Teacher's Profile

General Information

Name: Dr Sharmistha Dutta Dhatt

Designation: Guest Teacher or Equivalent

Department: Chemistry Department

Contact Information: 9163402267

Email: pcsdhatt@gmail.com

Specialization: Physical Chemistry

Academic Qualification

PhD (2013) -----------------------------------University of Calcutta

Thesis Title: PERTURBATIVE AND RELATED METHODS IN CHEMICAL THEORIES

Additional Information:

CSIR-UGC-NET   (L.S)   Qualified

CSIR-NET-JRF   Qualified

Research Interest

Perturbation Theory, Divergent Series, Fractional Calculus Quantum Mechanics, Enzyme Kinetics, Mathematical modeling, Stochasticity in chemical and biochemical reactions

Professional Information

Joined Sarsuna College: 01/02/2014

Research Publications:

(xvii) Entner-Doudoroff glycolysis pathway as quadratic-cubic mixed autocatalytic network: Akinetic assay

S. Dhatt, S. Sen, P. Chowdhury Chem. Phys 2019.

(xvi) Efficacy of quasi-steady-state approximation in Michaelis-Menten kinetics: a stochastic signature

S.Dhatt, K.Banerjee, J.Math.Chem, 57, 2019.

(xv) Exploring the antivenom kinetics and dosage: A mechanistic Investigation

S, Dhatt *J. Chem Sci & Engg* 2018.

(xiv) How can we distinguish positive cooperativity from auto-catalysisin enzyme kinetics?

S, Dhatt, K.Banerjee, K.Bhattacharyya *J. Indian Chem.Soc* 2018

(xiii) Enzyme kinetics: A note on negative reaction constants in Lineweaver Burk Plot

S.Dhatt, K.Bhattacharyya J.Indian. Chem. Soc

(xii) The Michaelis-Menten kinetics and errors in estimated reaction constants: A reappraisal

S, Dhatt, K.Banerjee, K.Bhattacharyya J. Indian Chem.Soc 2017

(xi) Sucide substrate kinetics revisited

S.Dhatt J. Chem Sci 2017.

(x) Immune activation and immunodeficiency: a model reduction strategy

S.Dhatt PNAS, India 2017.

(ix) Enzyme Kinetics: A critique of the Quasi-Steady State-Approximations.

K. Bhattacharyya and S. Dhatt, MATCH Commun. Math. Comput. Chem. **70** (2013) 759-784

(viii) Accurate estimates of asymptotic indices via fractional calculus

S. Dhatt and K. Bhattacharyya, J. Math. Chem. DOI 10.1007/s10910-013-0258-0

(vii) Single-substrate Enzyme Kinetics: The Quasi-steady-state Approximation and beyond.

S. Dhatt and K. Bhattacharyya, J. Math. Chem. 51 (2013) 1467.

(vi) Asymptotic response of observables from divergent weak-coupling expansions: A fractional- calculus-assisted Padé technique.

S. Dhatt and K. Bhattacharyya, Physical Review E 86 (2012) 026711.

(v) Embedding Scaling Relations in Pade Approximants: Detours to Tame Divergent

Perturbation Series.

S. Dhatt and K. Bhattacharyya, Int. J. Quantum. Chem 113 (2013) 916.

(iv) Infinite square well with a sinusoidal bottom: a candidate for the Klauder phenomenon?

S. Dhatt and K. Bhattacharyya, J. Math. Chem. 50 (2012) 9.

(iii) Surprises in nonlinear perturbations: Case of a multiple well potential problem.

S. Dhatt and K. Bhattacharyya, Int. J. Quantum. Chem. 112 (2012) 171.

(ii) Concurrent multiple-state analytic perturbation theory via supersymmetry.

S. Dhatt and K. Bhattacharyya, J. Math. Phys. 52 (2011) 042101.

(i) A perturbation theory without energy corrections.

S. Dhatt and K. Bhattacharyya, Int. J. Quantum .Chem. 111 (2011) 1950

Seminar/Workshop/others attended

Symposia / Conferences attended

1. Constructive Learning Environment in Science (2007) – I. E. W. (Kolkata)

2. International Symposium on Frontiers of Functional Material (2009) –
   University of Calcutta (SINP –CU).

3. National Symposium on Recent Developments and Trends in Computational Chemistry (2010). North-Eastern Hill University (Shillong).

4. International Symposium on Faces of Weak Interactions in Chemistry (2011)
   University of Calcutta (SINP –Kolkata).

5. UGC Sponsored Seminar on Emerging Frontiers in Chemistry (2012)
   Behala College (Kolkata)

6. International Symposium on Molecular Organisation and Complexity: A Chemical Perspective   . (2013) – University of Calcutta (SINP –Kolkata).

7. International Symposium on Recent Advances in Chemistry and Material Sciences (2019): Department of Chemistry, – University of Calcutta: