



Dr. C. SEKAR
Professor & Head

Contact

Address : Department of Bioelectronics & Biosensors
Alagappa University
Karaikudi – 630 003
Tamil Nadu, INDIA

Employee Number : 37001

Date of Birth : 03.05.1968

Contact Phone (Office) : +91 4565 226385

Contact Phone (Mobile) : +91 9442563637

Contact e-mail(s) : Sekar2025@gmail.com

Academic Qualifications

Degree	Institution	Year	Branch	Class
Ph.D.	Crystal Growth Centre Anna University, Chennai.	1997	*Nanomaterials Science-Physics	Highly Commende d
M.Sc.	Pachaiyappa's College University of Madras	1990	Physics	I Class
B.Sc.	Sacred Heart College University of Madras	1988	Physics	I Class

* Thesis title: Synthesis, Crystal growth and Characterization of Fullerenes and Some Studies on Carbon Nanotubes

Teaching Experience: 11 Years

Position	Institution	Duration
Professor & Head	Dept. of Bioelectronics & Biosensors Alagappa University, Karaikudi.	11.03.2010 -till date
Lecturer/ Asst. Professor	Department of Physics Periyar University, Salem, India.	16.03.2005 -10.03.2010

Research Experience: 19 Years

Position	Institution	Duration
Scientist	Solid State Chem. Group IFW-Dresden, Germany.	30.11.2000 - 15.03.2005
Post Doctoral Fellow	Nippon Telegraph and Telephone (NTT) Corporation, Japan.	20.10.1997 - 19.10.2000

Additional Responsibilities

1. Member - Standing Committee on Academic Affairs, Alagappa University, Karaikudi.
2. Member- SENATE, Alagappa University, Karaikudi.
3. Member, Research Advisory Committee (RAC), Alagappa University, Karaikudi.
4. Director, Centre for International Relations, Alagappa University, Karaikudi.
5. Dean, Industry and Consultancy, Alagappa University, Karaikudi.(2012-15)
6. Co-ordinator, Centre for Nanotechnology, Periyar Univ., Salem (May 2008-March'10)

Areas of Research

1. Chemical Sensors-Biosensors for Medical, Agricultural, Food and Environmental Applications
2. Materials Science, Metal oxide semiconductors, Carbon nanostructures, Biomaterials, Low dimensional cuprates

Research Supervision/Guidance

Program of Study		Completed	Ongoing
Research	Ph.D.	04	04
	PDF	-	01
	M.Phil.	23	-
Project	PG	30	02
	UG / Others	02	-

Publications

International		National		Others
Journals	Conferences	Journals	Conferences	Books / Chapters
86	31	01	68	01

Cumulative Impact Factor (as per JCR) : 231.25
h-index : 17
i10 index : 32
Total Citations : 949

Funded Research Projects

Completed Projects

S. No	Agency	Period		Project Title	Budget (Rs. In lakhs)
		From	To		
1	UGC-DAE Collaborative Research	2006	2010	Materials Design, Crystal growth and Characterization of Spin ladders	4.5
2	UGC	2007	2010	Synthesis, Crystal Growth & Characterization of pure & doped Sodium Cobaltates Na_xCoO_2	10.75
3	Higher Education Department, Government of Tamilnadu	2009	2015	Establishment of Centre for Nanoscience & Technology at Periyar University, Salem.	100.0
4	UGC	2011	2014	Synthesis of WO_3 and TiO_2 nanomaterials and fabrication of gas sensors	10.3
5	CSIR	2012	2015	Fabrication and characterization of nanohydroxyapatite-CNT composites for biomedical applications	18.42
6	Inter-University Accelerator Centre (IUAC)- New Delhi	2011	2014	Effect of irradiation on the metal oxide semiconducting nanostructures for biosensor applications	5.4

Ongoing Projects

S. No	Agency	Period		Project Title	Budget (Rs. In lakhs)
		From	To		
1	DST	2015	2018	Development of Nanostructured SnO_2 – Graphene Composite based biosensors for neurotransmitter sensing	48.0
2	UGC	2016	2018	Design and Development of Chemo-resistive Gas sensors for Breath Analysis	30.0

Distinctive Achievements / Awards

1. National Merit Scholarship - Govt. of India (1983-1990)
2. State Level Screening Test (SLET) in Physical Sciences (1990)
3. Junior Research Fellowship, DST-Govt. of India (Oct.'91-March'95)
4. Senior Research Fellowship (SRF), CSIR-Govt. of India (April'95-Oct.'97)
5. TN State Council for Science and Technology (Travel grant - 1997)
6. Council for Scientific and Industrial Research (Travel grant -1997)
7. Sir C.V. Raman Research Innovative Award-2009, Periyar University, Salem (2010)
8. Visiting Professor, Shizuoka University, Hamamatsu, Japan. (Sept.-Oct. 2012)
9. International Centre for Theoretical Physics (ICTP)-Italy (Travel grant-July 2015)

Events organized in leading roles

Position	Programme	Duration	Institution
Convener	University-Industry Interface meet-II	28 th April 2014	Industry Consultancy Cell & Centre for University Business Collaboration, Alagappa University
Convener	University-Industry Interface meet-I	24 th March 2014	Centre for University Business Collaboration & Industry Consultancy Cell,
Chairperson	National Conference on Recent Advances in Nanomaterials for Sensor Applications NANOSE-14	6 th to 7 th March 2014	Alagappa University, Karaikudi
Chairperson	National Conference on Recent Advances in Nanomaterials for Sensing Applications, NANOSE-12	March 8-9, 2012	Alagappa University, Karaikudi
Convener	National Conference on Recent Advances in Nanomaterials and Biosensors	March 3-4, 2011	Alagappa University, Karaikudi
Convener	Commemoration of International Year of Biodiversity (IYB-2010)	20 th Dec. 2010.	Alagappa University, Karaikudi
Convener	Workshop on Recent Advances in Physical Sciences Research	Sep.18-19, 2005	Alagappa University, Karaikudi
Chairperson	Workshop on Financial Management	22 nd Feb. 2012	Alagappa University/SEBI, Govt. of India
Convener	Workshop on Recent Developments in Photonic Materials Research	12.03.2009	Periyar University Salem
Organizer	Workshop on Nanomaterials Research	12.03.2009	Periyar University Salem
	National Conference on Recent	29-30 th Jan	Periyar University Salem

Organizer	advances in Vibrational Spectroscopy	2007	
Organizer	National Conference on Recent Advances in Materials Science	16-17 Feb, 2006	Periyar University Salem.
Organizer	Workshop on recent trends in Physical sciences research	29-30 Aug 2005	Department of Physics, Periyar University, Salem

Overseas Exposure / Visits

1. Japan-March 1997, Visit to NTT-BRL, NEC, Corporation, ISTECH-Tokyo, Toyashi University, Nagoya Institute of Technology
2. Singapore-March 1997
3. Canada- Montreal-March 1997, Electrochemical Society (ECS) meeting
4. Japan- NTT R&D Labs, Post Doctoral Fellowship (Three years 1997 - 2000)
5. USA-March 1999, APS meeting at Atlanta, Visit to MIT and ANL
6. France-May-June 2000, E-MRS meeting- Strasburg
7. Germany-June 2000, Invited talk at IFW- Dresden
8. Singapore-October 2000
9. Germany-Nov.2000 – March 2005, Job at IFW-Dresden
10. Italy-May 2003, ICTP Spring School
11. Switzerland-August 2004
12. France-Aug. 2004, ICCG14 at Grenoble
13. South Korea-November 2011, International Conference
14. Japan-September-October 2012, Visiting Professor, Shizuoka University
15. The Netherlands- November 2012, FEI Nanoport in Eindhoven
16. Italy – 2015, International Conference at ICTP-Trieste, Visit to University of Messina
17. China - December 2016-Signing MOUs –International Collaboration

Membership in

Professional Bodies

1. Life Member-Materials Research Society of India (MRSI)
2. Life Member-Crystal Growth Association of India

Academic Bodies (such as Board of Studies etc.)

1. Chairman-Board of Studies-M.Sc. Bioelectronics, Alagappa University, Karaikudi.
2. Member- Board of Studies- B.Sc. Electronics, Alagappa University, Karaikudi
3. Member-Board of Studies -M.Sc. (Electronics), Alagappa University, Karaikudi.
4. Chairman-BOS-M.Sc. Physics (Biosensors), Alagappa University, Karaikudi.
5. Chairman-BOS-M.Phil. (Electronics & Communic.), Alagappa University, Karaikudi.
6. Member, Patent Cell, Alagappa University, Karaikudi.
7. Member -Internal Quality Assurance Cell (IQAC), Alagappa University, Karaikudi

Resource persons in various capacities

Number of Invited / Special Lectures delivered: 68

Important Publications

No	Authors/Title of the paper/Journal Particulars	Impact Factor
1	N Lavanya, AC Anithaa, C Sekar , K Asokan, A Bonavita, N Donato Effect of gamma irradiation on structural, electrical and gas sensing properties of tungsten oxide nanoparticles (2017), <i>Journal of Alloys and Compounds</i> 693, 366-372.	3.014
2	A.C. Anithaa, K Asokan, C. Sekar Highly sensitive and selective serotonin sensor based on gamma ray irradiated tungsten trioxide nanoparticles, (2017) <i>Sensors and Actuators B: Chemical B</i> 238 (2017) 667–675.	4.758
3	Lavanya N , Sekar C , Murugan R , Ravi G An ultrasensitive electrochemical sensor for simultaneous determination of xanthine, hypoxanthine and uric acid based Co doped CeO ₂ nanoparticles, (2016) <i>Materials Science & Engineering C</i> 65, 278–286.	3.42
4	N. Lavanya, A.C. Anithaa, C. Sekar , K. Asokan, A. Bonavita, N. Donato, S. G. Leonardi, G. Neri Investigation of the effects of gamma-ray irradiation on gas sensing properties of SnO ₂ nanoparticles, (2016) <i>Nanotechnology</i> 27 (38) 385502.	3.573
5	N. Lavanya, E. Fazio, F. Neri, A. Bonavita, S.G Leonardi, G.Neri, C. Sekar Electrochemical sensor based on Mn-SnO ₂ nanoparticles modified GCE for simultaneous determination of ascorbic acid, uric acid and folic acid, (2016) <i>Journal of Electroanalytical Chemistry</i> 770, 23-32.	2.822
6	N. Lavanya, C. Sekar , S. Ficarra, E. Tellone, A. Bonavita, S. G. Leonardi, G. Neri A novel disposable electrochemical sensor for determination of carbamazepine based on Fe-SnO ₂ nanoparticles modified screen-printed carbon electrode (2016), <i>Materials Science and Engineering C</i> 62, 53-60.	3.42
7	N. Lavanya, E. Fazio, F. Neri, A. Bonavita, S.G Leonardi, G.Neri, C. Sekar Simultaneous electrochemical determination of epinephrine and uric acid in the presence of ascorbic acid using SnO ₂ /graphene modified GCE(2015), <i>Sensors and Actuators B: Chemical</i> 221, 1412-1422.	4.097
8	P. Kanchana, N. Sudhan, S.A.Kumar, J. Mathiyarasu, P. Manisankar, C. Sekar Electrochemical detection of mercury using biosynthesized hydroxyapatite nanoparticles modified glassy carbon electrodes without preconcentration, (2015) <i>RSC Advances</i> , 5, 68587.	3.85
9	A.C. Anithaa, N. Lavanya, K. Asokan, C. Sekar WO ₃ nanoparticles based direct electrochemical dopamine sensor in the presence of ascorbic acid, (2015), <i>Electrochimica Acta</i> , 167, 294.	4.086

10	Valentina Bisogni, Krzysztof Wohlfeld, Satoshi Nishimoto, Claude Monney, Jan Trinckauf, Kejin Zhou, Roberto Krau, Klaus Koepernik, C. Sekar , Vladimir Strocov, Bernd Buechner, Thorsten Schmitt, Jeroen van den Brink, Jochen Geck Orbital control of effective dimensionality: from spin-orbital fractionalization to confinement in the anisotropic ladder system CaCu ₂ O ₃ , (2015), <i>Physical Review Letters</i> 114, 096402	7.728
11	S. Radhakrishnan, K. Karthikeyan, J. Wilson, C. Sekar , S.J. Kim, A promising electrochemical sensing platform based on ternary composite of polyaniline-Fe ₂ O ₃ -reduced graphene oxide for sensitive hydroquinone determination, (2015), <i>Chemical Engineering Journal</i> 259, 594-602.	4.321
12	N. Lavanya, S. Radhakrishnan, N. Sudhan, C. Sekar , S.G Leonardi, G.Neri Fabrication of folic acid sensor based on the Cu doped SnO ₂ nanoparticles modified glassy carbon electrode, (2014) <i>Nanotechnology</i> , 25, 295501.	3.821
13	V. Bisogni, S. Kourtis, C. Monney, K. Zhou, R. Kraus, C. Sekar , V. Strocov, B. Buechner, J. van den Brink, L. Braicovich, T. Schmitt, M. Daghofer, J. Geck Femtosecond dynamics of momentum-dependent magnetic excitations from resonant inelastic X-Ray scattering in CaCu ₂ O ₃ , (2014), <i>Physical Review Letters</i> 112, 147401	7.728
14	S. Radhakrishnan, K. Krishnamoorthy C. Sekar , J. Wilson, S- J Kim A highly sensitive electrochemical sensor for nitrite detection based on Fe ₂ O ₃ nanoparticles decorated reduced graphene oxide nanosheets, (2014), <i>Applied Catalysis B: Environmental</i> , 22, 148-149.	7.435
15	P. Kanchana, N. Lavanya, C. Sekar Development of amperometric L-tyrosine sensor based on Fe-doped hydroxyapatite nanoparticles, (2014), <i>Mat. Sci. Eng. C</i> 35, 85.	3.42
16	N. Lavanya, S. Radhakrishnan, C. Sekar , M. Navaneethan, Y. Hayakawa Fabrication of Cr-SnO ₂ nanoparticles based biosensor for the selective determination of riboflavin in pharmaceuticals(2013) <i>Analyst</i> 138, 2061-2067.	4.107
17	N. Lavanya, S. Radhakrishnan, C. Sekar Fabrication of hydrogen peroxide biosensor based on Ni-SnO ₂ nanoparticles, (2012), <i>Biosensors and Bioelectronics</i> 36, 41.	7.47
18	Bella Lake, Alexei M. Tsveti, Susanne Notbohm, D. Alan Tennant, Toby G. Perring, Manfred Reehuis, C. Sekar , Gernot Krabbes, Bernd Büchner Confinement of fractional quantum number particles in a condensed-matter system (2010), <i>Nature Physics</i> 6(1), 50-55	20.15
19	C. Sekar , B. Schüpp, G. Krabbes, M. Wolf, D. Eckert, M. Knapp, K.-H. Müller Synthesis, Crystal Structure and Magnetic Properties of the Spin Ladder Compounds La ₂ (Cu _{1-x} Zn _x) ₂ O ₅ and La ₈ (Cu _{1-x} Zn _x) ₇ O ₁₉ (2005) <i>J. Solid State Chemistry</i> 178, 28	2.412
20	C. Sekar , C. Subramanian Purification and characterization of C ₆₀ , Nanotubes and their by-products (1996) <i>Vacuum</i> 47(11), 1289	1.858