Curriculum Vitae

NAME: **Dr. GOURANGA NANDI**

Designation Assistant Professor

Mailing Address Department of Pharmaceutical Technology, University of North Bengal, P.O.- NBU, Dist- Darjeeling, West Bengal, Pin -734013, India.

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E-Mail ID gouranganandi@nbu.ac.in; nandi_gouranga@yahoo.co.in

Subject Specialization: Pharmaceutics

Academic qualification:

2002: B.Pharm, Jadavpur University, India
2003: GATE Qualified **(Score: 96.15 percentile)**
2005: M.Pharm, Jadavpur University, India
2010: Ph.D in Pharmacy, Jadavpur University, India

Professional experiences:

Teaching Experience: 17 years

August 14, 2006 to October 10, 2018	: BCDA College of Pharmacy & Technology, Hridaypur, Kolkata-700127 **[As Lecturer: 3 yrs; Assistant prof.: 4 yrs; Associate Prof.: 5 yrs]**
October 11, 2018 to till date	Assistant Professor, Department of Pharmaceutical Technology, University of North Bengal, Darjeeling, W.B., India

Areas of Research Interest: Polysaccharide based drug delivery, fabrication of chemically modified polysaccharide in drug delivery, novel sustained release drug delivery

No. of Ph.D. students: **(a) Supervised (awarded):** 04 **(b) Submitted:** 01 **(b) Ongoing:** 04
No. of M.Pharm. students: **(a) Awarded:** 10 **(b) Ongoing:** 03

No. of Publications: **(a) Journal(s): 40 (b) Book(s): 02 (c) Book chapter(s): 09**

Patent: **01 (published)**

List of Publications in journals:

40. *Cordyceps sinensis* (yarsagumba): pharmacological properties of a mushroom, Sanjukta Sen, Dipanjan Karati, Rosy Priyadarshini, Tarun Kumar Dua, Paramita Paul, Ranabir Sahu**, Gouranga Nandi***. Pharmacological Research - Modern Chinese Medicine, 8 (2023) 100294. [ISSN: 2667-1425 (online)] (https://doi.org/10.1016/j.prmcm.2023.100294).

39. Impact of ultrasound-assisted extraction of polyphenols and caffeine from green tea leaves using high-performance thin-layer chromatography, Gouhar Jahan Ashraf, Priya Das, Ranabir Sahu, **Gouranga Nandi**, Paramita Paul, Tarun Kumar Dua. Biomedical Chromatography 2023 Jul 4;e5698. **(Impact factor: 1.8)** (ISSN: 1099-0801). (https://doi.org/10.1002/bmc.5698).

38. Recent update on alginate based promising transdermal drug delivery systems, Sreejan Manna, Prajna Gupta, **Gouranga Nandi**, Sougata Jana. Journal of Biomaterials Science, Polymer Edition, 2023 Jul 13;1-28. **(Impact factor: 3.6)** [ISSN: 0920-5063 (Print); 1568-5624 (Online)] (https://doi.org/10.1080/09205063.2023.2230847).

37. Fabrication and evaluation of aceclofenac-loaded sustained-release mucoadhesive tablet composed of *Cassia fistula* Seed gum-grafted-poly (sodium acrylate), Abhijit Changder, Riyasree Paul, Ananya Ghosh, Arup Manna, **Gouranga Nandi***, Lakshmi Kanta Ghosh. *International Journal of Pharmaceutical Sciences and Nanotechnology*, 16(2) 2023 6407-6420. (ISSN No.: 0974-3278). (https://doi.org/10.37285/ijpsn.2023.16.2.3).

36. Recent advances in alginate based gastroretentive technologies for drug delivery applications, Olivia Sen, Sreejan Manna, **Gouranga Nandi**, Subrata Jana, Sougata Jana. 18 (2023) 100236. *Medicine in Novel Technology and Devices*, 18 (2023) 100236. (ISSN: 2590-0935). https://doi.org/10.1016/j.medntd.2023.100236.

35. Chitosan Derivatives as Carriers for Drug Delivery and Biomedical Applications. Sreejan Manna, Arnab Seth, Prajna Gupta, **Gouranga Nandi**, Ria Dutta, Subrata Jana, and Sougata Jana. ACS Biomaterials Science & Engineering, 2023. **(Impact factor: 5.395)** (ISSN: 2373-9878) (https://doi.org/10.1021/acsbiomaterials.2c01297).

34. The protective role of probiotics in the mitigation of carbon tetrachloride (CCl_4) induced hepatotoxicity. Tarun Kumar Dua, Gouhar Jahan Ashraf, Sangita Palai, Tania Baishya, **Gouranga Nandi**, Ranabir Sahu, Paramita Paul. Food Chemistry Advances, 2(2023) 100205. [ISSN: 2772-753X] (https://doi.org/10.1016/j.focha.2023.100205).

33. Green synthesis of silver nanoparticles using *Eupatorium adenophorum* leaf extract: characterizations, antioxidant, antibacterial and photocatalytic activities. Tarun Kumar Dua, Simran Giri, **Gouranga Nandi**, Ranabir Sahu, Tapan Kumar Shaw, Paramita Paul. *Chemical Papers*, 2023. (Impact factor: **2.146**) [ISSN: 0366-6352 (Print) 2585-7290 (Online)] (https://doi.org/10.1007/s11696-023-02676-9).

32. Grafting of Poly (Acrylic Acid) onto *Cassia fistula* Seed Gum: Synthesis, Optimization, and Characterization. Abhijit Changder, Riyasree Paul, Ananya Ghosh, Saurav Sarkar, **Gouranga**

Nandi*, Lakshmi Kanta Ghosh. International Journal of Pharmaceutical Sciences and Nanotechnology 2023, 16(1):6294-6308 (Scopus) (ISSN: 0974-3278) (https://doi.org/10.37285/ijpsn.2023.16.1.4).

31. Development of Liposomal Formulation for Controlled Delivery of Valacyclovir: an In Vitro Study. Ankita Mallick, Ranabir Sahu, **Gouranga Nandi**, Tarun Kumar Dua, Tapan Kumar Shaw, Ankita Dhar, Aditya Kanu, Paramita Paul. *Journal of Pharmaceutical Innovation* 2023. (Impact factor **2.6) (**ISSN: 1939-8042) (https://doi.org/10.1007/s12247-022-09706-1).

30. Tissue specific changes of phytochemicals, antioxidant, antidiabetic and anti-inflammatory activities of tea [Camellia sinensis (L.)] extracted with different solvents. Tania Baishya, Priya Das, Gouhar Jahan Ashraf, Tarun Kumar Dua, Paramita Paul, **Gouranga Nandi**, Malay Bhattacharya and Ranabir Sahu. *Zeitschrift für Naturforschung C*, 2022. (Impact factor **2.0) (ISSN: 1865-7125) (**https://doi.org/10.1515/znc-2022-0174).

29. High-performance thin-layer chromatography coupled attenuated total reflectance-Fourier-transform infrared and NMR spectroscopy-based identification of α-amylase inhibitor from the aerial part of Asparagus racemosus Willd. Priya Das, Gouhar Jahan Ashraf, Tania Baishya, Tarun Kumar Dua, Paramita Paul, **Gouranga Nandi**, Ranabir Sahu. Phytochemical Analysis, 33(7) (2022) 1018–1027. **(Impact factor: 3.373)** (ISSN:1099-1565) **(https://doi.org/10.1002/pca.3155)**

28. Current challenges in diferent approaches to control COVID-19: a comprehensive review. Simran Giri, Sanjukta Sen, Rohan Singh, Paramita Paul, Ranabir Sahu, **Gouranga Nandi**, Tarun Kumar Dua. Bulletin of the National Research Centre (2022) 46:47. (ISSN 2522-8307) (https://doi.org/10.1186/s42269-022-00730-2).

27. An updated review on Eupatorium adenophorum Spreng. [Ageratina adenophora (Spreng.)]: traditional uses, phytochemistry, pharmacological activities and toxicity. Simran Giri, Ranabir Sahu, Paramita Paul, **Gouranga Nandi**, Tarun Kumar Dua. Pharmacological Research - Modern Chinese Medicine 2 (2022) 100068. (ISSN: 2667-1425) (https://doi.org/10.1016/j.prmcm.2022.100068).

26. Pharmacological studies of rhizomes of extract of *Cyperus tegetum*, emphasized on anticancer, anti-inflammatory and analgesic activity. Atanu Chatterjee, Ritu Khanra, Moitreyee Chattopadhyay, Santanu Ghosh, Ranabir Sahu, **Gouranga Nandi**, Himanshu Sekhar Maji, Pranabesh Chakraborty. Journal of Ethnopharmacology, 289 (2022) 115035. (ISSN: 0378-8741) (**Impact factor: 5.4**) (https://doi.org/10.1016/j.jep.2022.115035).

25. High-performance thin-layer chromatography based approach for bioassay and ATR–FTIR spectroscopy for the evaluation of antioxidant compounds from Asparagus racemosus Willd. aerial parts. Gouhar Jahan Ashraf, Priya Das, Tarun Kumar Dua, Paramita Paul, **Gouranga Nandi**, Ranabir Sahu. Biomedical Chromatography 2021 e5230. (ISSN: 1099-0801) (**Impact factor: 1.911**) (**https://doi.org/10.1002/bmc.5230**).

24. Development of quality control parameters for standardization of a novel mucilage obtained from okra (*abelmoschus esculentus (l.*) Moench) fruit. Soma Das, Ananya Ghosh, Rusham Das, **Gouranga Nandi**, L. K. Ghosh. International Journal of Current Pharmaceutical Research 13(3) (**2021)** 28 – 41. (ISSN: 0975-7066) (DOI: https://dx.doi.org/10.22159/ijcpr.2021v13i3.42091).

23. Synthesis, characterization and fabrication of sodium carboxymethyl-okra-gum-grafted-polymethacrylamide into sustained release tablet matrix. Smita Patra, Nripendra Nath Bala, **Gouranga Nandi***. *International Journal of Biological Macromolecules,* 164 **(2020)** 3885 – 3900. (ISSN: 0141-8130) (**Impact factor 8.2). (https://doi.org/10.1016/j.ijbiomac.2020.09.025).**

22. Quality-by-Design approach for development of sustained-release multiple-unit beads of lamotrigine based on ion-cross-linked composite of pectin and okra mucilage: an in vitro appraisal. Soma Das, Ananya Ghosh, Abhijit Changder, **Gouranga Nandi***, L. K. Ghosh. *International Journal of Biological Macromolecules,* (2020), 163, 842 - 853. (ISSN: 0141-8130) (**Impact factor 8.2). (https://doi.org/10.1016/j.ijbiomac.2020.07.033)**

21. Formulation of extended-release beads of lamotrigine based on alginate and *Cassia fistula* seed gum by QbD approach. Dixita Jain, Akshay Sodani, Swapnanil Ray, Pranab Ghosh, **Gouranga Nandi*. ***Current Drug Delivery*, (2020) 17 (5) 422 – 437. (ISSN: 1875-5704 online) **(Impact factor: 2.4).** DOI: **10.2174/1567201817666200317124022**.

20. Okra and its various applications in drug delivery, food technology, healthcare and pharmacological aspects- a review, Soma Das, **Gouranga Nandi**, L. K. Ghosh, *Journal of Pharmaceutical Sciences and Research* 11 (6) **(2019)** 2139 – 2147 (ISSN: 0975-1459).

19. Poly (methacrylic acid)-grafted-okra gum: synthesis, characterization and evaluation as mucoadhesive, **Gouranga Nandi**, *Int. J. of Pharm.Sc. and Drug. Res.* (2019) 11(5); 250 -254. (ISSN: 0975-248X).

18. Effects of Viscoelastic Properties and Hydration Kinetic on Drug Release from the Tablet of Diclofenac Sodium Based on Poly (Sodium Acrylate)-Grafted-Gellan Matrix, **Nandi Gouranga,** *Journal of Drug Delivery & Therapeutics*, (2019) 9(5), 1 – 8. (ISSN: 2250-1177).

17. Graft-copolymer of Polyacrylamide-tamarind seed gum: Synthesis, characterization and evaluation of flocculating potential in peroral paracetamol suspension, **Gouranga Nandi*,** Abhijit Changder, Lakshmi Kanta Ghosh, *Carbohydrate Polymers,* (2019), 215, 213 – 225. (ISSN: 0144-8617) **(Impact factor 11.2).**

16. Evaluation of stability of Ropinirole hydrochloride and Pramipexole dihydrochloride microspheres at accelerated condition, Koyel Kar, R. N. Pal, N. N. Bala, **Gouranga Nandi,** *International Journal of Applied Pharmaceutics*, (2018) 10 (4), 82 - 86. (ISSN: 0975-7058).

15. Tamarind seed gum-hydrolyzed polymethacrylamide-grafted –gellan beads for extended release of diclofenac sodium using 3^2 full factorial design, **Gouranga Nandi*,** Amit Kumar Nandi, Najim Sarif Khan, Souvik Pal, Sibashish Dey, *International Journal of Biological Macromolecules*, (2018), 114, 214 - 225. (ISSN: 0141-8130) (**Impact factor 8.2).**

14. Sustained release gastroretentive tablet of metformin hydrochloride based on poly (acrylic acid)-grafted-gellan, Debjani Sarkar, **Gouranga Nandi***, Abhijit Changder, Prasenjit Hudati, Sayani Sarkar & L. K. Ghosh, *International Journal of Biological Macromolecules*, (2017), 96, 137-148. (ISSN: 0141-8130) (**Impact factor 8.2).**

13. Viscoelastic, swelling kinetic and drug release characterization of poly(acrylic acid)-grafted-gellan, **Gouranga Nandi***, Subhankar Mukhopadhyay, N. Mondal, Indo American Journal of Pharmaceutical Research 7(01) (2017) 7503 – 7515. (ISSN: 2231-6876).

12. Role of tamarind seed polysaccharide as a carrier in novel drug delivery system. Subhankar Mukhopadhyay, Biplab Mallick, Atanu Debnath, Abhimanyu Thakur, Parikshit Banerjee, Arpan Mahanty, Gouranga Nandi*. *World Research Journal of Pharma Technology*, (2017), 3(1): 1 – 7. (ISSN No.: 2454-5546).

11. Gastroretentive extended release of metformin from methacrylamide-g-gellan and tamarind seed gum composite matrix, Rosy Priyadarshini, **Gouranga Nandi***, Abhijit Changder, Sailee Chowdhury, Sudipta Chakrabarty, L. K. Ghosh, *Carbohydrate Polymers*, (2016), *137*, 100-110**. (**ISSN: 0144-8617) **(Impact factor 11.2).**

10. An overview of natural polysaccharides and their chemical modifications: application in drug delivery; **Gouranga Nandi**, Sailee Chowdhury, Sudipta Chakroborty, *Asio Journal of Drug Delivery* 1(1) (2015) 37 – 43. (ISSN: 2455-2828) (dids Link: http://dids.info/didslink/12.2015-37726478/).

9. Synthesis, characterization and evaluation of methacrylamide grafted gellan as sustained release tablet matrix, **Gouranga Nandi***, Poushali Patra, Rosy Priyadarshini, Santanu Kaity, L. K. Ghosh,

International Journal of Biological Macromolecules, (2015), 72, 965-974. (ISSN: 0141-8130) (**Impact factor 8.2).**

8. Review on Yarsagumba (*Cordyceps sinensis*) - An Exotic Medicinal Mushroom, Sudipta Chakrobarty, Sailee Chowdhury, **Gouranga Nandi**, *International Journal of Pharmacognosy and Phytochemical Research,* 6(2) (2014) 339 – 346. (ISSN: 0975-4873). **(Impact factor 1.334)**.

7. Formulation optimization of a floating once-daily matrix tablet of ofloxacin; N. Mondal, **Gouranga Nandi**, Sudeshna Acharya, B. K. Gupta, American Journal of PharmTech Research 4(2) (**2014**) article no. 70. (ISSN: 2249-3387).

6. Phytosomes- emerging thrust are of drug development technology, Sailee Chowdhury, Sudipta Chakraborty, **Gouranga Nandi**, N. N. Bala, International Journal of Drug Formulation and Research 5(1) (**2014**) 1 – 14. (ISSN: 2229-5054).

5. Stomach specific sustained delivery of metformin hydrochloride from a novel composite matrix, N. Mondal, **Gouranga Nandi**, L. K. Ghosh, B. K. Gupta, International Journal of Drug Formulation and Research 5(2) (**2014**) 140 – 152. (ISSN: 2229-5054).

4. Pharmaceutical Excipients from Natural Sources, S. Chowdhury, S. Chakraborty, **G. Nandi**, S. Pal. NSHM Journal of Pharmacy and Healthcare Management, 2014, 5, 63-75. (ISSN: 2230-7249).

3. Formulation optimization of a floating extended release matrix tablet of metformin hydrochloride, B. K. Gupta, S. S. Sethy, **Gouranga Nandi**, Debjani Sarkar, L. K. Ghosh, American Journal of PharmTech Research 2(4) (**2012)** article 55. (ISSN: 2249-3387).

2. Development and formulation optimization of a low density floating extended release tablet of clarithromycin. **Gouranga Nandi**[*], L. K. Ghosh, B. K. Gupta. International Journal of Drug Formulation and Research, 2(3) (2011) 262 – 279. (ISSN 2229-5054).

1. Formulation and *In Vitro* Evaluation of Sunflower Oil Entrapped Within Buoyant Beads of Furosemide, Rammohan Bera, Bivash Mandal, Manas Bhowmik, Hriday Bera, Sanjoy K. Dey, **Gouranga Nandi**, Lakshmi K. Ghosh, *Scientia Pharmaceutica*, (2009), 77, 669- 678**. (**ISSN: 2218-0532) **(Impact factor 2.5).**

Books:

1. **Fundamentals of Pharmacotherapeutics.** Paramita Paul, Anindita Gantait, Ranabir sahu, **Gouranga Nandi**. Everest publishing House, Pune, India (ISBN for Paperback: 978-81-949281-2-6; eBook: 978-81-949281-3-3).
2. **Fundamentals of Biochemistry and Clinical Pathology.** Paramita Paul, Saikat Diwanjee, **Gouranga Nandi,** Tarun Kumar Dua. Everest publishing House, Pune, India (ISBN No. 978 93 94683 11 2).

Book Chapters*:*

1. *In situ* polymeric gels for topical drug delivery; p83-114 (2020).
DOI: https://doi.org/10.1007/978-3-030-46923-8_4
Advanced Biopolymeric Systems for Drug Delivery (Advances in Material Research and Technology book series). Nayak A., Hasnain M. (eds) Springer, Cham ISBN978-3-030-46922-1 (Print); ISBN:978-3-030-46923-8 (online)

2. Alginate-based systems for protein and peptide delivery; p85 – 106 (2021)
DOI: https://doi.org/10.1016/B978-0-12-821437-4.00011-6 In Tailor-Made and Functionalized Biopolymer Systems. Hriday Bera, Buddhadev Layek, Jagdish Singh (Eds) Elsevier.
ISBN: 978-0-12-821437-4 (print)
ISBN: 978-0-12-821457-2 (online)

3. Biomedical applications of cashew gum-based micro- and nanostructures; chapter11 (page:285-302) (2022) DOI: https://doi.org/10.1016/B978-0-323-90986-0.00001-7 In Micro- and nanoengineered gum-based biomaterials for drug delivery and biomedical applications. Sougata Jana, Subrata Jana (Eds) Elsevier. ISBN: 978-0-323-90986-0.
4. Polysaccharide-based polyelectrolyte complex systems in drug delivery; Chapter 8 (pages 177-210) (2022); https://doi.org/10.1016/B978-0-12-821286-8.00009-4 In Tailor-Made Polysaccharides in Drug Delivery; Amit Kumar Nayak, Md Saquib Hasnain (Eds.) Elsevier. ISBN: 978-0-12-821286-8.
5. Uses of tailor-made plant starches in drug delivery; Chapter 13; page 327-346 (2022); https://doi.org/10.1016/B978-0-12-821286-8.00004-5. In Tailor-Made Polysaccharides in Drug Delivery; Amit Kumar Nayak, Md Saquib Hasnain (Eds.) Elsevier. ISBN: 978-0-12-821286-8.
6. Gellan Gum-based Drug Delivery Carriers; Chapter-8; page 223 – 246 (2022). **DOI** **https://doi.org/10.1039/9781839166235**; Polysaccharide-based Biomaterials: Delivery of Therapeutics and Biomedical Applications Edited by Sougata Jana, Subrata Jana and Abraham J. Domb. The Royal Society of Chemistry 2023. Published by the **Royal Society of Chemistry**, www.rsc.org; Print ISBN: 978-1-83916-498-9;
PDF eISBN: 978-1-83916-623-5; ePub eISBN: 978-1-83916-624-2.
7. Alginate-based Carriers for Transdermal Drug Delivery; Chapter-3; page 69 – 89 (2022). **DOI** **https://doi.org/10.1039/9781839166235** ; Polysaccharide-based Biomaterials: Delivery of Therapeutics and Biomedical Applications Edited by Sougata Jana, Subrata Jana and Abraham J. Domb. The Royal Society of Chemistry 2023. Published by the **Royal Society of Chemistry**, www.rsc.org; Print ISBN: 978-1-83916-498-9;
PDF eISBN: 978-1-83916-623-5; ePub eISBN: 978-1-83916-624-2.
8. Plant polysaccharides in pharmaceutical tablets; Chapter-4; page 83-102 (2023). Dt. Of pub. 13.12.2022;
DOI: https://doi.org/10.1016/B978-0-323-90780-4.00013-9; "Plant Polysaccharides as Pharmaceutical Excipients". Edited by Amit Kumar Nayak, MD Saquib Hasnain, Dilipkumar Pal; Elsevier; ISBN: 978-0-323-90780-4.

9. Plant polysaccharides-based multiple-units for oral drug delivery; Chapter-8; page 171-193 (2023). Dt. Of pub. 13.12.2022; DOI: https://doi.org/10.1016/B978-0-323-90780-4.00005-X; "Plant Polysaccharides as Pharmaceutical Excipients". Edited by Amit Kumar Nayak, MD Saquib Hasnain, Dilipkumar Pal; Elsevier; ISBN: 978-0-323-90780-4.

Patent: 01 (published): Ionotropic hydrogel and hydrogel bead forming capacity of polysaccharide obtained from stolon part of taro (*Colocasia esculenta*) By **Gouranga Nandi**, Tarun Kumar Dua, Ranabir Sahu, Saikat Dewanjee, Paramita Paul. File No. 202231032990; Date of publication 23/09/2022.

Research Projects:

Title of the Project	Funding Agency	Year of Sanction and duration	Cost (INR)	PI or Co-PI	Status
Fabrication and in-vitro characterization of okra mucilage (*Hibiscus esculentus*) nanoparticles loaded with an antidiabetic phytoconstituent apigenin	University of North Bengal	2019-20	1.5 lakh	PI	Completed
Green-fabrication, characterization and evaluation of chemically modified natural polysaccharide based extended release fisetin loaded peroral nanoparticles for enhanced bioavailability, antioxidant and hypoglycemic efficacy	University Grant Commission	2019-2021	10 lakh	PI	Ongoing
Screening of some herbal hydrocolloids from North-Eastern Himalayas to fabricate them as mucoadhesive nasal gels	University of North Bengal	2020-21	1.5 lakh	PI	Completed
Taro (*Colocasia esculenta*) stolon polysaccharide-polyacrylamide graft copolymer: Synthesis, characterizations and application in sustained-release drug delivery	University of North Bengal	2021-22	1.5 lakh	PI	Completed

Membership of Learned Societies: Live member of APTI and Joint Secretary (APTI, West Bengal Chapter) for the period 2022-2027 and **Joint Secretary, APTI, Bengal Branch.**

Editorial Board Membership: Lifetime member of Advisory Editorial Board of following journals:

1. **ASIO Journal of Medical & Health Science Research**
2. **ASIO Journal of Pharmaceutical & Herbal Medicines Research**
3. **ASIO Journal of Drug Delivery**
4. **ASIO Journal Analytical Chemistry**

Reviewer of Journals: Acted as reviewer in the following journals:

1. Carbohydrate Polymers (Impact factor 11.2)
2. International Journal of Biological Macromolecules (Impact factor 8.2)
3. Current Drug Delivery (Impact factor 2.4)
4. Journal of Drug Delivery Science and Technology (Impact factor 5)
5. BMC Biotechnology (Springer Nature; Impact factor 3.5)
6. Indian Journal of Pharmaceutical Sciences