

Curriculum Vitae

Dr. R. Kabilan

Associate Professor, PG & Research Department of Physics
Nehru Memorial College (Autonomous), Tiruchirappalli, Tamil Nadu, India

Contact Information

- Email: kabilanrajagopal82@gmail.com
 - Phone: +91- 9486193892
 - Address: Highland Hostel, Nehru Memorial College (Autonomous), Puthanampatti (Post), Tiruchirappalli - 621 007, Tamil Nadu, India
 - Profile URL: <https://vidwan.inflibnet.ac.in/profile/337419>
 - ORCID ID: 0000-0001-5778-5644
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Research Interests

- Theoretical/Mathematical Physics, Nonlinear Dynamics (Vibrational Resonance, Chaos)
 - Climate Modeling
 - Quantum Computing
 - Energy System
 - Condensed Matter Physics
 - Quantum-Dot Cellular Automata and Related Computational Models
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Educational qualification:

Degree	Subject	Institution/University	Year of Completed	Marks/Class
Ph.D	Physics	Bharathidasan University Tiruchirappalli	2023	Commended
SET	Physical sciences	Govt of TamilNadu	2016	Qualified
M.Phil	Physics	Bharathidasan University Tiruchirappalli.	2008	First class with distinction (80.08/OGPA)
M.Sc	Physics	Annamalai University Chidambaram	2004	First class (7.29/OGPA)
B.Sc	Physics	Bharathidasan University Tiruchirappalli.	2002	First class (74.5%)

Teaching Experience:

Total Teaching experience: 19 years

Designation	Department	Institution	Period
Associate Professor	PG and Research Dept. of Physics	Nehru Memorial College (Autonomous), Puthanampatti.	22.06.2005 – till date

Research Experience

- **Research Focus:**
 - Nonlinear Dynamics: Vibrational Resonance and Chaos Theory
 - Condensed Matter Physics
 - Quantum-Dot Cellular Automata (QDCA)
 - Nanomaterials, Magnetic Semiconductors, and Supercapacitors
- **Research Fellow:**

INSA Summer Research Fellow(Teacher)	Indian National Science Academy'(INSA)	Institute of Mathematical Sciences (IMSc), Department of Atomic energy, Govt of India, Chennai.
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- **Publications-10**

Sl. no	Authors	Title of the Research Article	Name of the Journal and Publisher	Collaboration	Scopus or WoS
1	P. Ashokkumar, R. Kabilan , M. Sathish Aravindh, A. Venkatesan, M. Lakshmanan	Harnessing vibrational resonance to identify and enhance input signals https://doi.org/10.1063/5.0169195	Chaos,2024 American Institute of Physics(AIP)	Centre for Nonlinear Dynamics(CNLD) Bharathidasan University, Tiruchirappalli	Scopus
2	R. Kabilan , A. Venkatesan	Vibrational Resonance in a Damped Bi-harmonic Driven Mathews–Lakshmanan Oscillator https://doi.org/10.1007/s42417-023-00897-6	Journal of Vibration Engineering and Technologies, 2023 Springer Nature	-----	Scopus
3	R. Kabilan , M. Sathish Aravindh, A. Venkatesan, M. Lakshmanan	Vibrational resonance in a damped and two-frequency driven system of particle on a rotating parabola https://doi.org/10.1140/epjp/s13360-023-04017-x	The European Physical Journal Plus, 2023 Springer Nature	Centre for Nonlinear Dynamics(CNLD) Bharathidasan University, Tiruchirappalli	Scopus

4	R. Kabilan, Mousumi Saha	Exploring ECA Rules With Quantum-Dot Cellular Automata <i>DOI:10.1109/INCOFT556 51.2022.10094524</i>	Proceedings of International Conference on Futuristic Technologies (INCOFT-2022), IEEE	National Institute of Technology, Durgapur, West Bengal	Scopus
5	R. Kabilan, Biplab K Sikdar	Cellular Automata Based Fault Tolerant Test Logic for L1 Cache in Tiled CMPs <i>DOI: 10.1109/PDGC56933.2022 .10053133</i>	Proceedings of International Conference on Parallel, Distributed and Grid Computing (PDGC-2022),IEEE	Indian Institute of Engineering Science and Technology, Shibpur, West Bengal	Scopus
6	R. Kabilan, M. Ashokkumar	Investigations of Mn introduced structural modifications on Ni-doped ZnO diluted magnetic semiconductors and improved magnetic and antibacterial properties <i>https://doi.org/10.1016/j.molstruc.2021.132060</i>	Journal of molecular structure,2021 Science Direct	Saveetha University, Chennai	Scopus
7	R. Kabilan, M. Ashokkumar	Annealing temperature enhanced visible absorption and magnetic properties of (Cu, Cr) co-doped ZnO diluted magnetic semiconductors <i>https://doi.org/10.1016/j.molstruc.2021.131536</i>	Journal of molecular structure,2021 Science Direct	Saveetha University, Chennai	Scopus
8	R. Kabilan, Thennarasu S	Enhanced Electrochemical Performance of Mn3O4/Multiwalled Carbon Nanotube Nanocomposite for Supercapacitor Applications <i>https://doi.org/10.1007/s11664-021-09177-z</i>	The Journal of Electronic Materials, 2021 Springer Nature	Saveetha Engineering College- Anna University, Chennai	Scopus
9	R. Kabilan, A. Venkatesan	Dynamical Behaviour of Selective Natural Systems using Vibrational Resonance: A Review	Indian J. Nat. Sci.2023	-	Web of Science
10	R. Kabilan, A. Venkatesan	The Role of Resonance in Physical and Biological Nonlinear Systems	Indian J. Nat. Sci.2023	-	Web of Science

- **Paper Presentation(Oral)-03**

- 13-th National Conference on “Nonlinear Systems and Dynamics “organised by SASTRA Deemed University,Thanjavur on 17-21 December,2021
- National Conference on “Recent Trends in Advanced Energy Materials” (NCRTEM-2010)organised by Alagappa University,Karaikudi on 10&11th March-2010
- National Conference on “Nano Materials- Preparation, Characterization and Devices” organised by Bishop Heber College(Autonomous),Tiruchirappalli on 14th March-2008

- **Guided Projects**

Programme	Nonlinear Dynamics	Condensed Matter Physics
M.Sc Physics	20	20
M.Phil Physics	04	---

Research Training and Workshops

Sl. No	Title of the Course	Type of the Course	Duration	Organizer	Venue of the Course
01.	TIFR-Simplified Hardware for Affordable Physics and Electronics (SHAPE) using ExpEYES	National Hands on Training Workshop	02 days 14.02.2025-15.02.2025	TIFR-Hyderabad and UGC	Central University of Hyderabad
02.	UGC-Malaviya Mission Teacher Training Centre (UGC-MMTTC) on NEP 2020 Orientation & Sensitization Programme	National Teacher Training	10 days 02.12.2024 to 11.12.2024	UGC Bharathidasan University	Online
03.	Physics Teachers Training Programme	National Teacher Training	05 days 28 June to 2 July 2023	Infosys	Azim Premji University, Bangalore
04.	UGC-Approved ICT Skills for Educational & Research Workspace	International Short-Term Programme	06 days 11-16 December, 2023	IGNOU-Staff Training and Research Institute of Distance Education	Online

05.	Statistical Physics and its application	National-Refresher Course	15 days May 02-17,2017	Indian Academy of Sciences	Central University of Tripura Agartala
06.	Fundamental Problems of Quantum Physics	International Programme	21 days 21.11.2016-02.12.2016	Tata Institute of Fundamental science(TIFR)	International Centre for Theoretical Sciences(ICTS) - TIFR, Bangalore
07.	Experimental Physics	National-Refresher Course	15 days May 10-25, 2016	Indian Academy of Sciences	Central University of Goa
08.	Quantum Mechanics and Nuclear Physics	National-Refresher Course	15 days 15-30 April,2016	Indian Academy of Sciences	Dayanand Science College, Latur, Maharashtra
09.	e-content development	National Training-cum-production Workshop	23.10.2013 - 26.10.2013	UGC	Nehru Memorial College (Autonomous) Puthanampatti
10.	Quantum Mechanics	National-Refresher Course	15 days 1-14 May,2013	Indian Academy of Sciences	St.Berchmans College,Changanacherry Kottayam, Kerala
11.	MHRD-Workshop on National mission on Education through Information and Communication Technology (NME-ICT)	National Workshop	February 11th and 12th,2013	MHRD	National Institute of Technology, Tiruchirappalli
12.	DST-SERC School on Nonlinear Dynamics	International	04-26, Jan`2011	DST	CNLD, school of physics, Bharathidasan University, Tiruchirappalli
13.	Computational Methods on Nonlinear Dynamics	National Workshop and Conference	Sep,2010	UGC	CNLD, Bharathidasan University Tiruchirappalli.
14.	Nonlinear physics: Theory, Experiments and Applications	National Level TPSC Workshop	29-30, March 2010	DST	Nehru Memorial College (Autonomous), Puthanampatti
15.	UGC-Special lecture series on Theoretical Physics	National Seminar	10-12.02.2010	UGC	Jamal Mohamed College (Autonomous) Tiruchirappalli

Other Events (Seminars/Conferences/Workshop/FDP) Participated - 25

Additional Responsibilities:

- Acting as **Assistant Coordinator, Internal Quality Assurance Cell (IQAC)**
- Acting as **Warden in Highland Hostel**, Nehru Memorial College (Autonomous) from June 2009 to till date
- Acting as Member in **Academic Council** as **Teacher Representative**
- Member in **Board of Study** for Both UG and PG Programmes
- Curriculum Designer for many courses of UG and PG
- Acted as **MicroQuality Assurance Cell (MAC)** member from 2010 to 2021.
- **Head of the department for PG and Research Department of Physics Self-Supporting Section** from 2018 to till Date.
- Acted as **NSS Programme officer** from August 2007 to August 2013 at Nehru Memorial College (Autonomous), Puthanampatti.
- Appreciated from the Bharathidasan University NSS unit cell for conducting Mega Tree plantation programme.
- Appointed as contingent leader of “**NSS adventure Programme held at JIM, Patnitop, Jammu and Kashmir conducted by Ministry of Youth affairs and Sports, Govt of India.**”

My Score as per the UGC Regulations on Minimum Qualifications for Appointment of Associate Professors in Universities and Colleges and Measures for the Maintenance of Standards in Higher Education 2018

S.No	Academic Record	Score
1.	Graduation	13/15
2.	Post-Graduation	25/28
3.	Ph.D	30/30
4.	NET/SET	05/07
5.	Research Publications	10/10
7.	Teaching	10/10
Total		93/100

Declaration

Hereby, I declare that the information given above are true to the best of my knowledge and belief.

(Kabilan.R)