UNIVERSITY OF CALCUTTA
DEPARTMENT OF APPLIED MATHEMATICS

1. Full name of the faculty member: SUMA DEBSARMA

2. Designation: Professor

3. Specialisation : Nonlinear water waves

4. Photograph

5. Contact information :

Residential address :
SF-2, Gopal Kunjo(1), A-35 School Road, P.O. – Sodepur, Dist. – North 24 Parganas, Kolkata – 700110, West Bengal

Office address :
Department of Applied Mathematics , University of Calcutta, 92 A. P. C. Road, Kolkata - 700 009, West Bengal

E-mail :
1) sdappmath@caluniv.ac.in
2) suma_debsarma@rediffmail.com

6. Academic qualifications :

Board/College/University	Abbreviation of the degree	Year of passing	Percentage of marks
W.B.B.S.E.	Madhyamik Pariksha	1988	81.22
W.B.C.H.S.E.	Higher Secondary	1990	79.6
Presidency College, Calcutta University	B.Sc.	1993	80.25
Calcutta University	M.Sc.	1995	81.5
Calcutta University	Ph.D.	2007	

7. Position held/ holding: Professor

8. Research interests: Nonlinear water waves

9. Research guidance:
Number of researchers:
Degree awarded : Two
Registered student : Four
Enrolled student : Two

10. Projects :
Completed projects :

Title	Funding Agency	Period
‘Nonlinear Water Wave Problems Related to Nonlinear Evolution Equations’	UGC Major Research Project	2003 - 2006
'Electro - Physiological and Neuro-imaging studies including mathematical modelling'	UGC - CPEPA	2011 - 2016

11. Selected list of publications:

a) Journals:

1. ‘Fourth Order Nonlinear Evolution Equations for Gravity-capillary Waves in the Presence of a Thin Thermocline in Deep Water’, S Debsarma and K P Das, ANZIAM J.,2002, vol. 43, 513-524.

2. ‘Fourth Order Nonlinear Evolution Equations for Counter-propagating Capillary-gravity Wave Packets on the Surface of Water of Infinite Depth’, S. Debsarma and K P Das, Physics of Fluids, June 2002,vol. 14,no.6,1-10.

3. ‘Fourth Order Nonlinear Evolution Equation for Capillary-gravity Waves in Deep water in the Presence of a Thin Thermocline Including the Effect of Wind ’, S Debsarma and K P Das, Int. J. Appl. Mech. & Engg.,2003,vol. 8, no.2,177-193.

4. ‘A Higher Order Nonlinear Evolution Equation for Broader Bandwidth Gravity waves in Deep Water’, S Debsarma and K P Das, Physics of Fluids, 2005, vol. 17,104101.

5. ‘A Higher Order Nonlinear Evolution Equation for Much Broader Bandwidth Gavity Waves in Deep Water’ ,S Debsarma and K P Das, Int. J. Appl. Mech. & Engg., 2007, vol.12, no. 2, 557- 563.

6. ‘Fourth-order Nonlinear Evolution Equations for a Capillary-gravity Wave Packet in the Presence of Another Wave Packet in Deep Water’, S Debsarma and K P Das, Physics of Fluids, 2007, vol. 19, 097101

7. ‘On Resonant Interaction of Capillary - Gravity Wave and Internal Wave in the Presence of a Thin Thermocline’ S Debsarma and K P Das, Int. J. Appl. Mech. & Engg., 2008, vol.13, no.3, 653-668..

8. ‘Fully Nonlinear Higher Order Model Equations for Long Internal Waves in a Two Fluid System’, Suma Debsarma, K P Das and James T Kirby, J. Fluid Mech. 654, 281-303, 2010

9. ‘Fourth Order Evolution Equations for a Surface Gravity Wave Packet in a Two Layer Fluid’, S Senapati, S Debsarma and K P Das, IJAME, 15(4), 2010

10. ‘Evolution of a Random Field of Surface gravity waves in a Two Fluid Domain, S. Senapati’, S Debsarma and K P Das, IJAME, 17(2),481-493, 2012

11. An Algorithm for Removing Stoichiometric Discrepancies in Biochemical Reaction Databases, R. Shaw, S. Debsarma and S. Kundu, Current Science, vol.103, no. 11, 10 December 2012.

12. Modulational instability in crossing sea states over finite depth water, S. Kundu, S Debsarma, K P Das, Physics of Fluids 25,0 66605(1-13), 2013

13. Nonlinear evolution equations for broader bandwidth wave packets in crossing sea states, S Debsarma, S Senapati, K. P Das, International Journal of Oceanography,2014

14. Wind-forced modulations in crossing sea states over infinite depth water, S. Debsarma, S. Senapati, K.P. Das, Physics of Fluids, 26, 096606(1-7) (2014).

15. Formation of dwarf ellipticals and dwarf irregular galaxies by interaction of giant galaxies under environmental influence, Tanuka Chattopadhyay, Suma Debsarma, Pradip Karmakar, Emmanuel Davoust, New Astronomy 34 (2015), 151-158

16. Modulational instability of two crossing waves in presence of wind flow, S. Debsarma, S. Kundu, K P Das, Ocean Modelling, 2015, vol.94,27-32.

17. A Model of Infectious Disease with Latent, Acute and Chronic Phases, S. Debsarma, IARJSET, vol 2, issue 11, Nov 2015, 85-88.

18. Episodic Model For Star Formation History and chemical abundances in dwarf an giant galaxies, S. Debsarma, T. Chattopadhyay, S. Das, Daniel Pfenniger, Monthly Notices of the Royal Astronomical Society, 462, 3739–3750 (2016)

19. Nonlinear evolution equations in crossing seas in the presence of uniform wind flow, Sudipta Senapati, Sumana Kundu, S. Debsarma and K. P. Das, European Journal of Mechanics B(Fluids), vol.60, 110-118, (2016).

20. Current-modified evolution equation for a broader bandwidth capillary-gravity wave packet, S.Debsarma and K.P. Das, ANZIAM Journal, vol. 58,143-161(2016)

21. Fifth order evolution equation of gravity-capillary waves, Dipankar Chowdhury, Suma Debsarma, ANZIAM Journal, vol.59, 103-114 (2017)

22. Effect of uniform wind flow on modulational instability of two crossing waves over finite depth water, Sumana Kundu, Suma Debsarma, K.P. Das,

ANZIAM Journal(2018).

23. A Numerical Approach for Solution of Aseismic Ground Deformation Problems, Subhash Chandra Mandal, Sanjay Sen, Suma Debsarma, Journal of Geosciences and Geomatics., 6(1), 27-34 (2018)

24. Modulational instability of two obliquely interacting waves in two-layer fluid domain, Anushri Purkait and and Suma Debsarma, Ocean Dynamics, 69, 21-27 (2018).

25.A mathematical model to study the stress distribution due to a strike slip fault creeping with a reducing velocity, Subhash Chandra Mondal, Sanjay Sen and Suma Debsarma, Bull. Cal. Math. Soc., 110, (4) 265–280 (2018).

26. A numerical approach to determine the ground deformation due to creeping movement across a long dip slip fault , Subhash Chandra Mondal, Suma Debsarma and Sanjay Sen, Bull. Cal. Math. Soc., **110,** (6) 541–564 (2018).

27. Wind effect on the evolution of two obliquely interacting random wave trains in deep water , Sumana Kundu, Suma Debsarma, K.P. Das, Wave Motion 89, 14–27(2019).

28. Evolution of a pair of random inhomogeneous wave systems over infinite depth water, S. Debsarma and D. Chowdhury, ANZIAM Journal, vol. 61, 233–247 (2019)

29. Nonlinear Evolution Equations of Co-propagating Waves over Finite Depth Fluid, Dipankar Chowdhury and S. Debsarma, Water Waves, vol. 1, issue 2, 259-273, November 2019.

30. A mathematical model for analyzing the ground deformation due to a creeping movement across a strike slip fault, Subhash Chandra Mondal, Suma Debsarma and Sanjay Sen, GEM - International Journal on Geomathematics 10(1) December 2019.

31. Modulational instability of two obliquely interacting waves in presence of a thin pycnocline, Anushri Purkait and Suma Debsarma, European Journal of Mechanics B/Fluids, 2020.

b) Book/ Book chapters :

‘Computer Programming in C’ – S. Debsarma and S.Sen, Published by Netaji Subhas Open University, 2009

12. Membership of Learned Societies:
Member of (a) Calcutta Mathematical Society, (b) Indian Statistical Institute, (c) Institute of Theoretical Physics.