

Aniruddha Mitra

Assistant Professor

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Education:

Indian Institute of Science	Ecological Sciences	2011	PhD
Banaras Hindu University	Zoology	2004	MSc
Presidency College, Kolkata	Zoology	2002	BSc

Experience:

I am working as an Assistant Professor in the Department of Zoology, Sarojini Naidu College for Women since December 2019. Prior to this I worked as an Assistant Professor in the School of Biological and Environmental Sciences, Shoolini University of Biotechnology and Management Sciences, Solan (Himachal Pradesh) from 2016-2019. Before that I have worked from 2011 to 2016 as a post-doctoral researcher at Washington University (St Louis, USA), CNRS (Gif sur Yvette, France – as a Marie Curie International Incoming Fellow), and the Wissenschaftskolleg (Berlin, Germany).

My PhD was from the Centre for Ecological Sciences, Indian Institute of Science (Bangalore), supported by CSIR SRF and CSIR NET JRF fellowships – 2004 to 2010, and I was awarded the INSA Young Scientist Medal in 2013 for my PhD work. My MSc was from the Department of Zoology, Banaras Hindu University (2004) and my BSc was from Presidency College, University of Calcutta (2002).

Areas of Experience/Specialization:

Animal Behavior, Ecology, Entomology, Neuroethology, Insect Physiology, Evolutionary Biology.

Teaching Experience:

- ▲ PhD and MSc courses as a guest teacher at the Department of Zoology, West Bengal State University (January 2020 onward).
- ▲ BSc papers in Zoology at Sarojini Naidu College for Women, Kolkata (December 2019 onward).
- ▲ PhD, MSc and BSc courses in Zoology at Shoolini University, Solan (August 2016 to December 2019).
- ▲ Mentored students for masters and bachelors degree dissertations at IISc (Bangalore), resulting in 2 publications in international peer-reviewed Scopus indexed journals (Anim. Behav. & Insect. Soc.).

Research Guidance Provided:

Dissertations Completed: PhD – 1, MPhil – 2, MSc – 28, BSc – 8

Mentored Summer Research Fellows – 3

Currently guiding: Summer Research Fellow – 1

Research Grants:

- “Establishment of Butterfly Conservation Area at Sarojini Naidu College for Women, Kolkata”. West Bengal Biodiversity Board, Dept. of Environment, Govt. of West Bengal, 2022–2023 (INR 1,20,000/-)
- “Understanding the evolution of bitter taste”. DST-SERB, Teachers Associateship for Research Excellence, 2018-2022 (INR 18,00,000/-).
- Returning *Taxus* to the Forests and the People: a study in Shimla and Kullu Districts of the Indian Himalayan Region”. National Mission on Himalayan Studies, 2019-2021 (INR 47,00,000/-).

List of Publications:

a) Research papers:

- 1.) **Mitra A** (2022) *Hemidactylus flaviviridis* (Indian House Gecko). Cannibalism. *Herpetological Review* 53(3): 496-497
- 2.) Chakraborty R, Thakur TS, Chauhan R, Manzar Z, Das G, **Mitra A** (2021) Exploring the neural mechanisms of aversion to bitter gourd phytochemicals in insects using *Drosophila*. *Journal of Asia-Pacific Entomology* 24: 749-758.
- 3.) Manzar Z, Dutta T, Koner AL, **Mitra A** (2021) Cucurbit[7]uril nanoencapsulation reduces the unpalatability of bitter phytochemicals. *ACS Agricultural Science and Technology* 1: 117-123.
- 4.) Yanagawa A, Couto A, Sandoz J-C, Hata T, **Mitra A**, Ali Agha M, Marion-Poll F (2019) LPS perception through taste-induced reflex in *Drosophila melanogaster*. *Journal of Insect Physiology* 112: 39-47.
- 5.) Saha P, Nandi AK, Unnikrishnan S, Shilpa MC, Shukla SP, Mandal S, **Mitra A**, Gadagkar R (2018) A route to direct fitness: natural and experimentally induced queen succession in the tropical primitively eusocial wasp *Ropalidia marginata*. *Journal of Insect Behavior* 31: 54-65.
- 6.) Couto A, **Mitra A**, Thierry D, Marion-Poll F, Sandoz J-C (2017) Hornets have it: a conserved olfactory subsystem for social recognition in Hymenoptera? *Frontiers in Neuroanatomy* 11:48.
- 7.) **Mitra A**, Palavalli Nettimi R, Ramachandran A, Saha P, Gadagkar R (2015) Males and females of the social wasp *Ropalidia marginata* do not differ in their cuticular hydrocarbon profiles and do not seem to use any long distance volatile mate attraction cues. *Insectes Sociaux* 62: 281-289.
- 8.) French AS, Sellier M-J, Ali Agha M, Guigue A, Chabaud M-A, Reeb PD, **Mitra A**, Grau Y, Soustelle L, Marion-Poll F (2015) Dual mechanism for bitter avoidance in *Drosophila*. *The Journal of Neuroscience* 35: 3990-4004.
- 9.) **Mitra A**, Ramachandran A, Gadagkar R (2014) Nestmate discrimination in the social wasp *Ropalidia marginata*: chemical cues and chemosensory mechanism. *Animal Behaviour* 88: 113-124.
- 10.) **Mitra A**, Gadagkar R (2014) Dufour's gland and cuticle in the social wasp *Ropalidia marginata* contain the same hydrocarbons in similar proportions. *Journal of Insect Science* 14: 9.
- 11.) **Mitra A**, Gadagkar R (2012) Road to royalty – transition of potential queen to queen in the primitively eusocial wasp *Ropalidia marginata*. *Ethology* 118: 694-702.
- 12.) **Mitra A**, Gadagkar R (2012) Queen signal should be honest to be involved in maintenance of eusociality: chemical correlates of fertility in *Ropalidia marginata*. *Insectes Sociaux* 59: 251-255.
- 13.) **Mitra A**, Gadagkar R (2012) Queens and workers of the primitively eusocial wasp *Ropalidia marginata* do not differ in their Dufour's gland morphology. *Sociobiology* 59: 875-884.
- 14.) **Mitra A**, Saha P, Chaoulideer ME, Bhadra A, Gadagkar R (2011) Chemical communication in *Ropalidia marginata*: Dufour's gland contains queen signal that is perceived across colonies and does not contain colony signal. *Journal of Insect Physiology* 57: 280-284.
- 15.) **Mitra A**, Gadagkar R (2011) Can Dufour's gland compounds honestly signal fertility in the primitively eusocial wasp *Ropalidia marginata*? *Naturwissenschaften* 98: 157-161.
- 16.) Bhadra A, **Mitra A**, Deshpande SA, Chandrasekhar K, Naik DG, Hefetz A, Gadagkar R (2010) Regulation of reproduction in the primitively eusocial wasp *Ropalidia marginata*: on the trail of the queen pheromone. *Journal of Chemical Ecology* 36: 424 -431.

b) Review articles:

- 1) French A, Ali Agha M, **Mitra A**, Yanagawa A, Sellier M-J, Marion-Poll F (2015) *Drosophila* bitter taste(s). *Frontiers in Integrative Neuroscience* 9: 58.
- 2) **Mitra A** (2014) Queen pheromone and monopoly of reproduction by the queen in the social wasp *Ropalidia marginata*. *Proceedings of the Indian National Science Academy* 80: 1025-1044.
- 3) **Mitra A** (2013) Function of the Dufour's gland in solitary and social Hymenoptera. *Journal of Hymenoptera Research* 35: 33-58.
- 4) **Mitra A** (2013) Cinderella's new shoes – how and why insects change their bodies between life stages. *Current Science* 104: 1028-1036.

Patents:**a) Granted:**

- 1) **Mitra A** (2022) Device for recording locomotion. Design Application No. 370203-001, Patent Office, Govt. of India.

b) Under review:

- 1) **Mitra A.** Device for recording locomotion. Design Application No. 370202-001 (of 2022), Patent Office, Kolkata.
- 2) Sharma K, **Mitra A.** A process for production of biofuel from larvae of rice moth *Corcyra cephalonica* and biofuel thereof. Patent Application No. 201911037067 (of 2019), Patent Office, New Delhi.
- 3) Chaudhary Verma N, **Mitra A.** A process for production of biofuel from the cockroach *Periplaneta americana* and biofuel thereof. Patent Application No. 201911407886 (of 2019), Patent Office, New Delhi.

Reviewed papers for:

• PNAS • Plos One • Journal of Chemical Ecology • Insectes Sociaux • Frontiers in Zoology • Ecological Entomology • European Journal of Entomology • Sociobiology • Biodiversity Data Journal • Journal of Threatened Taxa • Current Science • Ecology and Evolutionary Biology • Resonance • Agricultural Science Research Journal

Membership of Professional Societies:

• International Society for Behavioral Ecology	2020 onward
• Indian Society of Evolutionary Biologists	2018 to 2022
• The Science Advisory Board	2016 onward
• International Society for Neuroethology	2012 to 2013
• Genetics Society of America	2011 to 2013
• International Union for the Study of Social Insects	2010 to 2011

Honors, Awards and Fellowships:

• Best oral presentation - 1 st National Conference on Biotechnology & Agriculture Based Technological Interventions Towards Sustainable Rural Development (Brainware University)	2020
• Best oral presentation – International Conference on Science: Emerging Scenario and Future Challenges (Him Science Congress Association)	2018
• Fellowship, College for Life Sciences, Wissenschaftskolleg, Berlin	2015
• INSA Medal for Young Scientists (Indian National Science Academy, New Delhi)	2013
• Marie Curie International Incoming Fellowship (REA, EC, European Union)	2012
• Fyssen Fellowship for postdoctoral research (Fondation Fyssen, Paris)	2011 and 2012
• Best poster presentation – 79 th Annual Conference of the Society of Biological Chemists (India)	2010
• CSIR Senior Research Fellowship	2006
• Graduate Aptitude Test in Engineering (Life Sciences) (95.56 percentile, all India rank 207 out of 4,888 candidates)	2004
• CSIR Junior Research Fellowship – National Eligibility Test (Life Sciences) (rank among top 20% out of 2,711 candidates awarded CSIR JRF in 2003)	2003

Invited Talks:

- 30th April, 2025 – Division of Zoology, Career Point University, Hamirpur, Himachal Pradesh.
- 2nd August, 2024 – International Colloquium on Integrative Biology, Dept. of Zoology, Lalit Marayan Mithila University, Darbhanga, Bihar.
- 20th December, 2022 – India Neurobehavior Conference, Manipal Academy of Higher Education, Manipal, Karnataka.

- 15th December, 2021 – International Webinar on Neurobiology of Behavior: the Challenge and the Promise for Translational Research, Dr Harisingh Gour Vishwavidyalaya, Sagar, Madhya Pradesh.
- 23rd March, 2018 – Capacity Building Workshop on Long Term Monitoring of Himalayan Biodiversity, ZSI, Solan, Himachal Pradesh.
- 13th March, 2018 – Division of Biological Sciences, IISER Mohali.
- 30th April, 2013 – Department of Zoology, BHU, Varanasi.

Conference Presentations:

International Conferences: Oral presentations – 3, Poster presentations – 5

National Conferences: Oral presentations – 12, Poster presentations – 5