

Curriculum Vitae of Dr.S.Meenakshi

Present Position : Associate Professor



Appointments

Position	Organisation	Period
Associate Professor	Gandhigram Rural Institute	2002 to till date
Senior Lecturer	Gandhigram Rural Institute	1998-2002
Lecturer	Gandhigram Rural Institute	1992 -1998

Educational Qualification : M.Sc., Ph.D

Education

📖 Doctor of Philosophy in Chemistry – Gandhigram Rural Institute, India during 1988-1992.

Title: Studies on Defluoridation of Water with a Few Adsorbents and Development of an Indigenous Defluoridation Unit for Domestic Use

📖 Master Degree in Chemistry – Gandhigram Rural Institute, India during 1985-1987.

📖 Bachelor Degree in Chemistry – Gandhigram Rural Institute, India during 1982-1985.

Teaching and research experience

✍ Teaching -17 Yrs

✍ Research-20 Yrs

Laboratories/Department established

- ❖ A water lab has been established with necessary equipments utilizing the funds mobilized from the projects**

Involved in Institute Development

- ❖ Helped in creating basic facilities for women under 11th plan merged grant.

Research Guidance

Number of Ph. D students awarded: 3

1. Dr. A. Shanmuga Sundarraj
2. Dr. C. Sairam Sundaram
3. Dr. N. Viswanathan

Number of Ph. D students working: 8

Name of the Student	Topic	Year
Mr. George Sebastian	Pollution Studies on the Estuaries of the Vembanad Lake in Kerala and Chemometric Characterisation	Thesis Submitted
Ms. G.N. Kousalya	Sorption studies of Copper(II), Iron(III) and Chromium(VI) on modified Biopolymers and Nanocomposites	Thesis Submitted
Mr. P. Ravichandran	Thermodynamics and kinetic studies on sorption of a few selected dyes using indigenously prepared carbons	Synopsis Submitted
Mr. M. Rajiv Gandhi (Project Fellow - DRDO-ER-MRP)	Synthesis and characterization of polymeric resins and nanocomposites for its removal of heavy metal ions from water	Doing
Mr.N. Sivasurian (Part-time) IOC, New Delhi	Bioremediation of oil pollution	Doing
Ms.G.Kalaivavi (Junior Research Fellow – DST-WTI-MRP)	Feasibility Studies of a Few Developed and Experimental Defluoridation Technologies in Selected Fluorotic Villages of Dindigul District in Tamilnadu	Doing
Ms.A.Sowmya Full-Time	Removal of organics and heavy metals using biosorption and photodegradation methods	Doing
Mr.P.SivaKumar (Part-time) IGCAR –Kalpakkam	Separation of Actinides	Doing

No. of M.Phil guided : 5

Name of the Student	Topic	Year
Ms.G.Kalaivani	Removal of a few selected dyes using biosorption and photo-oxidation methods	2009
Mr.R.SenthilKumar	Hexavalent chromoim removal using polymeric resin	2009
Ms.K. Bharathi	Removal of chromium (VI) using the biopolymer chitosan	2008
Mr. K. Rakjumar	Removal of fluoride using iron loaded chitosan beads	2008
Ms.M.Banumathi	Equilibrium and kinetic studies on defluoridation of lanthanum loaded ion exchange resin	2007

Research Interests

- 🌀 **Safe Drinking Water**
- 🌀 **Water and Waste Water Treatment**
- 🌀 **Fluoride and Other Anions Removal**
- 🌀 **Heavy Metal Removal**
- 🌀 **Dye Removal**
- 🌀 **Polymeric Resins**
- 🌀 **Biopolymers**
- 🌀 **Nanocomposites**
- 🌀 **Organic-inorganic Hybrids Materials**
- 🌀 **Ion Exchangers**

Research Project Undertaken -5

S.No	Title of the Project	Funding Agency	Amount (Rs)	Period	Status
1	Feasibility Studies of a Few Developed and Experimental Defluoridation Technologies in Selected Fluorotic Villages of Dindigul District in Tamilnadu (Principal Investigator)	DST-WTI Major Research Project	27.6 Lakhs	2009 to 2012	Ongoing
2	Synthesis and Characterization of Polymeric Resins and Nanocomposites for the Removal of Heavy Metal Ions from Water and Development of Viable Technology (Principal Investigator)	DRDO – Extramural Research - Major Research Project	14.8 Lakhs	2008 to 2011	Ongoing
3	Synthesis and Characterization of Polymeric Compounds and their Defluoridation Studies (Principal Investigator)	UGC - Major Research Project	9.2 Lakhs	2005 to 2007	Completed
4	Assessment of Loss of Ecology and Environment due to Tannery Effluents in and around Dindigul District (Co-Principal Investigator)	Authorities of Loss of Ecology, Govt. of India	3.0 Lakhs	1999 to 2001	Completed
5	Defluoridation of water using burnt clay	UGC- Minor Research Project	0.12 Lakhs	2000	Completed

List of Publications

International Refereed Journal.

1. Removal of fluoride from aqueous solution using protonated chitosan beads.
N. Viswanathan, C. Sairam Sundaram and **S. Meenakshi**
J Hazard Mater 161 (2009) 443-450. (Impact Factor: 2.975)
2. Role of metal ion incorporation in ion exchange resin in the selectivity of fluoride.
N. Viswanathan and **S. Meenakshi**
J Hazard Mater, 162 (2009) 920-930. (Impact Factor: 2.975)
3. Defluoridation of water using magnesia/chitosan composite.
C. Sairam Sundaram, N. Viswanathan and **S. Meenakshi**
J Hazard Mater, 163 (2009) 618-624. (Impact Factor: 2.975)
4. Sorption behaviour of fluoride on carboxylated crosslinked chitosan beads.
N. Viswanathan, C. Sairam Sundaram and **S. Meenakshi**
Colloids Surf B, 68 (2009) 48-54. (Impact Factor: 2.593)
5. Development of multifunctional chitosan beads for fluoride removal
N. Viswanathan, C. Sairam Sundaram and S. Meenakshi
J Hazard Mater, 167 (2009) 325-331. (Impact Factor: 2.975)
6. Fluoride sorption using organic-inorganic hybrid type ion exchangers.
C. Sairam Sundaram and **S. Meenakshi**
J Colloid Interface Sci, 333 (2009) 58-62. (Impact Factor: 2.443)
7. Enhanced and selective fluoride sorption on Ce (III) encapsulated chitosan polymeric matrix.
N. Viswanathan and S. Meenakshi
J Appl Polym Sci, 112 (2009) 1114-1121. (Impact Factor: 1.187)
8. Synthesis of Zr(IV) entrapped chitosan polymeric matrix for selective fluoride sorption.
N. Viswanathan and **S. Meenakshi**
Colloids Surf B: Biointerfaces, 72 (2009) 88-93. (Impact Factor: 2.593)

9. Fluoride sorption using nano-hydroxyapatite/chitin composite.
C. Sairam Sundaram, N. Viswanathan and **S. Meenakshi**
J Hazard Mater, 172 (2009) 147-151. (Impact Factor: 2.975)
10. Development of chitosan supported zirconium(IV) tungstophosphate composite for fluoride removal
N.Viswanathan, S. Meenakshi, **J Hazard Mater**
10.1016/j.jhazmat.2009.11.051 (Impact Factor: 2.975)
11. Defluoridation of drinking water using pink kaolin.
C. Sairam Sundaram, Rugmini Sukumar and **S. Meenakshi**
Indian J Environ Prot, 29 (2009) 385-391.
12. Development of chitosan supported zirconium(IV) tungstophosphate composite for fluoride removal
N.Viswanathan, S. Meenakshi,
J Hazard Mater,10.1016/j.jhazmat.2009.11.051. (Impact Factor: 2.975)
13. Enhanced fluoride sorption by mechanochemically activated kaolinites.
S. Meenakshi, C. Sairam Sundaram and Rugmini Sukumar
J Hazard Mater, 153 (2008) 164-172. (Impact Factor: 2.975)
14. Enhanced fluoride sorption using La(III) incorporated carboxylated chitosan beads
N. Viswanathan and **S. Meenakshi**
J Colloid Interface Sci, 322 (2008) 375-383. (Impact Factor: 2.443)
15. Selective sorption of fluoride using Fe (III) loaded carboxylated chitosan beads,
N. Viswanathan and **S. Meenakshi**
J Fluorine Chem, 129 (2008) 503-509. (Impact Factor: 1.593)
16. Defluoridation chemistry of synthetic hydroxyapatite at nano scale: Equilibrium and kinetics studies.
C. Sairam Sundaram, N. Viswanathan and **S. Meenakshi**
J Hazard Mater, 155 (2008) 206-215. (Impact Factor: 2.975)
17. Uptake of fluoride by nano-hydroxyapatite/chitosan, a bioinorganic composite.
C. Sairam Sundaram, N. Viswanathan and **S. Meenakshi**
Bioresource Technol, 99 (2008) 8226-8230. (Impact Factor: 4.453)

18. Effect of metal loaded in a resin towards fluoride retention.
N. Viswanathan and **S. Meenakshi**
J Fluorine Chem, 129 (2008) 645-653. (Impact Factor: 1.593)
19. Impact of dyeing effluents on Ground water quality and its suitability for irrigation.
N. Viswanathan and **S. Meenakshi**
Indian J Environ Prot, 28 (2008) 617-624.
20. Characteristics of dairy effluents and its suitability for irrigation.
M. Seethalakshmi and **S. Meenakshi**
Indian J Environ Prot, 28 (2008) 348-354
21. Identification of selective ion exchange resin for fluoride sorption.
S. Meenakshi and N. Viswanathan
J Colloid Interface Sci, 308 (2007) 438-450. (Impact Factor: 2.443)
22. Influence of soil characteristics on the leaching of fluoride from soils in selected fluoride environments of Tamilnadu in South India.
G. Karthikeyan, **S. Meenakshi** and T.G. Sathesh Babu
Poll Res 26 (2007) 503-506.
23. Water defluoridation using indigenous plant materials.
G. Karthikeyan, **S. Meenakshi** and C. Sairam Sundaram
Indian J Environ Prot, 26 (2006) 25-29.
24. Adsorption dynamics and the effect of temperature of fluoride at alumina-solution interface
G. Karthikeyan, A. Shanmuga Sundarraj, **S. Meenakshi** and K.P. Elango
J Indian Chem Soc, 81 (2004) 461-466.
25. Ground Water pollution due to Tannery Effluents in Certain areas of dindigul town of Tamilnadu.
B.V.Appa Rao, V.Gopal, G.Karthikeyan, Anitha pius, S.Meenakshi
Indian J Environ Prot, 11 (1991) 568-571.

26. The pH dependent of efficiency of activated alumina in defluoridation of water
S.Meenakshi, Anitha pius, G.Karthikeyan, B.V.Apparao
Indian J Environ Prot, 7 (1991) 511-513
27. Monitoring and control of environmental pollution due to effluent from tanneries
located in Dindigul
G.Karthikeyan, S.Meenakshi, B.V.Appo Rao
J Ind Pollut Contr, 6 (1990) 1-10.
28. Nalgonda technique of defluoridation of water
G.Karthikeyan, S.Meenakshi, B.V.Appa Rao
Indian J Environ Prot, 10 (1990) 4.

Paper presented in International Conferences

1. Selective fluoride sorption by Ce(III) loaded carboxylated crosslinked chitosan beads.
N. Viswanathan and **S. Meenakshi**
20th Annual General Meeting of the Materials Research Society of India held at Saha Institute of Nuclear Physics, Kolkata during 10 -12 February 2009.
2. Effect of multivalent metal ion loaded in a resin towards fluoride sorption.
N. Viswanathan and **S. Meenakshi**
11th National Symposium in Chemistry held at National Chemical Laboratory, Pune during 6-8 February 2009
3. Defluoridation using nano-hydroxyapatite/chitosan composites.
C. Sairam Sundaram, N. Viswanathan and **S. Meenakshi**
International Conference on *Nano Science and Technology* organized by Indira Gandhi Centre for Atomic Research (Kalpakkam), Chennai during February 27-29, 2008.

4. Synthesis and characterization of La (III) incorporated carboxylated chitosan beads for fluoride removal.
N. Viswanathan, C. Sairam Sundaram and **S. Meenakshi**
10th National Symposium in Chemistry held at Indian Institute of Science, Bangalore during February 1-3, 2008.
5. Fluoride sorption by pink kaolin.
C. Sairam Sundaram and **S. Meenakshi**
International Conference on *The Challenges and Strategies for the Sustainability of Safe Drinking Water* organized by the Department of Chemistry, Gandhigram Rural University, Gandhigram during 25-27 October 2006.
6. The behaviour of ion exchange resins in fluoride sorption.
N. Viswanathan and **S. Meenakshi**
International Conference on *The Challenges and Strategies for the Sustainability of Safe Drinking Water* organized by the Department of Chemistry, Gandhigram Rural University, Gandhigram during 25-27 October 2006.
7. Characteristics of dairy effluents and its suitability for irrigation.
M. Seethalakshmi and **S. Meenakshi**
International Conference on *The Challenges and Strategies for the Sustainability of Safe Drinking Water* organized by the Department of Chemistry, Gandhigram Rural University, Gandhigram during 25-27 October 2006.
8. Impact of dyeing effluents on the quality of Amaravathi river in Karur, Tamilnadu.
S. Meenakshi and P. Ravichandran
International Conference on *The Challenges and Strategies for the Sustainability of Safe Drinking Water* organized by the Department of Chemistry, Gandhigram Rural University, Gandhigram during 25-27 October 2006.

9. Heavy metal pollution due to dumping of solid waste in an industrial area of Dindigul town, Tamilnadu.

S. Meenakshi and G.N. Kousalya

International Conference on *The Challenges and Strategies for the Sustainability of Safe Drinking Water* organized by the Department of Chemistry, Gandhigram Rural University, Gandhigram during 25-27 October 2006.

10. Impact of dyeing effluents on the ground water quality and its suitability for irrigation.

N. Viswanathan and **S. Meenakshi**

8th Asian Academic Network for Environmental Safety and Waste Management (AANESWM), organized by the Department of Chemistry, Anna University, Chennai during 10-13 December 2006.

Paper presented in National Conference

1. Fluoride sorption using magnesia/chitosan composite.

N. Viswanathan, C. Sairam Sundaram and **S. Meenakshi**

National Conference on Advances in Surface and Interface Analysis, organized Department of Chemistry, Periyar University, Salem during 13 and 14 December 2007.

2. Studies on defluoridation using commercially available anion exchange resins.

S. Meenakshi and N. Viswanathan

National Seminar on *Applications of Electron Transfer Processes* organized by the Department of Chemistry, Gandhigram Rural University, Gandhigram during 5-6 January 2006

Conference Organized

S.No	Title of the Project	Year	Duration	Number of participants
1	International Conference on “The Challenges and Strategies for the Sustainability of Safe Drinking Water” (Convener)	25-27 October 2006	3 days	100
2	National seminar on water quality surveillance and sustainable issues held at Gandhigram Rural Institute during 10-13 th December 1997 as (Co-convener)	10-13 December	3 days	100

Membership in higher level academic bodies

- ❖ Member Academic council, Gandhigram Rural Institute, Gandhigarm.
- ❖ Member in Board of Studies- PSG Krishnammal College of Arts and Science, Coimbatore, Tamilnadu.

Resource Person

- ❖ Served as a resource person in the UGC Sponsored refresher courses

Serving as a Reviewer for

- ✍ American Chemical Society Journals
- ✍ Elsevier Journals
- ✍ Springer Journals
- ✍ National Journals

Committee Member

- ❖ Member, Discipline committee, Gandhigram Rural Institute, Gandhigarm
- ❖ Member, Committee related to harassment of women, Gandhigram Rural Institute, Gandhigarm

Foreign Countries Visited

- ❖ Served as resource person in chemistry for conducting a teacher training programme for the benefit of Indian origin Tamil plantation teachers in Hatton, Srilanka during 21.08.2007 to 31.08.2007, organized by Govt of India.

Administrative Experience

- ❖ Serving as Lady Warden from 15.09.2009 to till date

Others

- ❖ Completed two student projects sanctioned by TNSCST, Chennai and L-Ramp.