RESUME

Dr. VIVEK V. ANTAD

Current address:

Flat B-13, Mantri Avenue-1, Panchawati,

Pashan Road, Pune - 411 008, MS, India.

Permanent address:

A/80, "Preeti", Karnik Nagar,

Solapur - 413 006, MS, India.

Birth date: 25th June 1982

Contact: +91(0)9561426156

vvantad@nowrosjeewadiacollege.edu.in

antad_vivek@yahoo.co.in

Current Position

March 2026- Till date: **Associate Professor of Physics** at Department of Physics, Nowrosjee Wadia Institute of Arts and Science, Pune, India.

March 2014- March 2026: **Assistant Professor of Physics** at Department of Physics, Nowrosjee Wadia Institute of Arts and Science, Pune, India.

June 2021- Till date: **Associate NCC Officer (ANO)** of 3 Maharashtra Air Squadron NCC Pune, at NCC Group Headquarter, Pune

Scientific Research Projects

Nov 2018- May 2022:

Role: Principal Investigator for Major Research Project

Funding Agency: DST - Science and Engineering Research Board (SERB), India

Scheme: Teachers Associateship for Research Excellence (TARE - 2018)

Project Grant: INR 18,30,000/-

Project Status: Ongoing

Project Title: "Insights on the resistive switching mechanisms in exotic manganite/transition metal oxide nano-heterostructured devices grown via pulsed laser deposition (PLD): A comparative investigation using conductive atomic force microscopy (cAFM) and classical probe station assembly for applications in Non-Volatile Memory."

Nov 2017- **Role:** Principal Investigator for Minor Research Project

Mar 2019: **Funding Agency:** B. C. U. D., Savitribai Phule Pune University, Pune

Scheme: University Research Grant Scheme

Project Grant: INR 2,75,000/-

Project Status: Completed

Project Title: "Synthesis of bimetallic core-shell plasmonic nanostructures and their applicability in opto-electronic devices."

Education & Research Experience

Feb 2014- **Dr. D. S. Kothari Postdoctoral Fellow** at University of Pune, Pune, India.

Mar 2014: **Division:** Department of Physics

Project Title: "Synthesis of bimetallic plasmonic nanostructures and their applicability in opto-electronic devices"

Supervisor: Prof. S. I. Patil

June 2013- **Research Associate** at National Chemical Laboratory (CSIR-NCL), Pune, India.

Jan 2014: **Division:** Center of Excellence in Solar Energy

Project Title: "Fabrication, designing, & characterization of Large Area Dye Sensitized Solar Cells"

Supervisor: Dr. S. Ogale.

Jan 2013- **Research Associate** at University of Southern California, Los Angeles, CA, USA.

May 2013: **Laboratory:** Nanostructure Materials and Devices Laboratory,

Project Title: "Nanotemplate-directed arrays of highly heterogeneous semiconductor nanostructures for infrared detection and power generation."

Supervisor: Prof. A. Madhukar.

June 2012- **Research Associate** at National Chemical Laboratory (CSIR-NCL), Pune, India.

Dec 2012: **Division:** Center of Excellence in Solar Energy

Project Title: "Design, development, & demonstration of high performance Parabolic Trough based 300kW Solar Thermal Power Plant: A CSIR-NMITLI Project."

Supervisor: Dr. S. Ogale.

Oct 2008- **Ph. D. (Physics)** at Institute Pprime, University of Poitiers, France.

Nov 2011: **Specialization:** Thin Film & Nano-structured Materials

Thesis Title: "Monitoring the growth & reactivity of metal nanoclusters by *in situ* optical spectroscopy"

Supervisors: Dr. L. Simonot, Dr. D. Babbonneau.

Sept 2007- Oct 2008: **M. S. (Research - Materials Science)** at University of Poitiers, France.
Specialization: Physics and Mechanics of Material Surfaces
Grade: Second Class Honors
Project Title: "Physical characterization of nanoclusters in Pt-Ge/Al_2O_3 catalyst by EXAFS technique."
Supervisors: Dr. L. Pirault-Roy, Dr. C. Kappenstein.

July 2005- April 2007: **M. Sc. (Physics)** at Shivaji University, Kolhapur, India.
Specialization: Materials Science
Grade: First Class (65.79%)
Project Title: "Fabrication & characterization of MgCuZn Ferrite & $PbZrTiO_3$ Ferroelectric (composite) materials."
Supervisor: Dr. Y. Kolekar.

June 2002- April 2005: **B. Sc. (Physics)** at DBF Dayanand College of Arts and Science, Solapur, India.
Grade: First Class with Distinction (75.56%)

Personal Skills

- **Techniques implemented for Nanomaterials and Nanoscience**
  - ▷ Physical Vapor Deposition Techniques:
    - Magnetron sputtering deposition
    - Thermal evaporation technique
    - Pulsed laser deposition (PLD)
  - ▷ Spectroscopy Techniques:
    - Real-time surface differential reflectance spectroscopy (SDRS)
    - Ellipsometry spectroscopy
    - Diffused reflectance spectroscopy (DRS)
    - UV-Visible spectroscopy
  - ▷ Characterization Techniques:
    - High resolution transmission electron microscopy (HRTEM: JEOL 2100F)
    - Field emission scanning electron microscopy (FESEM: HITACHI S-4800)
    - Conductive atomic force microscopy (CAFM: JPK-NanoWizard II)
    - X-ray scattering xechnique: GISAXS (at BM02-D2AM Beam-line, ESRF, France)
    - Current-Voltage *(I-V)* measurements using Keithley 4200 and 2400 Source Meters
- **Softwares**
  - ▷ Python Programming with Spyder, LaTeX, Igor Pro, Origin, EndNote, Mendeley, Abode Photoshop, ImageJ, MS Office

- **Linguistic Skills**

  ▷ **Indian Languages**

  — Hindi (Read/Write/Speak)

  — Marathi (Read/Write/Speak)

  — Kannada (Speak)

  ▷ **Foreign Languages**

  — English (Read/Write/Speak): TOEIC-895/1000

  — French (Read/Write/Speak): Average

  — Russian (Basic)

Scientific Contributions

- **Research Publications**

  ▷ D. Suthar, P. Sharma, B. Ruptake, **V. Antad**, N. Chaure, A. Banpurkar, A. Yengantiwar *"Surface engineering of 3D printed carbon-PLA for electrocatalytic functionality"* Physica Scripta, **101** 135907 (2026)
  Impact Factor: 2.60.

  ▷ S. Latpate, **V. Antad**, S. Kate, V. Borkar *"A quantitative insight of substituent effect in terms of reactivity and nucleophilicity in rapid aqueous iodinations of monosubstituted benzene derivatives employing hydrodynamic voltammetry"* International Journal of Chemical Kinetics, **57** 08 (2025)
  Impact Factor: 1.50.

  ▷ A. Kolhe, G. Aher, P. Soyam, S. Ralegankar, S. Kedia, L. Chaudhari, **V. Antad**, S. Ghude, P. Safai, S. Chakane, P. Devara *"Aerosol Opto-physical Properties: Temporal Variation, Aerosol Type Discrimination and Source Identification"* Aerosol Air Quality Research, **22** 10 (2022)
  Impact Factor: 4.53.

  ▷ **V. Antad**, P. A. Shaikh, A. Biswas, S. Rajput, S. Deo, M. Shelke, S. Patil, S. Ogale *"Resistive Switching in $HfO_2 - x/La_{0.67}Sr_{0.33}MnO_3$ Heterostructures: An Intriguing Case of Low H-Field Susceptibility of an E-Field Controlled Active Interface"* ACS Applied Materials and Interfaces, **13** 54133 (2021)
  Impact Factor: 10.38.

  ▷ A. Biswas, A. Sengupta, U. Rajput, S. K. Singh, **V. Antad**, S. K. M. Hossain, S. Parmar, D. Rout, A. Deshpande, S. Nair, S. Ogale *"Growth, properties and applications of pulsed laser deposited layered nanolaminate Ti_3AlC_2 thin films"* Physical Review Applied, **13** 044075 (2020)
  Impact Factor: 4.93.

  ▷ R. Devan, V. Thakare, **V. Antad**, P. Chitake, R. Khare, M. More, R. Dhayal, S. Patil, Y-R Ma, L. Schmidt-Mende *"Nano-heteroarchitectures of Two-dimensional MoS_2 @ One-dimensional Brookite TiO_2 nanorods: Prominent electron emitters for displays"* ACS Omega, **2** 2925 (2017)
  Impact Factor: 4.13.

  ▷ R. Devan, Y. Ma, M. More, R. Khare, **V. Antad**, R. Patil, V. Thakare, R. Dhayal, L. Schmidt-Mende *"Promising field electron emission performance of vertically aligned one dimensional (1D) brookite (β) TiO_2 nanorods"* RSC Advances **6** 98722 (2016)
  Impact Factor: 4.04.

  ▷ **V. Antad**, L. Simonot, D. Babonneau *"Influence of low-energy plasma annealing on structural and optical properties of silver nanoclusters grown by magnetron sputtering deposition"* Journal of Nanoparticle Research **16** 3 (2014)
  Impact Factor:2.25.

- **V. Antad**, L. Simonot, D. Babonneau *"Tuning the surface plasmon resonance of silver nanoclusters by oxygen exposure and low-energy plasma annealing"* Nanotechnology **24** 045606 (2013)
  Impact Factor: 3.87.
- **V. Antad**, L. Simonot, D. Babonneau, S. Camelio, F. Pailloux, P. Guérin *"Monitoring the reactivity of Ag nanoparticles in oxygen atmosphere by using in situ and real time optical spectroscopy"* Journal of Nanophotonics **6** 061502 (2012)
  Impact Factor: 1.49.
- **V. Antad**, L. Simonot, D. Babonneau, S. Camelio, P. Guérin, F. Pailloux, *"Monitoring the reactivity of Ag nanoparticles for different atmospheres by using in situ and real time optical spectroscopy"* Proceedings SPIE **8104** 810407 (2011)
  Impact Factor: –.
- L. Simonot, D. Babonneau, S. Camelio, D. Lantiat, P. Guérin, B. Lamongie, **V. Antad**, *"In situ optical spectroscopy during deposition of Ag:Si_3N_4 nanocomposite films by magnetron sputtering"* Thin Solid Films **518** 2637-2643 (2010)
  Impact Factor: 2.18.

• Oral Presentations

- **V. Antad**, S. Kate, P. A. Shaikh, *"Physical and Electrical Properties of PZT Thin Films prepared by Spin Coating Method"* - at International Conference on Advances in Science and Technology, (6th May 2023, AKI's Poona College of Arts, Science and Commerce, Pune (Maharashtra), India).
- **V. Antad**, L. Simonot, D. Babonneau, S. Camelio, P. Guérin, F. Pailloux, *"Monitoring the reactivity of Ag nanoparticles for different atmospheres by using in situ and real time optical spectroscopy"* - at NanoScience + Engineering, SPIE (Optics and Photonics), (21-25 August 2011, San Diego, USA).
- **V. Antad**, L. Simonot, D. Babonneau, S. Camelio, P. Guérin, F. Pailloux, *"Ag:Si_3N_4 nanocomposites studied for thermal and plasma annealing by real time optical monitoring and post-mortem STEM characterizations"* - at IRUN International Research Symposium on Nanotechnology, (14-15 October 2010, Barcelona, Spain).
- **L. Simonot**, V. Antad, D. Babonneau, S. Camelio, P. Guérin, F. Pailloux, *"Contrôlle in-situ de nanoparticules d'or ou d'argent"* - at Réunion plénière GDR Or-Nano, (3-5 November 2009, Dijon, France).
- **V. Antad**, L. Simonot, D. Babonneau, S. Camelio, P. Guérin, F. Pailloux, *"In situ and real time optical spectroscopy to study Au or Ag nanoparticles growth and their capping by a Si_3N_4 matrix"* - at GOLD 2009 (26-29 July 2009, Heidelberg, Germany).

• Poster Presentations

- D. Suthar, P. Sharma, B. Ruptake, **V. Antad**, A. Yangantiwar, *"Study of Electrocatalytic Performance of 3D Printed Electrodes based on FFF and DIW Techniques"* - at 3rd International Conference on Energy, Functional Materials/Molecules and Nanotechnology, (20-22 March 2025, Kumaun University, Nainital, India) - Received The Best Poster Award of the Conference.
- **V. Antad**, S. Suryavanshi, S. Ogale, *"In situ growth of nanostructured metal oxide thin films by magnetron sputtering deposition and their ex situ sulfidation: Applicative studies in field emission and solar selective absorber coatings"* - at Fergusson College, (4-5 March 2016, Pune, India).

- A. Shaikh, **V. Antad**, K. Upadhye, V. Dhas, V. Thakare, S. Ogale, *"Synthesis, optimization and evaluation of W-(WO_3-Al_2O_3) cermet coatings on stainless steel capsule: A CSIR NMITLI Project with Milman Thin Films, Pune"* - at National Chemical Laboratory, (30 March 2012, Pune, India).
- V. Antad, L. Simonot, S. Camelio, P. Guérin, F. pailloux, **D. Babonneau**, *"Croissance et réponse optique de nanoparticules d'or et d'argent préparée par pulvérisation magnétron"* - at Réunion plénière GDR Or-Nano, (19-21 March 2012, Poitiers, France).
- **V. Antad**, L. Simonot, D. Babonneau, S. Camelio, P. Guérin, F. pailloux, *"Monitoring the reactivity of Ag nanoparticles for different atmospheres by using real time optical spectroscopy"* - at 25émes Journées Surfaces et Interfaces, (26-28 January 2011, Poitiers, France).
- **V. Antad**, L. Simonot, D. Babonneau, S. Camelio, P. Guérin, F. pailloux, *"In situ and real time optical spectroscopy to study Au or Ag nanoparticles growth and their capping by a Si_3N_4 matrix"* - at GOLD 2009, (26-29 July 2009, Heidelberg, Germany).

Extra Curricular Activities

- **Information and Technology**
  - Certification Course in Innovative Pedagogies for College Teachers from IISER Pune and Maharashtra State Faculty Development Academy (2025-26)
  - 12 Weeks Certification Course in Python Programming from IIT Madras (2018-19)
  - Maharashtra State Certificate in Information Technology (MS-CIT)
  - Web Designing Course
  - Diploma of Information and Technology (DIT)
- **National Cadet Corps (NCC): 2002-2005**
  - Senior Under Officer (SUO), 38 Maharashtra Battalion, Solapur, India.
  - NCC "C" Certificate completed with 'B' Grade.
- **Coordinator** for current institute to work with NGO Science Education Initiative (SEI)

References

- **Dr. S. Ogale.**

Emeritus Professor, IISER-Pune (Physics),
AND,
Director,
Research Institute for Sustainable Energy (RISE),
The Chatterjee Group's Centres for Research and Education
in Science and Technology (TCG-CREST),
Salt lake, Kolkata,
INDIA.

☎: +91-20-25908292, ✉: satishogale@iiserpune.ac.in,
@: https://satishogale.wixsite.com/sbolab

- **Dr. D. Babonneau.**

CNRS - Research Director,
Départment Physique et Mécanique des Matériaux,
UPR 3346 CNRS, Université de Poitiers-ISAE ENSMA,
Teléport 2, 86360, Futuroscope Chasseneuil.
FRANCE.

☎: 00 33 5 49 49 67 25, ✉: david.babonneau@univ-poitiers.fr,
@: https://pprime.fr/david-babonneau/

- **Dr. L. Simonot.**

Assistant Professor and Researcher,
Institut Pprime, UPR 3346 CNRS, Université de Poitiers,
Laboratoire-SP2MI, Futuroscope Chasseneuil Cedex - 86962,
FRANCE.

☎: 00 33 5 49 49 67 24, ✉: lionel.simonot@univ-poitiers.fr,
@: https://pprime.fr/en/simonot-lionel-en/

- **Dr. Y. Kolekar.**

Associate Professor,
Department of Physics, University of Pune,
Pune - 411 007, Maharashtra,
INDIA.

☎: 00 91 20 25 69 26 78 (302), ✉: ydk@physics.unipune.ernet.in,
@: http://physics.unipune.ac.in/∼ydk/