Dr. C. SEKAR, Professor

Contact

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Academic Qualifications

Degree	Institution	Year	Branch	Class
Ph.D.	Crystal Growth Centre Anna University, Chennai.	1997	*Nanomaterials Science-Physics	Highly Commended
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

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

PDF /Visiting Professor: Abroad

Position	Institution	Duration
Scientist	Solid State Chem. Group IFW-Dresden, **Germany.**	30.11.2000 - 15.03.2005 (4 Years 4 Months)
Post Doctoral Fellow	Nippon Telegraph and Telephone (NTT) Corporation, **Japan.**	20.10.1997- 19.10.2000 (3 Years)
Visiting Professor	Research Institute of Electronics, Shizuoka University, **Japan**	01.09-2012-30.10.2012 (2 Months)
Visiting Researcher	Department of Engineering University of Messina, **Italy**	18.05.2019-17.07.2019 (2 Months)

Additional Responsibilities

No.	Position	University Bodies	Period	
			From	To
1	Member- Senate	Alagappa University	11.03.2010	Till date
2	Member -Standing Committee	Alagappa University	11.03.2010	Till date
3	Dean-Industrial Consultancy	Alagappa University	26.03.2012	18.07.2015
4	Member-Quality Assurance Cell	Alagappa University	16.03.2010	Till date
5	Director, Centre for International Relations	Alagappa University	08.03.2016	Till date
6	Dean-Research	Alagappa University	04.10.2018	22.05.2020
7	Special Officer (Planning and Development)	Alagappa University	23.05.2020	Till date
7	Coordinator-Centre for Nanotechnology	Periyar University, Salem.	22.05.2008	10.03.2010
8	Coordinator- Centre for Renewable Energy	Periyar University, Salem.	22.05.2008	10.03.2010

Areas of Research

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

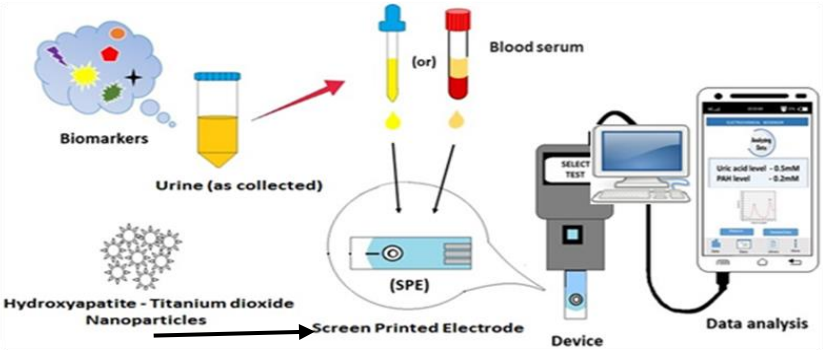
Patents Filed

1. ELECTROCHEMICAL DETECTION OF PARAAMINOHIPPURIC ACID AND URIC ACID BIOMARKERS

   Indian Patent Application No. 202041045571 dated 19.10.2020Inventors:

   Dr C. Sekar, Ms. S. Anitta, Dr N. Lavanya

   Field of Invention: The present disclosure broadly relates to the field of biomarker detection for clinical purpose and particularly refers to the electrochemical detection of Para-Aminohippuric acid (PAH) and Uric acid (UA) useful in the diagnosis of various hepatic and renal disorders.



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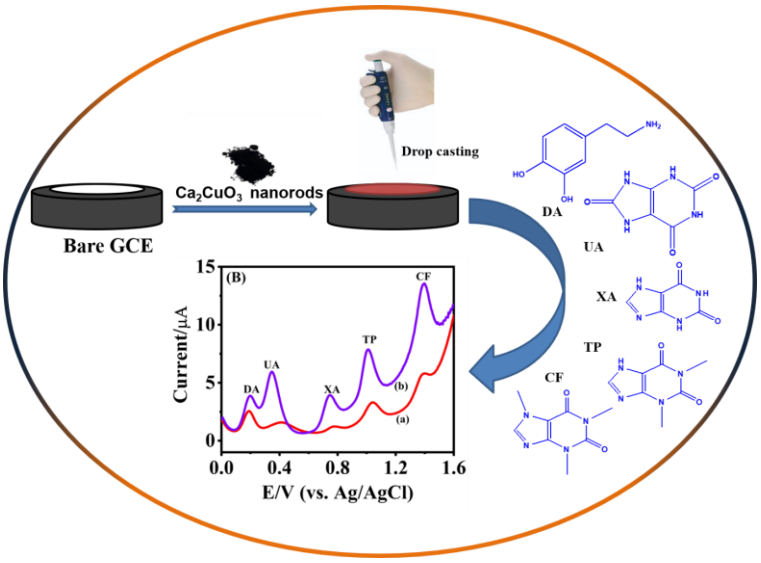
2. ELECTROCHEMICAL SENSOR FOR DETECTION OF BIOMOLECULES

   Indian Patent Application No. 202041050283 dated 18.11.2020

   Inventors: Dr C. Sekar, Mr. G. Veerpandi, Dr N. Lavanya

   Field of Invention: The present disclosure broadly relates to the field of electrochemical sensors and particularly refers to biosensors for electrochemical sensing of biomolecules.



Research Supervision/Guidance

Program of Study		Completed	Ongoing
Research	Ph.D.	11	8
	M.Phil.	23	-
Project	PG	55	4
	UG / Others	2	-
PDF/RA	PDF/CSIR-RA	2	1

Publications

International		National		Others
Journals	Conferences	Journals	Conferences	Books / Chapters
101	33	1	191	03

Cumulative Impact Factor (as per JCR) : 345.37

h-index : 28 (Google Scholar)

i10 index : 59

Total Citations : 2504

https://scholar.google.com/citations?user=qZET2msAAAAJ&hl=en

Funded Research Projects

S. No	Funding Agency	Duration	Project Title	Budget (Rs. In lakhs)
1	UGC-DAE Collaborative Research	2006-2010	Materials Design, Crystal growth and Characterization of Spin ladders	4.5
2	University Grants Commission	2007-2010	Synthesis, Crystal Growth & Characterizationof pure & doped Sodium Cobaltates Na_xCoO_2	10.75
3	Higher Education Department, Govt. of Tamilnadu	2009-2015	Establishment of Centre for Nanoscience & Technology at Periyar University, Salem.	100.0
4	University Grants Commission	2011-2014	Synthesis of WO_3 and TiO_2 nanomaterials and fabrication of gas sensors	10.3
5	Council for Scientific and Industrial Research (CSIR)	2012-2015	Fabrication and characterization of HAP-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

7	Department of Science and Technology (DST-SERB)	2015-2018	Development of SnO_2- Graphene Composite based biosensors for neurotransmitter sensing	48.0
8	University Grants Commission	2016-2018	Design and Development of Chemo-resistive Gas sensors for Breath Analysis	30.0
9	Alagappa University Research Fund(AURF)	2016-2018	Nanosensors for Medical Diagnostics	3.0
10	Council for Scientific and Industrial Research (CSIR)	2018-2021	Multiplexed Array of Electrodes for Electrochemical Determination of Cardiac Biomarkers	20.25
11	Department of Science & Technology (DST/TDT/DDP)- Tech. Development Program	2019-2022	Development of "Foliar Diagnostic Kit for On-Site Detection of Nitrogen and Moisture Status in Crops"	10.65
			Total amount Rs in Lakhs	261.27

Distinctive Achievements / Awards

- National Merit Loan Scholarship - Govt. of India (1983-1990)
- Junior Research Fellowship, DST-Govt. of India (Oct.'91-March'95)
- State Level Screening Test (SLET) in Physical Sciences (1990)
- Senior Research Fellowship (SRF), CSIR-Govt. of India (April'95-Oct.'97)
- TN State Council for Science and Technology (Travel grant - 1997)
- Council for Scientific and Industrial Research (Travel grant –1997)
- Sir C.V. Raman Research Innovative Award-2009, Periyar University, Salem
- Visiting Professor, Shizuoka University, Hamamatsu, Japan. (Sept.-Oct. 2012)
- International Centre for Theoretical Physics (ICTP)-Italy (Travel grant- 2015)
- Alagappa Excellence Award for Research (2016-17)
- SERB-DST, Govt. of India (International Travel Support – May 2017)
- Best Poster Award –International Conference on Environmental Medicine, 10-11th December 2017, Kaohsiung Medical University, Taiwan.
- Visiting Researcher, University of Messina, Italy (May-July 2019)
- International Centre for Theoretical Physics (ICTP)-Italy (Special grant- 2019)
- ISPA Dr. S. Gunasekaran Award-2020, Indian Spectrophysics Association.
- ANVESHN-National Research Convention-Aossoication of Indian Universities-2020, First Prize in Health Science and Applied Subjects, Pharmacy, & Nutrition.

Events organized in leading roles

Position	Programme	Duration	Institution
Convener	National Workshop on Advanced Nanomaterials for Sustainable Energy and Sensors Applications	04-06th March 2020	Alagappa University, Karaikudi
Convener	International Conference Nanomaterials Driven Advances in Chemical and BioSensors	27-29th November 2019	Alagappa University, Karaikudi
Convener	Workshop on Nano-Bio-Sensors: Present Status and Future Perspectives	08-09th March 2018	Alagappa University, Karaikudi
Convener	Workshop on Biosensors in Agricultural, Environmental and Medical Sciences	13th March 2017	Alagappa University, Karaikudi
Convener	Conference on Exploring Commercialization of Biosensors	14th March 2017	Alagappa University, Karaikudi
Co-Convener	International Conference on Frontier Areas in Chemical Technologies (FACTs - 2016)	21st -23rd March 2016	Alagappa University, Karaikudi
Convener	World Water Day	24th March '15	Alagappa University
Convener	Workshop on Electrochemical Instruments for Energy and Corrosion Applications	16th February 2015	Alagappa University, Karaikudi
Convener	University-Industry Interface meet-II	28th April 2014	Industry Consultancy Cell, Alagappa Univ.
Convener	University-Industry Interface Meet-I	24th March 2014	Industry Consultancy Cell, Alagappa Univ.
Chairperson	National Conference on Recent Advances in Nanomaterials for Sensor Applications	06-07th March 2014	Alagappa University, Karaikudi
Chairperson	National Conference on Recent Advances in Nanomaterials for Sensor Applications	08-09th March 2012	Alagappa University, Karaikudi
Convener	National Conference on Recent Advances in in Biosensors	03-04th March, 2011	Alagappa University, Karaikudi
Convener	Commemoration of Intl. Year of Biodiversity (IYB-2010)	20th Dec. 2010.	Alagappa University, Karaikudi
Convener	Workshop on Recent Advances in Physical Sciences Research	18-19th Sept. 2005	Alagappa University, Karaikudi
Chairperson	Workshop on Financial Management	22nd Feb. 2012	Alagappa University SEBI, Govt. of India
Convener	Workshop on Photonic Materials Research	12th March 2009	Periyar University Salem
Organizer	National Conference on Recent Advances in Vibrational Spectroscopy	29-30th Jan 2007	Periyar University Salem
Organizer	National Conference on Recent Advances in Materials Science	16-17th Feb, 2006	Periyar University Salem.

Overseas Visits

1. Japan-March 1997, Visit to NTT-BRL, NEC, Corporation, ISTEC-Tokyo, Toyashi University, Nagoya Institute of Technology
2. Singapore-March 1997
3. Canada- 191st Electrochemical Society (ECS) meeting-Montreal, 4-9 May 1997.
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-Spring School, Intl. Centre for Theoretical Physics,19-28th May2003 Trieste.
11. Switzerland-August 2004
12. France-14th Intl. Conference on Crystal Growth, 9-13th August 2004, 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, & University of Messina
17. China - December 2016-Signing MOUs –International Collaboration
18. China-Visit to Tangshan Polytechnic College, Collaboration, December 2017
19. Singapore-International Conference, December 2017.
20. USA- 233rd Electrochemical Society (ECS) meeting, Seattle-WA, May, 2018
21. Malaysia – BU and OUM Institutional Collaboration – 28-29th January 2019
22. Singapore –LEAP - Nanyang Technological University, 17-24th February 2019
23. China-TPC and Tianjin University, Collaborative Research, April 2019
24. Singapore - Nanyang Technological Univ. & Alagappa Association, April 2019
25. Italy-University of Messina, Visiting Researcher, 18th May 2019-17th July 2019
26. Sri Lanka –Sri Lanka Technology Campus-Collaboration, 16-17th Oct. 2019

Membership

Professional Bodies

- Life Member-Materials Research Society of India (MRSI)
- Life Member-Crystal Growth Association of India
- Electrochemical Society-USA
- Member-Biosensor Society of India

Academic Bodies (such as Board of Studies etc.,)

1. Chairman-Board of Studies-M.Sc. Bioelectronics, Alagappa University
2. Member- Board of Studies- B.Sc. Electronics, Alagappa University
3. Member-Board of Studies -M.Sc. Electronics, Alagappa University
4. Chairman-BOS-M.Sc. Physics (Biosensors), Alagappa University
5. Chairman-BOS-M.Phil. (Electronics & Commun.), Alagappa University
6. Member-Patent Cell, Alagappa University.

Ph.D. Thesis Guided

No.	Name of the Scholar	Title of the Thesis	Year of Completion
1	Dr. R. Parimaladevi	Effect of additives on growth and properties of glycine family crystals	April 2010
2	Dr. V. Balasubramanian	Evolution of different types of low cost and low consumption device for solar thermal and photovoltaic appications	March 2011
3	Dr. P. Kanchana	Influence of additives on the Crystallization and Properties of Calcium Phosphate and Cholestrol	August 2011
4	Dr. S. Paulraj	Studies on the synthesis crystal growth and physical properties of Na_xCoO_2 and Fe-As based compounds	July 2012
5	Dr. M.Parthibavarman	Influence of dopants (Cu,Co,Cd) on structural, optical and gas sensing behavior of nano SnO_2 by soft chemical route	February 2013
6	Dr.K. Suguna	Investigation on the Effect of trace elements on Crystallisation and Properties of Brushite and Struvite Crystals	August 2013
7	Dr. M. Thenmozhi	Studies on the effect of trace elements on crystallization, structural and spectral properties of urinary stones: an experimental and theoritical approach	March 2013
8	Dr. A. Elakkina Kumaran	Effect of amino acid and metal ion impurities on the growth and properties of potassium hydrogen phthalate (KAP) Crystals	October 2013
9	Dr. N. Lavanya	Investigation of Nanostructured SnO_2 for Innovative Electrochemical and Gas Sensing Applications.	April 2017
10	Dr. N. Sudhan	Develoment of Calcium Phosphates based Biosensors for Medical and Environmental Applications	January 2019
11	Dr. AC. Anithaa	Engineered Tungsten oxide Nanostructures based Electrochemical Sensors for Neuropharmacological Applications	March 2019

List of Research Articles

No.	Authors/Title of the paper/Journal	Impact Factor
1.	Temperature modulated Cu-MOF based gas sensor with dual selectivity to acetone and NO_2 at low operating temperatures C. Arul, K .Moulaee, N. Donato, D. Iannazzo, N. Lavanya , G. Neri, C. Sekar Sensors and Actuators B: Chemical (2020)	**7.1**
2.	Reddy, S. Lkeswara, C. Arul, Liu Zhaoqi, N. Lavanya, and **C. Sekar**. A novel electrochemical sensor based on Fe-doped MgNi2O3 nanoparticles for simultaneous determination of dopamine, uric acid, nicotine and caffeine over very wide linear ranges. *Journal of Electroanalytical Chemistry* (2020): 114648.	3.807
3.	Lavanya, N., G. Veerapandi, S. G. Leonardi, N. Donato, G. Neri, and **C. Sekar**. Fast and selective detection of volatile organic compounds using a novel pseudo spin-ladder compound CaCu 2 O 3. *Materials Advances* (2020) **1**, 2368 – 2379	RSC-IF Pending
4.	Nehru, Lavanya, **Sekar Chinnathambi**, Enza Fazio, Fortunato Neri, Salvatore Gianluca Leonardi, Anna Bonavita, and Giovanni Neri. Electrochemical Sensing of Serotonin by a Modified MnO2-Graphene Electrode. *Biosensors* 10, no. 4 (2020): 33.	3.240
5.	Lavanya, N., S. G. Leonardi, S. Marini, C. Espro, M. Kanagaraj, S. Lokeswara Reddy, **C. Sekar**, and G. Neri $MgNi_2O_3$ nanoparticles as novel and versatile sensing material for non-enzymatic electrochemical sensing of glucose and conductometric determination of acetone Journal of Alloys and Compounds, 152787	4.650
6.	AC Anithaa, K Asokan, N Lavanya, **C Sekar** Nicotinamide adenine dinucleotide immobilized tungsten trioxide nanoparticles for simultaneous sensing of norepinephrine, melatonin and nicotine *Biosensors and Bioelectronics 143 (2019) 111598*	10.257
7.	N Sudhan, N Lavanya, SG Leonardi, G Neri, **C Sekar** Monitoring of Chemical Risk Factors for Sudden Infant Death Syndrome (SIDS) by Hydroxyapatite-Graphene-MWCNT Composite-Based Sensors, *Sensors* 19 (2019) 3437	3.275
8.	N. Lavanya, **C. Sekar** SnO_2-SnS_2 nanocomposite as electrocatalyst for simultaneous determination of depression biomarkers serotonin and tryptophan, *Journal of Electroanalytical Chemistry* 840 (2019)1-9.	3.807
9.	P. Kanchana, N. Sudhan, **C. Sekar**, G. Neri Manganese Doped Hydroxyapatite Nanoparticles Based Enzyme-Less Electrochemical Sensor for Detecting Hydroquinone, *Journal of Nanoscience and Nanotechnology* 19 (2019) 2034–2043	1.354
10.	NS Palani, NS Kavitha, KS Venkatesh, K Ashok Kumar, V Thirumal, A Pandurangan, **C Sekar**, R Ilangovan Effect of NiO/$Ni(OH)_2$ nanostructures in graphene/CNT nanocomposites on their interfacial charge transport kinetics for high-performance supercapacitors *Journal of Solid State Electrochemistry* 22 (2018) 1-15	2.646
11.	N. Lavanya, JN Claude, **C. Sekar** Electrochemical determination of purine and pyrimidine bases using copper doped CeO2 nanoparticles, *J.of Colloid & Interface Science* 530 (2018) 202-211	7.489

12.	E Fazio, S Spadaro, M Bonsignore, N Lavanya, **C Sekar**, SG Leonardi, G Neri, F Neri Molybdenum oxide nanoparticles for the sensitive and selective detection of dopamine *J. Electroanalytical Chemistry* 814 (2018) 91-96	3.807
13.	N Lavanya, SG Leonardi, **C Sekar**, S Ficarra, A Galtieri, E Tellone, G Neri Detection of Catecholamine Neurotransmitters by Nanostructured SnO_2-Based Electrochemical Sensors: A Review of Recent Progress *Mini-Reviews in Organic Chemistry* 15 (2018) 382-388	1.824
14.	M Kanagaraj, PS Kumar, SC Peter, **C Sekar**, HA Therese Structural Confinement Assisted a Robust Superparamagnetic State in $MgNi_2O_3$ and $MgNi_{1.5}Co_{0.5}O_3$ Nanoparticles at Room Temperature *Journal of Superconductivity and Novel Magnetism* 31 (11) (2018) 3777-3785	1.244
15.	IP Kokila, M Kanagaraj, PS Kumar, SC Peter, **C Sekar**, HA Therese Structural, magnetic and magnetocaloric properties of $EuMnO_3$ perovskite manganite: A comprehensive MCE study *Materials Research Express* 5 (2) (2018) 026107	1.929
16.	A.C. Anithaa , K. Asokan , **C. Sekar** Low energy nitrogen ion beam implanted tungsten trioxide thin films modified indium tin oxide electrode based acetylcholine sensor *Journal of the Taiwan Institute of Chemical Engineers* 84 (2018)11-18	4.794
17.	Ponnusamy Kanchanaa, Mani Navaneethanb, **Chinnathambi Sekar** Fabrication of Ce doped hydroxyapatite nanoparticles based non-enzymatic electrochemical sensor for the simultaneous determination of norepinephrine, uric acid and tyrosine, *Materials Science & Engineering B* 226 (2017) 132–140	4.706
18.	N. Lavanya, **C. Sekar** Electrochemical sensor for simultaneous determination of epinephrine and norepinephrine based on cetyltrimethylammonium bromide assisted SnO2 nanoparticles, *Journal of Electroanalytical Chemistry* 801 (2017) 503-510	3.807
19.	A.C. Anithaa, K Asokan , **C. Sekar** Swift heavy nickel ion irradiated ethylene diamine tetra acetic acid-assisted tungsten trioxide thin film for the electrocatalytic detection of guanine *Sensors and Actuators B: Chemical* 247 (2017) 814-822	7.100
20.	N. Sudhan, C. Manikkaraja, V. Balasubramanian, G. Archunan, **C. Sekar** Electrochemical detection of estrus specific phenolic compound p-cresol to assess the reproductive phase of certain farm animals *Biochemical Engineering Journal* 126 (2017) 78-85	3.475
21.	N Lavanya, **C Sekar**, E. Fazio, F. Neri, S.G Leonardi, G.Neri Electrochemical detection of estrus specific phenolic compound p-cresol to assess the reproductive phase of certain farm animals *International Journal of Hydrogen Energy* 42 (15) (2017) 10645-10655	4.939
22.	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 *Journal of Alloys and Compounds* 693 (2016) 366-372	4.650
23.	A.C. Anithaa, K Asokan , **C. Sekar** Highly sensitive and selective serotonin sensor based on gamma rayirradiated tungsten trioxide nanoparticles, *Sensors and Actuators B: Chem. B* 238 (2017) 667	7.100

24.	AC Anithaa, K Asokan, **C Sekar** Voltammetric determination of epinephrine and xanthine based on sodium dodecyl sulphate assisted tungsten trioxide nanoparticles *Electrochimica Acta* 237 (2017) 44-53	6.215
25.	N. Lavanya and **C. Sekar** Highly sensitive electrochemical sensor for simultaneous determination of dihydroxy benzene isomers based on Co doped SnO2 nanoparticles *RSC Advances* 6 (2016) 68211 – 68219	3.119
26.	Lavanya N, **Sekar C**, Murugan R, Ravi G An ultrasensitive electrochemical sensor for simultaneous determination of xanthine, hypoxanthine and uric acid based on Co doped CeO_2 nanoparticles *Materials Science &Engineering C* 65 (2016) 278–286	5.880
27.	N. Lavanya, A.C. Anithaa, **C. Sekar**, K. Asokan, N. Donato, S. G. Leonardi, G. Neri Investigations on the effect of gamma-ray irradiation on the gas sensing properties of SnO_2 nanoparticles, *Nanotechnology* 27 (38) (2016) 385502	3.551
28.	N. Lavanya, E. Fazio, F. Neri, A. Bonavita, S.G Leonardi, G. Neri, **C. Sekar** Electrochemical sensor for simultaneous determination of ascorbic acid, uric acid and folic acid based on Mn-SnO_2 nanoparticles modified glassy carbon electrode *J. Electroanalytical Chemistry* 770 (2016) 23-32	3.807
29.	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 3 screen-printed carbon electrode *Mater. Sci. Eng. C* 62 (2016) 53-60	5.880
30.	N. Lavanya, E. Fazio, F. Neri, A. Bonavita, S.G Leonardi, G.Neri, **C. Sekar** Simultaneous electrochemical determination of epinephrine and uricacid in the presence of ascorbic acid using SnO_2/grapheme nanocomposite modified GCE *Sensors and Actuators B: Chemical* 221 (2015) 1412-1422	7.100
31.	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 *RSC Advances* 5 (2015) 68587	3.119
32.	N. Lavanya, N. Sudhan, P. Kanchana, S. Radhakrishnan, **C. Sekar** A new strategy for simultaneous determination of 4-aminophenol, uric acid and nitrite based on agraphene/HAP composite modified glassy carbon electrode *RSC Advances* 5 (2015) 52703-52709	3.119
33.	P. Kanchana, S. Radhakrishnan, M. Arivanandhan, M. Navaneethan, Y. Hayakawa, **C. Sekar** Electrochemical Sensor Based on Fe-doped Hydroxyapatite-Carbon Nanotubes Composite for L-Dopa Detection in the Presence of Uric Acid *Journal of Nanoscience and Technology* 15 (2015)0 1-8.	1.354
34.	A.C. Anithaa, N. Lavanya, K. Asokan, **C. Sekar** WO_3 nanoparticles based direct electrochemical dopamine sensor in the presence of ascorbic acid, *Electrochim. Acta* 167 (2015) 294	6.215
35.	Valentina Bisogni, Krzysztof Wohlfeld, Satoshi Nishimoto, Claude Monney, Jan Trinckauf, Kejin Zhou, Roberto Krau, Klaus Koepernik, **Chinnathambi Sekar**, Vladimir Strocov, Bernd Buechner, Thorsten Schmitt, Jeroen van den Brink, and Jochen Geck Orbital Control of Effective Dimensionality: From Spin-Orbital Fractionalization to Confinement in the Anisotropic Ladder System CaCu2O3 *Physical Review Letters* 114 (2015) 096402	9.200

36.	Gnanasekaran JebaMercy, Udayakumar Prithika, Nehru Lavanya, **Chinnathambi Sekar**, Krishnaswamy Balamurugan Changes in Caenorhabditis elegans immunity and Staphylococcal virulence factors during their interactions, *Gene* 558 (2015) 159–172	2.984
37.	R. Senthilkumar, G. Ravi , **C. Sekar**, M. Arivanandhan, M. Navaneethan Y. Hayakawa Determination of gas sensing properties of thermally evaporated WO3 nanostructures, J *Mater Sci: Mater Electron*. 26 (2015) 1389	2.220
38.	S. Radhakrishnan, K. Karthikeyan, J. Wilson, **C. Sekar**, S.J. Kim, A promising electrochemical sensing platform based on ternary composite of polyaniline–Fe2O3–reduced graphene oxide for sensitive hydroquinone determination. *Chemical Engineering Journal* 259 (2015) 594-602.	10.652
39.	P. Kanchana, **C. Sekar** Development of electrochemical folic acid sensor based on hydroxyapatite NPs *Spectrochim. Acta Part A* 137(2015) 58-65	3.232
40.	P. Kanchana, **C. Sekar** EDTA assisted synthesis of hydroxyapatite nanoparticles for electrochemical sensing of uric acid, *Mat. Sci. Eng. C* 42 (2014) 601	5.880
41.	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, *Nanotechnology*, 25 (2014) 295501	3.551
42.	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 CaCu2O3 *Physical Review Letters* 112 (2014) 147401	9.200
43.	P. Muthukumaran, C. Sumathi, J. Wilson, **C. Sekar**, S. G. Leonardi, G. Neri Fe2O3/CNT-Based Resistive Sensors for the Selective Ammonia Gas Sensing *Sensor Lett*.12 (2014) 1	0.6
44.	S. Radhakrishnan, K. Krishnamoorthy, **C. Sekar**, J. Wilson, S- J Kim A highly sensitive electrochemical sensor for nitrite detection basedon Fe2O3nanoparticles decorated reduced graphene oxide nanosheets *Applied Catalysis B: Environmental*, 148-149 (2014) 22	16.683
45.	P. Kanchana, N. Lavanya, **C. Sekar** Development of amperometric L-tyrosine sensor based on Fe-hydroxyapatite nanoparticles, *Mat. Sci. Eng. C* 35 (2014) 85	5.880
46.	P. Kanchana, A. Elakkina Kumaran, **C. Sekar**, Effect of divalent metal ion impurities (Ba2+, Ca2+ and Mg2+) on the growth, structural and physical properties of KAP crystals *Spectrochim. Acta Part A* 103 (2013) 187	3.232
47.	P. Kanchana, A. Elakkina Kumaran, **C. Sekar**, Effect of trivalent metal ion impurities (Al3+, Cr3+ and Fe3+) on the growth, structural and physical properties of potassium acid phthalate (KAP) crystals, *Spectrochim. Acta Part A* 112 (2013) 21	3.232
48.	N. Lavanya, S. Radhakrishnan, **C. Sekar**, M. Navaneethan, Y. Hayakawa Fabrication of Cr doped SnO2 nanoparticles based biosensor for the selective determination of riboflavinin pharmaceuticals. *Analyst* 138 (2013) 2061-2067	3.978

49.	N. Lavanya, S. Radhakrishnan, **C. Sekar** Fabricationofhydrogenperoxidebiosensorbasedon Ni dopedSnO2 nanoparticles *Biosensors and Bioelectronics* 36 (2012) 41	10.257
50.	A. Elakkina Kumaran, P. Kanchana, **C. Sekar** Effect of amino acid additives on the growth and physical properties of potassium acid phthalate (KAP) crystals, *Spectrochimica Acta Part A* 91 (2012) 370	3.232
51.	P. Kanchana, **C. Sekar** Effect of Mg on the Mechanical and Bioactive Properties of Biphasic Calcium Phosphate *Journal of Minerals and Materials Characterization and Engg*. 11 (2012) 982	1.65
52.	K. Suguna, M. Thenmozhi, **C. Sekar** Growth, spectral, structural and mechanical properties of struvite crystal grown in presence of sodium fluoride, *Bulletin of Materials Science* 35 (2012) 701	1.392
53.	R. Thiyagarajan, N. Manivannan, S. Arumugam, S. Esakki Muthu, N.R. Tamilselvan, **C. Sekar**, H. Yoshino, K. Murata, M.O. Apostu, R. Suryanarayanan, A. Revcolevschi Pressure-induced colossal piezoresistance effect and the collapse of the polaronic state in the bilayer manganite $La_{0.4}Pr_{0.6/1:2}Sr_{1:8}Mn_2O_7$ *J. Phys: Condens. Matter* 24 (2012) 136002	2.707
54.	**C. Sekar**, S. Paulraj, P. Kanchana, B. Schüpp, R. Klingeler, G. Krabbes, B. Büchner Effect of rotation of feed and seed rods on the quality of $Na_{0.75}CoO_2$ single crystal grown by travelling solvent floating zone method *Mater. Res. Bulletin* 46 (2011) 675	4.019
55.	V. Hariharan, M. Parthibavarman, S. Radhakrishnan, **C. Sekar** Synthesis of polyethylene glycol (PEG) assisted tungsten oxide (WO3) nanoparticles for l-dopa bio-sensing applications *Talanta* 85 (2011) 2166	5.339
56.	**C. Sekar**, S. Paulraj, G. Krabbes, B. Büchner, S. Arumugam Synthesis, structural and magnetic properties of spin ladder compound Ca1-xCoxCu2O3 *J. Magnetism and Magnetic Materials* 323 (2011) 3033	2.717
57.	M. Thenmozhi, K. Suguna, **C. Sekar** Influence of sodium fluoride (NaF) on the crystallization and spectral properties of l-tyrosine, *Spectrochimica Acta Part A* 84 (2011) 37	3.232
58.	V. Hariharan, M. Parthibavarman, **C. Sekar** Synthesis of tungsten oxide ($W_{18}O_{49}$) nanosheets utilizing EDTA salt by microwave irradiation method *J. Alloys and Compounds* 509 (2011) 4788	4.650
59.	M. Parthibavarman, V. Hariharan, **C. Sekar** High-sensitivity humidity sensor based on SnO_2 nanoparticles synthesized by microwave irradiation method *Materials Science and Engineering C* 31 (2011) 840	5.880
60.	P. Kanchana, **C. Sekar** Effect of fluoride on the crystallization and spectral properties of cholesterol Indian *J. Pure & Applied Physics* 49 (2011) 539	0.653
61.	K. Suguna, C. Sekar Effect of H_3PO_4 reactant and NaF additive on the crystallization and properties of brushite, Advanced Materials Letters 2(3) (2011) 227	1.150

62.	K. Suguna, **C. Sekar** Role of Strontium on the Crystallization of Calcium Hydrogen Phosphate Dihydrate *Journal of Minerals and Materials Characterization and Engg*.10 (2011) 625	1.65
63.	Bella Lake, Alexei M. Tsveli, Susanne Notbohm, D. Alan Tennant, Toby G. Perring, Manfred Reehuis, **C. Sekar**, Gernot Krabbes, Bernd Büchner Confinement of fractional quantum numberparticles in a condensed-matter system, *Nature Physics* 6(1) (2010) 50-55	21.5
64.	P. Kanchana, **C. Sekar** Influence of strontium on the synthesis and surface properties ofbiphasic calcium phosphate (BCP) bioceramics, *J. Applied Biomaterials & Biomechanics* 8 (2010) 153	1.160
65.	P. Kanchana, **C. Sekar** Influence of sodium fluoride on the synthesis of hydroxyapatite by gel method *J. Crystal Growth* 312 (2010) 808	1.632
66.	R. Parimaladevi, **C. Sekar** Crystal growth and spectral studies of nonlinear optical -glycine single crystal grown from phosphoric acid *Spectrochimica Acta Part A* 76(5) (2010) 490	3.232
67.	R. Parimaladevi, **C. Sekar**, V. Krishnakumar Growth, spectral studies, thermal and dielectric aspects of l-lysine doped triglycine sulpho phosphate (TGSP) crystals *Spectrochimica Acta Part A* 74(1) (2009) 248	3.232
68.	R. Parimaladevi, **C. Sekar**, V. Krishnakumar The effect of nitric acid (HNO3) on growth, spectral, thermal and dielectric properties of triglycine sulphate (TGS) crystal *Spectrochimica Acta* 75(2) (2010) 617	3.232
69.	M. Parthibavarman, V. Hariharan, **C. Sekar**, V.N. Singh Effect of copper on structural, optical and electrochemical properties of SnO_2 NPs *J. Optoelectronics and Advanced Materials* Vol. 12(9) (2010) 1894	0.631
70.	K. Mydeen, S. Arumugam, P. Mandal, **C. Sekar**, G. Krabbes, C.Q.Lin Pressure-induced spin reorientation in $La_{1.2}Sr_{1.8}Mn_{1-y}Ru_yO_7$ y=0 and 0.075 single crystals, *J. Appl. Phys*. 106 (2009) 103208	2.286
71.	**C. Sekar**, P. Kanchana, R. Nithyaselvi, E.K. Girija Effect of fluorides (KF- NaF) on the growth of dicalcium phosphate dihydrate(DCPD) *Mater. Chem. Phys*.115 (2009) 21	3.408
72.	**C. Sekar**, R. Parimaladevi Effect of silver nitrate ($AgNO_3$) on the growth, optical, spectral, thermal and mechanical properties of γ-glycine single crystal, *J. Optoelectronics and Biomedical Materials* 1(2) (2009) 215	
73.	**C. Sekar**, R. Parimaladevi Effect of KCl addition on crystal growth and spectral properties of glycine single crystals, *Spectrochimica Acta Part A* 74 (2009) 1160	3.232
74.	K. G. Lisunov, N. Wizent, A. Waske, J.Werner, N.Tristan, **C. Sekar**, G.Krabbes, G. Behr, E. Arushanov, B. Büchner Quasi-one-dimensional hopping conductivity of the spin-ladder $CaCu_2O_3$ single crystals: Influence of the cation and oxygen non-stoichiometry J. Appl. Phys. 103 (2008) 123712	2.286

75.	C. Hess, H. El Haes, B. Buechner, **C. Sekar**, G. Krabbes, F. Heidrich- Meisner, W. Brenig Magnetic heat conductivity in CaCu2O3: linear temperature dependence, *Phys. Rev. Lett.* 98 (2007) 027201	9.200
76.	V. Kataev, U. Schaufu, M. Goiran, R. Klingeler, **C. Sekar**, G. Krabbes, N. Tristan, A. Waske, C. Heß, S.-L. Drechsler, B. Büchner The low-dimensional spin magnet CaCu2O3 probed by high-field ESR *J. Magnetism and Magnetic Materials* 310 (2007) 1251	2.717
77.	T. Kroll, A.A. Aligia, M. Knupfer, J. Geck, C. Hess, T. Schwieger, G. Krabbes, **C. Sekar**, D.R. Batchelor, H. Berger Spectroscopic investigations on layered sodium cobaltates *Physica C: Superconductivity* 460-462 (2007) 487	1.241
78.	T. Kroll, M. Knuepfer, J. Geck, C. Hess, T. Schwieger, G. Krabbes**, C. Sekar**, D. R. Batchelor, H. Berger, J. Fink, B. Buechner X-ray absorption spectroscopy on layered cobaltates NaxCoO2 *Phys. Rev. B* 74 (2006) 115123	3.575
79.	R. Rueckamp, E Benckiser, M W Haverkort, H Roth, T. Lorenz, A. Freimuth, L. Jongen, A. Moller, G. Meyer, P. Reuter, B. Buechner, A. Revcolevschi, S-W. Cheong, **C. Sekar**, G. Krabbes, M. Grueninger Optical study of orbital excitations in transition-metal oxides *New Journal of Physics* 7 (2005) 144	3.539
80.	**C. Sekar**, G. Krabbes, A. Teresiak, D. Eckert, M. Wolf, K. -H. Müller Single-crystal growth of pure and Zn-doped $CaCu_2O_3$ by TSFZ method *J. Crystal Growth* 275 (2005) 1961	1.632
81.	M.Wolf, K.-H. Müller, S.-L. Drechsler, H. Rosner,**C. Sekar**,G. Krabbes Magnetism in the pseudo-two-leg ladder compound $CaCu_2O_3$ *J. Magnetism and Magnetic Materials* 290-291 (2005) 314	2.717
82.	**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 $La_2(Cu1\_xZnx)_2O_5$ and $La_8(Cu1\_xZnx)_7O_{19}$ *J. Solid State Chemistry 178 (2005) 28*	2.726
83.	**C. Sekar**, G. Krabbes, A. Teresiak Effect of Zn doping on crystal growth and structure of the pseudo-ladder $CaCu_2O_3$ *J. Crystal Growth 273(2005) 403*	1.632
84.	B. Schüpp-Niewa, **C. Sekar**, G. Krabbes, M. Knapp Crystal Structure Investigations and Thermal Behavior of the Five-Leg Spin Ladder Compound $La_8Cu_7O_{19}$ *Zeitschrift fuer Anorganische und Allgemeine Chemie* 630 (2004) 663	1.179
85.	K. -H. Müller, **C. Sekar**, D. Eckert, B. Schüpp, M. Wolf, G. Krabbes Magnetic properties of the ladder compounds $La_2(Cu,Zn)_2O_5$ and $La_8(Cu,Zn)_7O_{19}$ *J. Magnetism and Magnetic Materials* 272-276 (2004) 882	2.717
86.	T. K. Kim, H. Rosner, S.-L. Drechsler, Z. Hu, **C. Sekar**, G. Krabbes, J. Málek, M. Knupfer, J. Fink, H. Eschrig Unusual electronic structure of the pseudoladder compound $CaCu_2O_3$ *Phys. Rev. B* 6 (2003) 024516	3.575
87.	**C. Sekar**, K. Ruck, A. Teresiak, G. Krabbes, T. Watanabe Crystal growth of spin-ladder compound La2Cu2O5 and ladder-like compound $CaCu_2O_3$, *Physica C: Superconductivity* 378-381 (2002) 678	1.241

88.	**C. Sekar**, T. Watanabe, A. Matsuda, H. Shibata, Y. Zenitani, J. Akimitsu Crystal Growth, Structure, and Transport Properties of the Five-Leg Spin Ladder Compound $La_8Cu_7O_{19}$ *J. Solid State Chem.* 156 (2001) 422	2.726
89.	**C. Sekar**, T. Watanabe, A. Matsuda, H. Shibata, Y. Zenitani, J. Akimitsu Effect of silver addition on structure and electrical properties of the spin ladder compound La2Cu2O5 single crystals *J. Crystal Growth* 233 (2001) 466	1.632
90.	T. Watanabe, **C. Sekar**, T. Fujii, A. Matsuda, Y. Zenitani, J. Akimitsu Novel approaches to crystallize materials with narrow liquidus lines: application to spin ladder compound La4+4nCu8+2nO14+8n (n=2,3) and high-Tc cuprate Bi-2223 *J. Crystal Growth* 229 (2001) 316	1.632
91.	T. Watanabe, **C. Sekar**, A. Matsuda, H. Shibata, Y. Zenitani, J. Akimitsu Crystal growth and transport properties of spin ladders $La_{4+4n}Cu_{8+2n}O_{14+8n}$(n =2,3) *Physica C: Superconductivity* 357-360 (2001) 380	1.241
92.	**C. Sekar**, T. Watanabe, A. Matsuda, H. Shibata, Y. Zenitani, J. Akimitsu Crystal growth and transport properties of 4-leg spin-ladder compound La Cu O : occurrence of insulator–metal transition *Intl. J. Inorg. Mat.* 3 (2001) 1201	1.198
93.	**C. Sekar**, T. Watanabe, A. Matsuda Crystal growth and characterization of the 4-leg spin ladder compound La2Cu2O5 *J. Crystal Growth* 212 (2000) 142	1.632
94.	S. Pandi, D. Jayaraman**, C. Sekar**, C. Subramanian Nucleation kinetics of C_{70}, *Fullerene Sci. and Tech.* 6(2) (1998) 309	1.648
95.	S. Pandi, **C. Sekar**, S. Chenthamarai, D. Jayaraman, C. Subramanian Heterogeneous nucleation of C_{60} in PVT technique *J. Mat. Sci. Lett.* 16 (1997) 1864	2.015
96.	**C. Sekar**, A. Thamizhavel, C. Subramanian Effect of degradation on surface and mechanical properties of C_{60} and C_{60}/C_{70} single crystals *Physica C: Superconductivity* 275 (1997) 193	1.241
97.	**C. Sekar**, C. Subramanian Purification and characterization of Buckminsterfullerene, Nanotubes and their by-products, *Vacuum* 47(11) (1996) 1289	2.906
98.	**C. Sekar**, R. Dhanasekaran, C.R.V. Rao, C. Subramanian Effect of molecular rotation on vapor phase nucleation: Fullerenes C_{60} and C_{70} *Fullerene Sci. and Tech.* 4 (3) (1996) 553	1.648
99.	**C. Sekar**, C.R.V. Rao, C. Subramanian, P. Ramasamy Growth and characterization of C_{60} crystals from pure C_{60} and fullerite *Fullerene Sci. and Tech.* 3(3) (1995) 343	1.648
100	**C. Sekar**, C.R.V. Rao, C. Subramanian Growth of C_{60} crystals from cyclohexane & vapour and their characterization. *Physica Status Solidi* (a) 151 (1995) 9	1.660
101	R. Jayavel, **C. Sekar**, C.R.V. Rao, C. Subramanian, P. Ramasamy Growth of large single crystals whiskers of $Bi_2Sr_2CaCu_2O_8$ by step cooling method *J. Crystal Growth* 131 (1993) 105	1.632
	Total Impact Factor	**383.392**

Book Chapters:

1. G. Neri, G. Leonardi, M. Parthibavarman, V. Hariharan, **C. Sekar**
Development of a CO Sensor for Hydrogen Fuel Cell Powered Vehicles
Vehicle Engineering" 226-239 (2013)

2. Nehru Lavanya, **Chinnathambi Sekar**
Vitamin Sensors based on Nanostructured SnO_2 for Food and Pharmaceutical Applications
Handbook of Nanomaterials for Industrial Applications 292-301 (2018)

3. E. Fazio, N. Lavanya, **C. Sekar** et al
Electrochemical Sensor Based on Molybdenum oxide nanoparticles for detection of Dopamine: An analysis of chemosensory afferents and the projection pattern in the central nervous system *Topographic Organization of the Pectine Neuropils in Scorpions*.
DOI: 10.1007/978-3-030-04324-7-5,

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