2003)
Visiting Professor, Department of Civil and Environmental Engineering, The University of Adelaide, Australia (2001)
Lecture Delivered, Institut für Hydromechanik, Universität Karlsruhe, Germany (2000)
Visiting Professor, Institut für Wasserbau, Universität Stuttgart, Germany (2000)

International Collaborative Research Program

Professor Roberto Gaudio, Dipartimento di Ingegneria Civile, Università della Calabria, Italy (2006–). Topic: Sediment Transport
Professor Oscar Castro-Orgaz, Instituto de Agricultura Sostenible, Consejo Superior de Investigaciones Cientificas, Spain (2007–). Topic: Hydraulics
Professor Hongwei Fang, Department of Hydraulic Engineering, Tsinghua University, Beijing, China (2011–). Topic: Turbulence and Sediment Transport
Professor Su-Chin Chen, Department of Soil and Water Conservation, National Chung Hsing University, Taiwan (2012–). Topic: Hydraulics
Prof. Dr.-Ing. Oscar Link, Departamento de Ingeniería Civil, Universidad de Concepción, Chile (2011–15). Topic: Turbulence and Sediment Transport
Professor Thanos Papanicolaou, Iowa Institute of Hydraulic Research, The University of Iowa, USA (2006–). Topic: Sediment Transport
Professor Chang Lin, Department of Civil Engineering, National Chung Hsing University, Taichung, Taiwan (2005–10). Topic: Hydrodynamics
Professor Martin F. Lambert, Department of Civil and Environmental Engineering, The

University of Adelaide, Australia (2001–10). Topic: Open channel hydraulics

Professor Luca Solari, Department of Civil and Environmental Engineering, University of Florence, Italy (2008–18). Topic: Sediment Transport

Professor Simon Tait, School of Engineering, Design and Technology, University of Bradford, UK (2007–12). Topic: Sediment Transport

Professor Francesco Ballio, Dipartimento IIAR, Politecnico di Milano, Milan, Italy (2007–11). Topic: Scour

Professor Björn Klöve, Department of Process and Environmental Engineerring, University of Oulu, Finland (2008). Topic: Environmental Hydraulics

Professor Hossein Afzalimehr, Department of Water Engineering, Isfahan University of Technology, Iran (2005–15). Topic: Fluvial hydraulics

Professor Jorgen Fredsoe and Professor B Mutlu Sumer, Coastal and River Engineering Section, Department of Mechanical Engineering, Technical University of Denmark, Denmark (2004–13). Topics: Coastal and fluvial hydraulics

Professor Nian-Sheng Cheng, School of Civil and Environmental Engineering, Nanyang Technological University, Nanyang Avenue, Singapore (2003–06). Topic: Open channel hydraulics

Professor Ulrich C E Zanke, Institut für Wasserbau und Wasserwirtschaft, Technische Universität Darmstadt, Germany (2003–05). Topics: Fluvial hydraulics

Professor Takashi Hosoda, Department of Civil Engineering, Kyoto University, Japan (2002–18). Topics: Fluvial hydraulics, Open channel hydraulics

Professor Bernhard Westrich, Institut für Wasserbau, Universität Stuttgart, Germany (2000). Topics: Fluvial hydraulics

Projects

Stability of Rajghat high embankment and Keleghai bridge foundation design measures (sponsored by South Eastern Railway, Kharagpur) (2020–21, duration 12 months)

Scour potential of soils and gneissic bedrock at Sambalpur Rourkela 4-laning bridge sites (sponsored by Larsen and Toubro Limited) (2015–16, duration 12 months)

Scour at bridge pier: An experimental observation (sponsored by Kolkata Port Trust, Kolkata; Code SBEO) (2015–16, duration 2 months)

India-European Union (EU) Research Project "Energy-efficient, community-based water- and wastewater-treatment systems for deployment in India" (Eco-India) (sponsored by DST, New Delhi) (2013–16, duration 49 months)

Bridge scour estimation, measurement and protection and use of various time systems like TDR, TTS and SA (sponsored by Ministry of Indian Railways, New Delhi) (2006–16, duration 78 months)

To investigate the cause of difficulties towards running CW pump system at Farakka STPP Stage-III (sponsored by WPIL Limited, Kolkata; Code DWPP) (2012, duration 2 months)

Source sustainability study of water (Subarnarekha river) at intake point for APNRL 4×270 MW TPP (sponsored by Adhunik Power & Natural Resources Ltd, Kandra, Jharkhand) (2011, duration 3 months)

Sump model study for Vallur CW pumps (sponsored by WPIL Limited, Kolkata) (2011, duration 6 months)

CW systems equipment package for (i) Barh STPP Stage-II (2×600MW) and (ii) Vallur Thermal Power Project (3×500MW) (sponsored by WPIL Limited, Kolkata; Code VTPP) (2011, duration 6 months)

Hazen-Williams C values for ductile iron pipes (sponsored by Tata Metaliks Kubota Pipes Limited, Kharagpur) (2009, duration 2 months)

Physical sump model study for CW system of Dadri-II, Simhadri-II and Farakka-III STPP of NTPC (sponsored by WPIL Limited, Kolkata) (2009, duration 6 months) (total funding: Rs. 27,00,000) PI

Sump model study for CW System PKG-NTPC (sponsored by Kirloskar Brothers Limited, Pune; Code SMSC) (2008, duration 3 months)

Proof checking report on feasibility study for desilting and renovation of lake system in the Indian Botanic Garden, BSI at Howrah (sponsored by Ministry of Environment and Forests, New Delhi, Code FSDR) (2007, duration 2 months)

Hydraulic model study for make-up water system package for Kahalgaon STPP Stage-II (sponsored by M/s BSBK Private Limited, Bhilai) (2004–05, duration 3 months)

Design of stilling basin and flexible aprons for barrages under variable hydraulic conditions (sponsored by Ministry of Water Resources, New Delhi) (2003–07, duration 42 months)

Determination of scour depth (general bed, channel contraction and bridge piers) in boulder-beds under high stream velocities (sponsored by Ministry of Road Transport and Highways, New Delhi) (2002–05, duration 36 months)

Model study on effective closure of head regulator gate of Nagarjuna Sagar dam under a high head (sponsored by Jessop, Calcutta) (2001, duration 2 months)

Fellowship / Membership of Scientific / Engineering Bodies

Fellow, Indian National Science Academy (FNA)
Fellow, Indian Academy of Sciences (FASc)
Fellow, The National Academy of Sciences India (FNASc)
Fellow, Indian National Academy of Engineering (FNAE)
Fellow, West Bengal Academy of Science & Technology (FWAScT)
Fellow, International Association for Hydro-Environment Engineering and Research (MIAHR)
Fellow, Indian Society for Hydraulics (FISH)
Fellow, Institution of Engineers (India) (FIE)
Member, American Society of Civil Engineers (MASCE)
Member, World Association for Sedimentation and Erosion Research (MWASER)
Life Member, Indian Association for Computational Mechanics

Attachment to Professional Bodies / Universities

Member, Programme Advisory Committee on Civil, Infrastructure & Transportation Engineering, Science and Engineering Research Board (SERB) (2020–22)
Co-opted Member, Programme Advisory Committee on Civil and Mechanical Engineering, Science and Engineering Research Board (SERB) (2018–20)
Expert, Board of the Doctoral Course in Civil and Industrial Engineering, Università della Calabria, Italy
Member, Indian National Committee on Surface Water, Ministry of Water Resources, India
Member, Technical Committee of Indian Road Congress on Foundation, Sub-Structure Protective Works and Masonry Structures, India
Member, Technical Advisory Committee, Kolkata Port Trust, India
Member, Technical Advisory Committee, Indian Statistical Institute, Kolkata, India (2010–12)

Personal

Home Town: Jalpaiguri Town, West Bengal, India
Spouse: Swastika (*Alias*: Mona) (married on 4 February 1987)
Son: Sibasish (*Alias*: Subhro) (born on 2 July 1988)
Daughter: Sagarika (*Alias*: Sreeja) (born on 24 April 1995)