

Dr KALYAN DAS



Associate Professor
Department of Basic and Applied Sciences
National Institute of Food Technology
Entrepreneurship & Management
(Under MoFPI, Govt. of India, De-novo Category)
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Research Interests

Mathematical Modelling in Biology, Ecology and Epidemiology

PhD (Mathematical Biology), Jadavpur University, Kolkata, India
M. Sc. (Applied Mathematics) Jadavpur University, Kolkata, India
B. Sc. (Hons. in Mathematics) Calcutta University, Kolkata, India

Academic Experience in Teaching & Research

More than 18 years

Publication Details:

Sr. No.	Publication Details	Numbers
1	International Journals	40
2	International Seminar Publications	5
3	National Seminar Publications	10

Other Accomplishments

1. **Received Best Research Award 2011-2012** : Received Best Research Award for 2011-2012 by VIT University, Vellore, Tamil Nadu, India.
2. Worked as a **Head Examiner at West Bengal University of Technology (WBUT)** from 2006 – 2010.
3. Worked as a **Head of the Department at BPPIMT, Kolkata, from 2007 – 2010.**

Selected Publications

- D.Konar, Kalyan Das,A.K.Sarkar,1997, Global Stability and Existence of a Three Species Donor-Controlled Model with Extensive Omnivory, Bulletin of Hong-Kong Mathematical Society,Vol.2,pp.261-269,Periodicals Service Company & Schmidt Periodicals GmbH.
- Kalyan Das,A.K.Sarkar,1998,Effect of Time Delay in an Autotroph-Herbivore System with Nutrient Cycling, Korean Journal of Computational and Applied Mathematics,vol.5, No.3,pp.507-516, Korea.
- Kalyan Das,A.K.Sarkar,1998,Stability and Oscillation of an Autotroph- Herbivore Model with Time Delay, International Journal of System Science,Vol.32 No.5, pp.585-590, Taylor & Francis.
- Kalyan Das, A.K.Sarkar, 2001, Stability and Bifurcation of Two Interacting Species with Time Delay, Non-Linear Phenomena in Complex System,Vol.4 No.4, pp. 406-411,"Education and Upbringing" Publishing Company, Minsk, Republic of Belarus.
- Kalyan Das,A.K.Sarkar,2002,Qualitative Analysis of a Resource-Baerd- Autotroph-Herbivore Model with Delayed Nutrient Cycling, Non-Linear Phenomena in Complex System, Vol.5 No.1, pp.33-38,"Education and Upbringing" Publishing Company, Minsk, Republic of Belarus.
- Kalyan Das, A.K.Sarkar, 2007,Algal-Blooms due to Trophic Interaction: Study of Time Delay Model, Dynamics of Continuous, Discrete and Impulsive Systems, Series: ,Vol.14 No.4, pp.517-524, Watam Press Inc., Canada.
- Kalyan Das,A.K.Sarkar,2007,Algal-Blooms due to Trophic Interaction: A Qualitative Study, Dynamics of Continuous, Discrete and Impulsive Systems, Series:A, Vol. 14,No.3, pp. 401-414, Watam Press Inc., Canada .
- Bidisha Bag,Kalyan Das, Santanu Roy,2006, Endemic Fluorosis Through Drinking Water and Its Remedial Measure By Bacterial Population : A Mathematical Approach, Journal of Biological System,Vol.14,No.1,pp.1-11, World Scientific.
- Samrat Chatterjee,Kalyan Das,J.Chattopadhyay,2007,Time-delay factor can be used as a key factor for preventing the outbreak of a disease-results drawn from a mathematical study of a one season eco-epidemiological model,Non- linear Analysis: Real World Publication, Vol.8, pp. 1472-1493, Elsevier.
- Kalyan Das, D.Mukherjee, 2009, Persistence Aspect of an Epidemic Model of Chagas Disease, Tamsui Oxford Journal of Mathematical Sciences, 25(3), pp. 301 – 311, Aletheia University, Republic of China ,Taiwan.
- Kalyan Das, 2010, Successful Biocontrol with Stability and Rhythms of Plankton Dynamics in Biogeophysical Ecology, International Journal of Non- linear Studies, Vol.17,No.3, pp. 279-290, I & S Publisher, Florida, USA.

- Kalyan Das, Santanu Roy, 2010, Delay in the decomposition of dead algae and its impact on benthic food chain of reclaimed mangrove ecosystem International journal of Non-linear Studies, Vol.17, No.4, pp. 387-398, I & S Publisher, Florida, USA.
- Kalyan Das, Santanu Roy, 2008, Effect of delay on nutrient cycling in phytoplankton-zooplankton interactions in estuarine system, Journal of Ecological Modelling, Vol.215, pp. 69-76, Elsevier.
- Nurul Huda Gazi, Kalyan Das, 2007, Oscillatory phenomena of nutrient-plant- herbivore system with time lag: a mathematical approach, International Journal of Non-linear Studies Vol.15(2), pp.163-177, I & S Publisher, Florida, USA .
- Kalyan Das, Nurul Huda Gazi, 2010, Structural Stability Analysis of an Algal Bloom Mathematical Model in Trophic Interaction, International Journal of Non-linear Analysis : Real World Applications, Vol 11, pp. 2191-2206, Elsevier.
- Nurul Huda Gazi, Kalyan Das, 2010, Control of parameters of an delayed- diffusive autotroph-herbivore system, International Journal of Biological System, Vol. 18(2), pp. 509-529, World Scientific.
- Z.Mukandavire, P.Das, C.Chiyaka, N.H.Gazi, K.Das, 2011, HIV/AIDS Model with Delay and the Effects of Stochasticity, "International journal of Mathematical Modelling and Algorithmn" Vol 10, pp.181-191, Springer.
- Nurul Huda Gazi, Prasenjit Das, Kalyan Das, Zindoga Mukandavire, Christinah Chiyaka, 2010 , A Study of Cholera Model With Environmental Fluctuations, "International Journal of Mathematical Models and Methods in Applied Sciences", Vol.4(3), pp. 150-155, North Atlantic University Union, Oregon, USA .
- Kalyan Das, Nurul Huda Gazi 2011, Random Excitations in Modelling of Algal Blooms in Estuarine Systems, International Journal of Ecological Modelling, Vol.222, pp.2495-2501, Elsevier.
- Kalyan Das, Nurul Huda Gazi, 2011, Functional Effects on Phytoplankton-Zooplankton Model in Marine Aquatics Services, International Journal of BioSystem, Elsevier (in Press).
- Prasenjit Das, Kalyan Das, Nurul Huda Gazi, A.Sabarmathi, 2012, "Delayed Stochastic Disease Model, "International Journal of Advanced Research in Dynamical and Control Systems", Vol.4(4), pp. 28-42, i-asr, Irvine, CA, USA.
- Nurul Huda Gazi, Kalyan Das, 2010, Stability of detritus-based complex real ecosystem, "Non-linear Phenomena in Complex System", Vol.13, No.3, pp. 230-248, "Education and Upbringing" Publishing Company, Minsk, Republic of Belarus.
- Prasenjit Das, Debasis Mukherjee, Kalyan Das, A.Sabarmathi, 2012, Fluctuating Role of Parameters in the Analysis of the Continuous and Discrete Version of a Susceptible-Incubated-Infected Model, International Journal of Modern Nonlinear Theory and Application, Vol. 1, pp. 47-50, Scientific Research, USA.

- M.N.Srinivas, M.A.S.Srinivas, Kalyan Das, Nurul Huda Gazi, 2011, Prey-Pradator Fishery Model with stage Structure in Two Patchy Marine Aquatic Environment, International Journal of Applied Mathematics, Vol.2, pp.1405-1416, Scientific Research, USA.
- Kalyan Das, M.N.Srinivas, M.A.S. Srinivas, N.H.Gazi, 2012, Chaotic dynamics of a three species Prey Predator Competition Model with Bionomic Harvesting due to delayed environmental noise as external driving force,"International Journal of C.R. Biologies", Vol.335(8), pp.503-513, Elsevier.
- Kalyan Das, Nurul Huda Gazi 2014, Role of Beneficial Bacteria on Contaminated Fluoride Drinking Water, International Journal of Non-Linear Phenomena in Complex System, "Education and Upbringing" Publishing Company, Minsk, Republic of Belarus, (In Press).
- Kalyan Das, K. Shiva Reddy, M. N. Srinivas, N.H.Gazi, 2014, Chaotic dynamics of a three species prey-predator competition model with noise in ecology, International Journal of Applied Mathematics and Computations, Vol. 231, pp. 117-133, Elsevier.
- Prasenjit Das, Debasis Mukherjee, Kalyan Das, 2013, Chaos in a Prey-Predator model with Infection in Predator - A Parameter Domain Analysis, International Journal of Computational and Mathematical Biology , Twaiwan , iConcept Press (In Press).
- Kalyan Das, A.Sabarmathi, M.N.Srinivas, Nurul Huza Gazi, B.Rushi Kumar, 2013, Trophic cascades scenario of a detritus-based stage-structured model in marine ecology, International Journal of Non-linear Evolution Equations and Applications (JNEEA), USA, (In Press).
- A.Sabarmathi, Kalyan Das, M.N.Srinivas, Nurul Huza Gazi, B.Rushi Kumar, 2013, Eco-stage-structured model analysis to explore delay and stochastic effects on growth and maturation in plankton ecology, International Journal of Computational and Mathematical Biology , Vol. 3(1), pp. 1-5, Twaiwan , iConcept Press.
- Kalyan Das, M.N.Srinivas, N.H.Gazi, 2013, Dynamical Complexity in a Mathematical Model of Tumor Growth with Stochastic Perturbation in the Cell Plorifiration Leading Chaotic Attractors, International Journal of Nonlinear Science, World Academic Press, UK (In Press).
- Prasenjit Das, Nurul Huda Gazi, Kalyan Das, 2014, Stability Analysis of Swine Flu Transmission-A Mathematical Approach, International Journal of Computational and Mathematical Biology , Vol. 3(1), pp. 1-5, Twaiwan , iConcept Press.
- K. Shiva Reddy, M.N.Srinivas, Kalyan Das, N.H. Gazi, 2014, A study of stochastic effect on an ecological system with predation, commensalism, mutualism and neutralism, International Journal of Advanced Research in Dynamical and Control Systems, , i-asr, Irvine, CA, USA, (In Press).
- K. Shiva Reddy, M.N.Srinivas, Kalyan Das, N.H. Gazi, 2014, Stochastic analysis with harvesting of a prey- predator model in food web dynamics, International Journal of Dynamical System and Differential Equation, Inder Science Publishers, Switzerland, (In Press).

Selected International and National Conferences / Workshops / Symposiums Attended

- Attended and presented a contributed lecture in the National Symposium on "Evolution of Life", Dept. of Biophysics, University of Delhi, April 5-6, 1996.
- Attended and presented a contributed lecture in the National Seminar "Recent Trends in Applicable Mathematics" under UGC-DSA programme (Phase-II), Department of Mathematics, Jadavpur University, September 27-29, 1996.
- Attended and presented a contributed lecture in the Conference "Current Trends in Differential Equations and Dynamical Systems" sponsored by AICTE, NBHM, CSIR and INSA held at Indian Institute of Technology, Kanpur, December 15-17, 2001.
- Attended the National Symposium on "Recent Development on Mathematics and Applications", March 27-28, 2001.
- Attended and presented a contributed lecture in the Conference "Conference on Current Trends in Mathematics" Department of Mathematics, University of Allahabad, Allahabad-211002, November 9-10, 2002.
- Attended the workshop on Qualitative Theory of Ordinary Differential Equation, in the Department of Mathematics, University of Pune, Pune, from 23-27 Nov., 2004.
- Attended the Summer School on Mathematical Modelling & its Engineering Applications from 27th April to 9th May, 2007, organized by West Bengal State Council of Science & Technology and Department of Science & Technology, Government of West Bengal in association with B.P. Poddar Institute of Management & Technology, Kolkata and PDSIT, Bengal Engineering & Science University, Shibpur, Howrah.
- Attended and presented a contributed lecture in the International Conference on Applied mathematics and Mathematical Physics, January 6-9, 2003, Deptt. Of mathematics, Shahjalal University of Science and Technology, Sylhet 3114, Bangladesh.
- Attended and presented a contributed lecture in the International Conference on Applied mathematics and Mathematical Physics, January 4-7, 2005, Deptt. of mathematics, Shahjalal University of Science and Technology, Sylhet 3114, Bangladesh.
- Attended and presented a contributed lecture in the The "6th European Conference on Ecological Modelling", Trieste (Italy), 27-30 November 2007".
- Attended the Winter School "Hands-on Research on Complex Systems" conducted by ICTP, Italy, at Institute of Plasma Research, Gandhinagar, 6-18, January, 2008, India.
- Attended and presented a contributed lecture in the "7th World Congress in Probability and Statistics" at National University of Singapore, Singapore from 14th July to 19th July, 2008.

- Attended the “International Congress of Mathematicians (ICM-2010)”, Hyderabad, India, 19-27 August, 2010.
- Participated one day work shop on “Overview of Mathematica for Education and Research” on 8th October 2010, School of Advanced Sciences, Department of Mathematics, VIT University, India.
- Attended and presented a contributed lecture in the Conference at “National Seminar on Current Research and Developments in Mathematics and Computing (CRDMC-2012)” at Aliah University, Kolkata, India, October, 03 – 04, 2012”

Selected Membership Learned Society

- Member of Indian Statistical Institute, Calcutta.
- Member of Indian Society of Industrial and Applied Mathematics.
- Member of Indian Science Congress Association.
- Member of Pashimbangha Bignan Mancha.
- Member of Indian Society of Nonlinear Analysis, S.N. Bose National Centre for Basic Sciences, J.D. Block, Sector-III, Salt Lake City Kolkata:700 098.
- Member of the International Association of Engineers.
- Reviewer of Zentralblat MATH, Berlin, Germany of European Mathematical Society.
- Member of International Statistical Institute, Netherland.

Selected Reviewer to Some International Journals of High Repute

- Applied Mathematical Modelling
- International Journal of Biological System
- Korean Journal of Computational and Applied Mathematics
- International Journal of Non-linear Studies
- International Journal of Mathematical Methods and Applications
- Journal of Non-linear Analysis : Modelling and Control (LANA)
- Tamsui Oxford Journal of Mathematical Sciences
- International Journal of Qualitative Analysis of Differential Equation
- Journal of Non-linear Phenomena in Complex System
- International Journal of Non-linear Dynamics