Personal Profile

Dr. Dilip Gorai (Associate Professor of Chemistry)



Name: Dr. Dilip Gorai
 Date of Birth: 30.12.1976

3. Caste: OBC-B

4. Address: Indirapally, Santiniketan, PIN-731235

5. Sex: Male

6. Educational Qualifications:

Name of Exam.	Board/Univ.	Year of Passing	Div/Class	% of marks
Madhyamik	WBBSE	1993	1 st	64.44
H.S.	WBCHSE	1995	1 st	72.20
B.Sc. Hons. in	Burdwan	1998	1 st	62.87
Chemistry	University			
M.Sc. (Chemistry)	Visva-Bharati	2000	1 st	71.20
CSIR-NET		2000		
GATE		2000		95.55 percentile
Ph.D.*	Visva-Bharati	2006		

^{*}Thesis Title: Studies on the chemical constituents of some Indian medicinal plants bearing polycyclic compounds (<u>Date of Award: 25.09.2006</u>)

7. Present Occupation

with address of Institution: Associate Professor of Chemistry (Since 13th August, 2017),

Bolpur College (Affiliated to The Univ. of Burdwan), Bolpur, Birbhum

8. Experiences

- a. Research: More than fifteen years experience in the field of Natural Products Chemistry
- b. Research Project work: Completed three UGC minor research projects as Principal Investigator

S. No.	Title of Project	Agency (Funding, Commissioning and/ or collaborating)	Period	Output/Impact, i.e. Book/Paper/film/technology/Web- facility/Programme/Process	Grant(s)/Amount mobilized (so far) in Rs. (Lakhs)
1	Chemical analysis of <i>Limnophila rugosa</i> -an indigenous medicinal	U.G.C.	19.12.06 to 18.12.08	One paper published (Indian J. Chem., Sec. B)	0.80
2	Terpenoids from Rauvolfia tetraphylla-a potent indigenous medicinal plant	U.G.C.	13.12.10 to 12.06.12	One paper published (J. Chem. Res.)	1.60
3	Chemical investigation and pharmacological studies of <i>Peltophorum</i> pterocarpum	U.G.C.	May. 2014 to April, 2016	Two papers published	5.0

- c. Teaching: (i) More than twelve years as an Assistant Professor of Chemistry
 - (ii) More than Six years in teaching as an Associate Professor
- d. **Answer script evaluation**: More than Fourteen years experience in evaluation of answer scripts of undergraduate level examinations appointed by The University of Burdwan (**both in Chemistry and Environmental studies**)
- e. **Paper Setter, Moderator & Head Examiner**: Performed as paper-setter, Moderator & Head Examiner in UG level (Hons. & General) as appointed by The University of Burdwan, as paper setter in UG level of The University of Gourbanga, Malda & Kazi Nazrul University, Asansol, as Head Examiner in UG level of NSOLL
- f. **UG BOS member**: Performing as UG BOS member in Chemistry of The University of Burdwan since March, 2023

- g. Research Paper Reviewer: Performed evaluation of research articles as Reviewer in some International Journals of repute
- h. **Life member**: Life member of the Indian Science congress Association (Membership No. L26804 dtd. 24.03.2015)

i. Orientation /Refresher/Short term course completed:

S.	Programme	Duration	Organised by	Grade received
No.				
1	15 th RC in <i>Environmental</i> Sciences	23.12.08 to 12.01.09	ASC, The Univ. of Burdwan	A
2	1st RC in Materials Science	28.06.13 to 18.07.13	ASC, The Univ. of Burdwan	A
3	Short Term course on	08.06.2017 to	HRDC, North Bengal	Completed successfully
	Research Methodology	14.06.2017	University	

j. Non-academic matters:

- i. More than six years experience as **Governing Body** (GB) member of Kulti college
- ii. More than three-year experience as **Governing Body (GB)** member (Univ. Nominee) of Deshbandhu Mahavidyalaya, Chittaranjan
- iii. More than five-year experience as **NSS Programme Officer** (a Central Govt. scheme) in Kulti college
- iv. Performing as GB member (as University Nominee & West Bengal Council of Higher Education Nominee) of Kabi Joydeb Mahavidyalaya, Illambazar since 2019 (still continuing)
- v. Performing as member in different sub-committees of the college like NAAC steering committee, Library committee, Admission committee etc.
- vi. Serving as Examination In-charge of Bolpur College in all University Examinations including different Competitive examinations held at Bolpur College Centre (continuing).
- vii. Performing as Co-ordinator, NSOU, Bolpur college centre from 1st April, 2017 to 31.03.2024
- viii. Performing as GB member (Teachers' Representative) of Bolpur College since December, 2018 (continuing)
- ix. Performing as GB member (as University Nominee) of Bolpur College since December, 2022 (continuing)

9. Publications:

a. Research articles

i. National Journal: Published: **10** (Ten)

ii. International Journal: Published: 37 (Thirty-seven)

b. **Book Chapters**: Edited Book Chapters: **05** (Five)

c. **Book**: **02** (Two)

List of Publications

- 1. G. Brahmachari, A. Gangopadhyay, S. Mondal, D. Chatterjee, **D. Gorai**, A new naturally occurring xanthone bearing rare oxygenation pattern from *Hoppea fastigiata*, **Journal of Chemical Research**, **2003**, 6, 362-363.
- 2. G. Brahmachari, S.M.A. Sohel, **D. Gorai**, S. Mondal, B. Mistri, An ethylenedioxy flavonoid carboxylic acid from *Limnophila indica*, **Journal of Chinese Chemical Society**, **2003**, 50(2), 325-328
- 3. K.S. Mukherjee, S.M.A. Sohel, **D. Gorai**, D. Chatterjee, B. Mistri, B. Mukherjee, G. Brahmachari, A new flavonoid from *Limnophila rugosa*, **Fitoterapia**, **2003**, 74(1-2), 188-190.
- 4. G. Brahmachari, **D. Gorai**, D. Chatterjee, Mondal, B. Mistri, 5,8-Dihydroxy-6,7,4'-trimethoxy flavone, a novel flavonoid constituent of *Limnophila indica*, **Indian Journal of Chemistry**, **Sec. B**, **2004**, 43B(1), 219-22.
- 5. K.S. Mukherjee, **D. Gorai**, B. Mukherjee, S. Mondal, G. Brahmachari, Triterpenes from *Borreria articularis*, **Journal of Chinese Chemical Society**, **2004**, 51(1), 229-31.

- 6. G. Brahmachari, S. Mondal, A. Gangopadhyay, **D. Gorai**, B. Mukherjee, S. Saha, A.K. Brahmachari, *Swertia* (Gentianaceae): Chemical and pharmacological aspects, **Chemistry & Biodiversity**, **2004**, 1(11), 1627-51.
- 7. G. Brahmachari, **D. Gorai**, Progress in the research of naturally occurring flavones and flavonols: An overview, **Current Organic Chemistry**, 2006, 10(8), 873-98.
- **8.** S. K. Jash, S. Mondal, **D. Gorai**, G. Brahmachari, Chemical investigation of *Limnophila rugosa*-an indigenous medicinal plant, **Proc. of National symposium on MAPER, RKVM, Kamarhati, Kolkata, 2007,** 49-52.
- 9. G. Brahmachari, D. Gorai, Recent progress on the research of Flavonoids: An overview, Recent Trends & Developments of Natural Products. Research Signpost. Trivandrum. India. 2006. Chapter-4, 61-159. [Book Chapter, ISBN-81-308-0140-X]
- 10. G. Brahmachari, Arindam Gangopadhyay, S.K.Jash, S. Laskar, D. Gorai, Chemical constituents of *Limnophila indica*, Indian Journal of Chemistry, Sec. B, 2008, 47B(12), 1898-1902.
- 11. G. Brahmachari, **D. Gorai**, Michael addition reaction: Applications in total synthesis of bioactive natural products, **Natural Products:** Chemistry, **Biochemistry and Pharmacology**, *Narosa Publishing House Ltd.*, *New Delhi*, *India*, **2009**, Chapter-21, 782-804. [Book Chapter, ISBN: 978-81-7319-886-1]
- 12. G. Brahmachari, R. Roy, **D. Gorai**, L.C. Mandal, P.P.Ghosh, A new long-chain secondary alkanediol from the flowers of *Argemone mexicana*, **Journal of Chemical Research**, **2010**, 34(11), 656-57.
- 13. **D. Gorai**, S.K.Sou, Antibacterial activity of some medicinal plants available in Panchet and Panchokot Hills, Purulia, West Bengal, **J. Panchokot esSAYS**, **2011**, 2, 282-86.
- 14. G. Brahmachari, L.C. Mandal, R. Roy, **D. Gorai**, S.K.Jash, A. Mondal, S. Majhi, Lupeol, a pharmaceutically potent triterpenoid, from the ripe fruits of *Rauvolfia tetraphylla L.* (Apocynaceae), **Journal of the Indian Chemical Society**, **2011**, 88(2), 303-305.
- 15. G. Brahmachari, L.C.Mandal, **D. Gorai**, A. Mondal, S. Sarkar, S. Majhi, A new labdane diterpene from *Rauvolfia tetraphylla* Linn. (Apocynaceae), **Journal of Chemical Research**, **2011**, 35(12),678-680.
- 16. **D. Gorai**, S. K. Jash, Trends in development of biopesticides, **Green chemistry and sustainable agriculture practices: a step towards a better future**, Council for MS Academic B-7/39, Kalyani, W.B., India, **2013**, 185-195.
- 17. G. Brahmachari, **D. Gorai**, R. Roy, *Argemone mexicana*: Chemical and Pharmacological aspects, **Revista Brasileira de Farmacognosia**, 2013, 23(3), 559-575.
- 18. S. K. Jash, A. Gangopadhyay, A. Sarkar, **D. Gorai**, Phytochemical investigation of the hexane extract of stem bark of *Peltophorum pterocarpum* (DC.), **Der Pharma Chemica**, **2013**, 5(5), 49-53.
- 19. Raj K. Singh, Atasi Sarkar, **D. Gorai**, Antibacterial activity of some medicinal plants available in Panchet and Panchokot Hills, Purulia, West Bengal, **Der Pharmacia Letters**, **2013**, 5(6), 20-23.
- 20. S.K. Jash, Atasi Sarkar, **D. Gorai**, *Limnophila indica* (Scrophulariaceae): Chemical and pharmacological aspects, **Int. J. Nat. Prod. Res.**, 2013, 3(4), 110-114.
- 21. D. Gorai, Bioactive constituents of Peltophorum pterocarpum (DC.) flowers, Der Pharma Chemica, 2013, 5(6), 364-368.
- 22. S.K. Jash, R.K. Singh, A. Sarkar, Sasadhar Majhi, **D. Gorai**, Chemical and pharmacological aspects of *Limnophila rugosa*: An update, **Int. J. Nat. Prod. Res., 2013,** 3(4), 120-124.
- 23. S.K. Jash, R.K. Singh, S. Majhi, A Sarkar, **D. Gorai**, *Peltophorum pterocarpum*: Chemical and pharmacological aspects, **Int. J. Pharm. Sci. Res., 2014**, 5(1), 26-36.
- 24. S.K. Jash, Raj K. Singh, **D. Gorai**, Chemical and pharmacological aspects of *Limnophila heterophylla* (Scrophulariaceae): An overview, **Int. J. Pharm. Sci. Rev. Res., 2014,** 25(2), 100-102.
- 25. S.K. Jash, Raj K. Singh, A. Gangopadhyay, **D. Gorai**, Chemical and pharmacological aspects of *Limnophila aromatica* (Scrophulariaceae): An overview, **Am. J. Phytomed. Clin. Ther., 2014**, 2(3), 348-356.
- 26. S. K. Jash, **D. Gorai**, A. Gangopadhyay, Biosynthesis of Silver Nanoparticles from Aqueous Leaf Extract of *Synedrella nodiflora* under Sunlight Irradiation and Screening of its Antibacterial Activity, **Int. J. Pharm. Sci. Nanotechnol., 2014,** 7(3), 2590-96.
- 27. D. Gorai, Two bioactive constituents from Argemone mexicana, Int. J. Curr. Res. Chem. Pharm. Sci., 2014, 1(4), 64-67.
- 28. S. K. Jash, R. Roy, **D. Gorai**, Bioactive constituents from *Bauhinia variegata* Linn., Int. J. Pharm. Biomed. Res., 2014, 5(2), 51-54.
- 29. D. Gorai, R. Roy, A. Sarkar, D.K. Roy, Chemical and pharmacological aspects of *Limnophila geoffrayi*: An update, World J. Pharm. Sci., 2014, 2(11), 1582-86.
- 30. R. Roy, Raj. K. Singh, S.K. Jash, A. Sarkar, **D. Gorai**, *Combretam quadrangulare* (Combretaceae): Phytochemical constituents and biological activity, **Indo Am J. Pharm. Res., 2014**, 4(8), 3416-3426.
- 31. S. Roy, R. Acharya, R. Roy, **D. Gorai**, *Combretum* (Combretaceae): Biological activity and phytochemistry, **Indo Am J. Pharm. Res., 2014**, 4(11), 1566-1599.
- 32. R. Roy, S. K. Jash, **D. Gorai**, Light at Night (LAN): Now a Global Challenging Issue, **The Journal of Social Science and Humanity Research**, **2015**, 2(2), 215-236.
- 33. D. Gorai, R. Roy, S. K. Jash, R. Acharya, Chemistry and Pharmacology of the Genus *Limnophila* (Scrophulariaceae), The Natural Products Journal, 2015, 5(1), 14-33.
- 34. S. K. Jash, **D. Gorai**, Sugar derivatives of morphine: A new window for the development of potent anesthetic drugs, **The Natural Products and Bioprospecting**, **2015**, 5(3), 111-127.
- 35. S. K. Jash, R. Roy, R. K. Singh, **D. Gorai**, *Limnophila* (Scrophulariaceae): Chemical and pharmacological aspects, **World J. Pharm. Res., 2015**, 4(7), 1269-1300.

- 36. D. Gorai, S. K. Jash and R. Roy, Ursane's from Salvia species, Indo Am. J. Pharm. Res., 2016, 6(1), 4242-4252.
- 37. D. Gorai, S. K. Jash and R. Roy, Lupane from Salvia Genus, Int. J. Nat. Prod. Res., 2016, 6(1), 12-17.
- 38. S. K. Jash, **D. Gorai** and R. Roy, *Salvia* Genus: Minor Isolated Triterpenoid (s), **Int. J. Innov. Sci. Res., 2016, 5**(2), 001-004.
- 39. R. Roy, S. K. Jash, S. Roy, R. N. Acharya, **D. Gorai**, Two Bioactive constituents from *Combretum decandrum*, Int. J. Nat. Prod. Res., 2016, 6(1), 18-20.
- 40. D. Gorai, S. K. Jash, S. Roy, Flavonoids from Astragalus Genus, Int. J. Pharm. Sci. Res., 2016, 7(7), 2732-47.
- 41, S. K. Jash, D. Gorai and R. Roy, Salvia Genus and Triterpenoids, Int. J. Pharm, Sci. Res., 2016, 7(12), 4710-32.
- 42. **D. Gorai**, Antimicrobial activity of the leaf and flower extract of *Peltophorum pterocarpum*, **Universal Journal of Chemistry**, **2016**, 5-6.
- 43. D. Gorai, S. K. Jash and R. Roy, Ethnopharmacological, phytochemical, pharmacological and toxicological aspects of *Lantana camara* L.: A comprehensive Review, *Advances in Biomedicine and Pharmacy*, **2016**, 3(5), 328-57.
- 44. R. Roy, S. K. Jash and D. Gorai, Phytochemical and GC-MS studies on *Symphorema polyandrum* seeds, **Proceedings of the National Seminar on Chemistry on its way; Impacts on the Environment**, Saldiha College, **2017**, **58-71**. [Book Chapter, ISBN: 978-93-84191-17-7]
- 45. D. Gorai, Waste Management in Educational Institutions, **Proceedings of the UGC sponsored National Seminar on Pollution: Disbalancing the Global Environment: Threats and Preventions**, Bolpur College, **2017** [Book Chapter, ISBN: 978-93-80869-62-9]
- 46. Rajiv Roy, Dilip Gorai, Shyamal K. Jash, Flavonoids from *Astragalus* Genus, **LAMBERT Academic publishing, Germany**, **2017**. [Book: ISBN Number 978-3-330-03625-3; Published on 02-02-2017]
- 47. S. Lakhmale, R. Acharya, D. Gorai, R. Roy, Phytochemical analysis of *Symphorema polyandrum* Wight. seeds by GC-MS, **Indo Am. J. Pharm. Res., 2017,** 7(5), 8852-8862.
- 48. Rajiv Roy, Dilip Gorai, Rabinarayan Acharya, Sudipta Roy, *Combretum* (Combretaceae): Biological activity and Phytochemistry, **LAMBERT Academic publishing, Germany**, **2017**. [Book: ISBN Number 978-3-330-33411-3 Published on 23-06-2017]
- 49. Dilip Gorai, An Isoflavone from Peltophorum pterocarpum, World J. Pharm. Res., 2017, 6(11), 718-22.
- 50. D. K. Rana, D. Saha, P. S. Sengupta, B. Sarkar, P. Mondal, D. Gorai & S. K. Jash, Computational and Docking Studies of 5,6-dihydroxy-7,8,4'-trimethoxyflavone: A α-Glucosidase Inhibitory Constituent from *Limnophila indica*, *Journal of Chemistry and Chemical Sciences*, March 2018, 8(3), 548-61.
- 51. S. K. Jash, D. Gorai, L. C. Mondal and R. Roy, Nuclear Magnetic Resonance Spectroscopic Behaviour of some selective Natural Flavonoids: A look through, *Mini Reviews in Organic Chemistry*, **2020**, 17(2), 185-196. [DOI: https://doi.org/10.2174/1570193X166661812241106; Bentham Science Publication)
- 52. S. K. Jash, D. Gorai, L. C. Mondal and S. Pal, GC-MS Analysis of Antibacterial Phytochemicals from *Cassia sophera* Linn., *International Journal of Pharmaceutical sciences and Nanotechnology*, **2020**, 13(5), 5131-5137.
- 53. A. Gangopadhyay, D. Gorai, S.K. Jash & S. Chattopadhyay, Cytotoxicity of Natural Flavones and Flavonols against different cancer cells, *J. Iranian Chemical Society*, 2022, 19(5), 1547-73. (Springer Publication).
- 54. D. Gorai, S.K. Jash and D. Kundu, *Progress in the Research of Naturally Occurring Biflavonoids: A Look through* in "Frontiers in Natural Products Chemistry" (Ed. Prof Atta-ur-Rahaman), Bentham Science Publication, 2022, Volume-10, Chapter-3, pp. 73-153.
- 54. A. Mahata, M. Garain, Totan Roy, D. Gorai and D. Kundu, Transition metal catalysed direct C-H chalcogenation of arenes and heteroarenes, *Current Organic Synthesis*, 2023, 20(6), 764-795.
- 55. A. Roy, A. Mondal, D. Gorai and Debashis Kundu, Fe(0) Nps-catalysed C-Chalcogenide cross coupling of Boronic acids with Dichalcogenides under Microwave irradiation, *Current Green Chemistry* (Communicated in March 2024)

10. Awards received:

- a. Arun Sen memorial award for securing highest marks in Chemistry Honours in Suri Vidyasagar College
- b. National merit scholarship on the basis of B.Sc. (Hons.) result

11. Papers presented in Conferences, Seminars, Workshops, Symposia

S. No.	Title of the paper presented	Title of Conference/Seminar	Organized by
1	A novel pentaoxygenated flavone from Limnophila indica	40 th Annual Convention of Chemists 2003	Indian Chemical Society, 2003
2	Limnophila heterophylla- a new source of Nevadensin	42 nd Annual Convention of Chemists 2005	Indian Chemical Society, 2006
3	Rugosone-a novel flavonoid from Limnophila rugosa	NACMAP-2005	B. N. Mahavidyalaya, Itachuna, Hoogly, 2005
4	New Natural source and X-ray crystallographic study of two flavonoids from Limnophila indica	National symposium on current trends in chemistry	University of Kalyani, Nadia, 2007
5	Chemical investigation of <i>Limnophila</i> rugosa-an indigenous medicinal plant	Medicinal and Aromatic plants for economic benefit of rural people	RKVM-IAS, Kamarhati, Kolkata, 2007

		(MAPER)	
6	A bioactive flavonoid from Limnophila indica	16 th West Bengal State science & Technology congress	West Bengal Science and Technology & The Univ. of Burdwan, 2009
7	A new naturally occurring flavonoid from <i>Limnophila indica</i>	Recent trends in chemistry	B. C. College, Asansol, 2010
8	Bioactive triterpenoids from Rauvolfia tetraphylla- a useful Indian medicinal plant	The national conference on green and sustainable chemistry	BITS, Pillani, Rajasthan, 2010
9	Triterpenoid constituents of Rauvolfia tetraphylla (Apocynaceae)	Current trends in Chemistry	Deshbandhu Mahavidyalaya, Chittaranjan, 2011
10	Trends in Development of Biopesticides	Green chemistry and sustainable agriculture practices: a step towards a better future	Panchokot Mahavidyalaya, 2013
11	Trends in development of biopesticides	Green Chemistry and Sustainable Agricultural practices: A step towards a better future	Panchokot Mahavidyalaya, Purulia, 2013
12	Chemical and pharmacological aspects of <i>Peltophorum pterocarpum</i>	Bioprospecting of Natural products	Burdwan University, 2013
13	Triterpenoid constituents of Peltophorum pterocarpum	21st West Bengal science and Technology congress	Burdwan University, 2014
14	Synthesis of silver nano particles in aqueous leaf extract of Tulsi with enhanced antibacterial activity: a photobiological approach	International conference on non-linear dynamics and its applications in physical and biological sciences (CNDAPBS-14)	Darjeeling Govt. college, 2014
15	Phytochemical Analysis of Symphorema polyandrum seeds by GC- MS studies	National Seminar on Chemistry on Its Way: Impacts on the Environment	Saldiha College, Bankura, 2016
16	Phytochemical Analysis of Symphorema polyandrum	1st Regional Science & Technology congress-2016	Bankura Christian College and DST, West Bengal, 2016
17	Waste Management in Educational Institutions	UGC sponsored State Level seminar/conference/workshop on Effective College Administration	Kulti College, Kulti, Burdwan, 2016
18	An isoflavone from Peltophorum pterocarpum	International "Science Seminar"	Burdwan Raj College & Indian Chemical Society, 10 th October, 2017
19	5,7-Dihydroxy-2',3',4'- trimethoxyisoflavone: A Bioactive flavonoid from Peltophorum pterocarpum	International Science Seminar on "Science:Past, Present & Future"	Syamsundar College & Indian Chemical Society, 12 th December, 2017

12. Participation in Conferences, Seminars, Workshops, Symposia without paper

S. No.	Title of Conference/Seminar	Date and Year	Organized by
16	Short Duration Lecture Workshop on Recent Trends in Interdisciplinary Sciences	12-14 February, 2018	ISERC & Visva-Bharati
15	One Day Workshop on CBCS system	17th July, 2017	The University of Burdwan and Suri Mahavidyalaya
14	UGC sponsored National Seminar on Rabindranath Tagore: Humanity and	2nd & 3rd December, 2015	Bolpur College, Bolpur

	Cultural affinity		
13	Lecture workshop on Recent Trends in Chemistry with reference to Teaching and Research	13-14 March, 2015	Department of Chemistry, Visva- Bharati
12	State Level seminar on Siksha, sanskriti, chatra andolansikhaker bhumika	15th November, 2014	IACS, Kolkata
11	Lecture workshop on Recent Developments in Chemistry	29th November-1st December, 2012	Department of Chemistry, Visva- Bharati
10	National seminar on Recent Advances in Chemical Sciences	15-17 March, 2012	Department of Chemistry, The University of Burdwan
9	UGC sponsored one-day seminar on International Year of Chemistry: Impact of Chemistry on our lives	25th March, 2011	Department of Chemistry, Visva- Bharati
8	UGC sponsored National seminar on Current Trends in Chemistry	25th February, 2011	Department of Chemistry, The University of Kalyani
7	One day seminar on Acharya Prafulla Chandra Roy	24th December, 2010	NSS, The University of Burdwan
6	Seven day's inter-college camp	26.11.201001.12.2010	NSS, The University of Burdwan
5	National Seminar on Chemistry Today	18-20 March, 2010	Department of Chemistry, The University of Burdwan
4	Workshop on Gender inequality in education and the role of NSS (Sponsored by NSS, BU)	27th January, 2010	NSS Units, Kulti College
3	One day University workshop on Human Rights	10th December, 2009	NSS Unit, The University of Burdwan
2	Symposium on Polymer waste management	16-17 December, 2006	Department of Chemistry, Visva- Bharati
1	Seminar on Acharya Prafulla Chandra Ray and Chemistry Today	15th September, 2006	Indian Chemical Society