

Faculty Profile

Dr. S. Vivekanandhan, Assistant Professor

Department of Physics, V.H.N.S.N. College (Autonomous)
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<https://scholar.google.co.in/citations?user=8MTnEm8AAAAJ&hl=en&oi=ao>

Dr. S. Vivekanandhan, Assistant Professor at Department of Physics, V.H.N.S.N. College (Autonomous), Virudhunagar since September 2013. He received his Ph.D from Pondicherry University in 2007 and continued his **Post Doctoral Research** at School of Engineering, University of Guelph, Canada between 2008 and 2011. Prior to joining in V.H.N.S.N. College he has been working as **Research Scientist** at Department of Plant agriculture, University of Guelph since 2011. Dr. Vivekanandhan has more than 81 publications to his credit including **52 peer-reviewed journal papers, 12 Book Chapters and 14 conference proceedings**. Between 2014 and 2018 three of his research activities on “Hybrid Biocomposites” have been applied for US/ World patent in which **Two patents have granted**. In 2016 he was also honored with the **“Innovation of the Year Award 2016”** by Catalytic center, University of Guelph, Canada for his research accomplishment on “Compostable Biocomposite Resin for Injection Molding”.

1. Professional/ Research Experiences:

- a) **Assistant Professor (2013- Current):** V.H.N.S.N. College (Autonomous), Madurai Kamaraj University, Virudhunagar, Tamilnadu, India.
- b) **Visiting Scientist (May- June, 2014, 2015, 2016 and 2017):** Department of Plant Agriculture, University of Guelph, Canada.
- c) **Research Scientist and Program Coordinator (2011- 2013):** Bioproducts Discovery and Development Center (BDDC), Department of Plant Agriculture, University of Guelph, Canada
- d) **Postdoctoral Research Fellow (2008- 2011):** School of Engineering, University of Guelph, Canada
- e) **M. Phil. & Ph.D. (2000-2007):** Pondicherry University, India

2. Research Interests:

- Biobased Polymers and their Composites
- Metal Oxide Nanostructures and their Surface Functionalization
- Batteries, Supercapacitors and Sensors
- Biocarbon Materials for Energy, Environment, Agricultural and Composite Applications
- Circular Economic Practices for Sustainable Future

3. Academic Qualifications:

- a) **Ph. D.,-** Department of Physics, Pondicherry University, Pondicherry, India, **2007**.
- b) **M. Phil.,-** Department of Physics, Pondicherry University, Pondicherry, India, **2001**.
- c) **M. Sc.,-** Department of Physics, Sri Ramakrishna Missions Vidyalaya College of Arts and Science affiliated to Bharathiyar University, Coimbatore, Tamil Nadu, India, **2000**.
- d) **B. Sc.,-** Government Arts College, Salem, Tamil Nadu, India - April, **1998**.

4. Awards and Honors:

- **"Innovation of the Year Award 2016"** by Catalytic center, University of Guelph, Canada for the invention on "Compostable Biocomposite Resin for Injection Molding" (**June 2016**).
- Awarded "**Senior Research Fellowship (SRF)**" by CSIR, New Delhi, India (**2005**).
- Received "**Research Fellow Award**" from Jawaharlal Nehru Memorial Fund (**JNMF**), New Delhi, India (**2005**).
- **1st Rank (Gold Medal)** in M. Sc., Physics at Sri Ramakrishna Missions College of Arts and Science affiliated to Bharathiyar University, Coimbatore, India (**2000**).

5. Intellectual Property Rights and Technology Licensing (IPR & TL)

(a) Patents

- I. "Hybrid Sustainable Composites and Methods of Making Using Thereof", A. K. Mohanty, M. Misra, A. Rodriguez, and **S. Vivekanandhan**, (2017). U.S. Patent No. US9550871B2. Washington, DC: U.S. Patent and Trademark Office, **Granted on 24th Jan 2017**.
- II. "Novel methods for creation of sub-micron biocarbon materials from biomass and their fields of application" A. Mohanty, M. Misra, **S. Vivekanandhan**, P. Gonugunta, T. Wang, A. Rodriguez, M. Tiessen, Atul Bali, U.S. Patent No., US11332371B2. Washington, DC: U.S. Patent and Trademark Office, **Granted on 17th May 2022**.
- III. "Biodegradable Polymer-Based Biocomposites With Tailored Properties And Method Of Making Those", A.K. Mohanty, M. Misra, N. Zarrinbakhsh, R. Muthuraj, T. Wang, A. Rodriguez, and **S. Vivekanandhan**, US Patent Application No. US20180127554A1 (2017).

(b) Details of the Product Development and Commercialization

World's first certified 100% compostable single serve pod has been formulated and commercialized in to the Canadian market as PūrPod100™ by Club Coffee through our patented technology (US Patent Application No. US20180127554A1 (2017).

(<https://news.uoguelph.ca/2017/11/compostpods/>)



6. Research Supervision/ HQP (Highly Qualified Personnel) Training:

- a) Currently supervising 4 Ph.D. scholar (at V.H.N.S.N. College), and 1 visiting Master Student (at V.H.N.S.N. College) on the development of carbon nanomaterials for energy storage and environmental applications.
- b) Co- supervised 5 undergraduate summer students and 1 visiting student during 2008-2013 at University of Guelph, Guelph, Ontario, Canada.
- c) Supervised 4 M.Phil., (Master of Philosophy) scholars, 2 Visiting Master Student and 2 undergraduate summer students during 2013-2018 at V.H.N.S.N. College, Virudhunagar, India.

d) Supervised two Visiting Scientists during 2017-2018 at V.H.N.S.N. College, Virudhunagar, India

(1) Dr. S. Sivashanmugam from "University of La Frontera", Temuco, Chile during May-Aug 2017 and Aug-Sep 2018.

(2) Dr. D. Shanthana Lakshmi from "Palmconnect LLC", Showcane Lane, Sandy, UT 84094, USA. in the month of November 2018.

7. Publications (List of papers published in SCI Journals, in year wise descending order)

Total Number of Publications: 81

Peer Reviewed Journal Articles: 52

Peer Reviewed Book Chapters: 12

Patents: 3 (2 US Patent Granted)

Peer Reviewed Conference Proceedings: 13

Google Scholar Data: Total number of Citations- **3532**; H index-**25**; i10-index-**45**,

<https://scholar.google.com/citations?user=8MTnEm8AAAAJ&hl=en&oi=ao>

8. Any other Information

A- List of Projects Taken/Completed with Grant Amount

1. "Development of Renewable Resource Based Hierarchical Carbon Nanostructures for Supercapacitor Applications", by **UGC- Minor Project (2016-2018)**; Rs 3,50,000. [**Role: Principal Investigator**]
2. "Value addition to the Agro Industrial Coproducts by Converting them into Activated Carbon for Environmental Applications" by **Maha Mathi Enterprises**, Salem, Tamilnadu (2019-2021), Rs. 1,00,000 [**Role: Co-Investigator**] (**No Cost Extension is requested until 2023**)

B- Reviewer for the Research Project

1. In 2020, Acted as the "External Subject Expert" to review a research project submitted to National Science Center, 30-312 Kraków, Poland.
2. In 2021, Acted as the "Foreign Reviewer" to evaluate the proposal submitted to Czech Science Foundation, Hadovka Office Park, Evropská 2589/33b, Czech Republic.