Faculty Profile of Dr.Y.L.Jeyachandran

Dr.Y.L.Jeyachandran
Assistant Professor
Department of Physics

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Research Area

- Thin Films
- Proteins Patterning

Education & Career

Education

Ph. D.
Subject : Physics
Institution : Bharathiar University
Affiliated University : Bharathiar University
Year of Award : 2006

M. Sc.,
Subject: Physics
Institution : Bharathiar University
Affiliated University : Bharathiar University
Year of Award : 2001

B. Sc.,
Subject: Physics
Institution: Sri Ramakrishna Mission Vidyalaya College of Arts and Science, Coimbatore - 20
Affiliated University: Bharathiar University
Year of Award: 1999

Career

At Bharathiar University (Reverse Order)

Past Experience

Postdoctoral Researcher : May 2010 to Aug. 2014 at Heidelberg University, Heidelberg, Germany

Postdoctoral Researcher : April 2009 to Aprl 2010 at LPEC-CNRS, Le Mans, University du Maine, France

Postdoctoral Researcher : Jan. 2007 to Feb.2009 at LEM, INPL-CNRS, University de Lorraine, Nancy, France

Awards

Membership

Visits

Country Visited : Sweden
Duration of Visit : June 2014
Purpose of Visit : Beamtime experiments in MaxLab, Lund

Country Visited : United States of America
Duration of Visit : April 2014
Purpose of Visit : Beamtime experiments in ALS, Berkeley

Country Visited : P R China
Duration of Visit : September - December 2004
Purpose of Visit : Visiting Researcher, Sichuan University, Chengdu

Collaborators

Others

Projects

Funded Projects(National Level)

- Ongoing - 01
- Completed - 04

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1. RUSA

Title of the project: Fabrication of metal oxides multilayers based anti-reflection coatings for solar cells application

Funding Agency: RUSA

Amount: Rs. 10 Lakhs

Duration: February 2020 – June 2020

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2. CSIR-EMR

Title of the project: Fabrication of novel nanoparticle / thin film alternatively layered coatings of metal oxides

Funding Agency: CSIR - EMR

Amount: Rs. 24 Lakhs

Duration: February 2017 - February 2020

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3. DST-SERB

Title of the project: Preparation and analysis of zinc tin phosphide nanocrystal films for solar cell application

Funding Agency: DST-SERB

Amount: Rs. 33.77 Lakhs

Duration: September 2016 - December 2019

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4. UGC

Title of the project: Start-up Grant

Funding Agency: UGC

Amount: Rs. 6 Lakhs

Duration: 2014 - 2016

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1. NRB-DRDO

Title of the project : Development of amphiphilic titanium oxide – silicon oxide coatings for anti-biofouling applications

Funding Agency : NRB-DRDO

Amount : Rs. 21 Lakhs

Duration : February 2018 – December 2021

Consultancy Projects

- Ongoing
- Completed

Research Guidance

- Post Doc.
- Ph.D.
- M.Phil.
- M.Sc.

Ongoing

Title

Name

Completed

Title

Name

Ongoing

Sample Data.

Completed

Sample Data.

Ongoing

Sample Data.

Completed-02

R. Meena
Title of Thesis: Preparation and analysis of very thin TiO2 films
Year of Award: 2019

Induja
Title of Thesis: Characterisation of vanadium pentoxide thin films prepared by dc magnetron sputtering
Year of Award: 2017

Ongoing

Sample Data.

Completed

Sample Data.

Research Publication

- International
- National
- Patents
- Conferences
- Books/Chapters
- Database

Reverse Chronological Order

2021

40. Sub-2 nm boron doping in silicon using novel ultra-thin SiO2 film produced by sol-gel dip coating as capping layer
P. Peranantham, Y.L. Jeyachandran
Semiconductor Science and Technology (2021) (In Press)

39. Structure, composition and photoconductivity analysis of zinc tin phosphide ternary compound nanoparticles synthesized by chemical method
P. Sivakumar, P. Peranantham, V.V. Siva Kumar, K. Asokan, Y.L. Jeyachandran
Journal of Materials Science: Materials in Electronics 32, 8767-8777 (2021)

38. Label-free monitoring of immuno-specific interactions of adsorbed multilayer of proteins
P. Peranantham, K.R. Gopi, Y.L. Jeyachandran
Biointerphases 16, 011009 (2021)
Featured article, AIP Scilights, 02.04.2021

2020

37. Effect of evaporation behavior of zinc tin phosphide alloys on the composition, structure, and
photoconductive properties of their thin films
P. Sivakumar, P. Peranantham, V.V. Siva Kumar, K. Asokan, Y.L. Jeyachandran
Journal of Vacuum Science & Technology A 38, 063404 (2020)
2019-2003

36. Opto-electroactive amino- and pyridyl-terminated monolayers of RuII–terpyridyl complexes and their usage
as Hg2+ sensors
P.C. Mondal, V. Singh, Y.L. Jeyachandran, M. Zharnikov
The Journal of Physical Chemistry C 123, 6121-6129 (2019)

35. Site-specific electronic structure of imidazole and imidazolium in aqueous solutions
F. Meyer, M. Blum, A. Benkert, D. Hauschild, Y.L. Jeyachandran, R. G. Wilks, W. Yang, M. Bär, F. Reinert,
C. Heske, M. Zharnikov, L. Weinhardt
Physical Chemistry Chemical Physics 20, 8302-8310 (2018)

34. X-ray emission spectroscopy of the proteinogenic amino acids at all relevant absorption edges
F. Meyer, M. Blum, A. Benkert, D. Hauschild, Y.L. Jeyachandran, R. G. Wilks, W. Yang, M. Baer, C. Heske,
F. Reinert, M. Zharnikov and L. Weinhardt
Journal of Physical Chemistry B 121, 6549-6556 (2017)

33. Adsorption behaviour of reduced graphene oxide towards cationic and anionic dyes: Co- action of
electrostatic and π–π interactions
C.R. Minitha, M. Lalitha, Y.L. Jeyachandran, L. Senthilkumar, R.T. Rajendra Kumar
Mater. Chem. Phys 194, 243-252 (2017)

32. Investigation of the ionic hydration in aqueous salt solutions by soft x-ray emission spectroscopy

Y.L. Jeyachandran, F. Meyer, A. Benkert, M. Baer, M. Blum, W. Yang, F. Reinert, C. Heske, L. Weinhardt
and M. Zharnikov.
Journal of Physical Chemistry B 120, 7687-7695 (2016)

31. Surface-confined heterometallic triads on the basis of terpyridyl complexes and design of molecular logic
gates
P. C. Mondal, V. Singh, Y.L. Jeyachandran and M. Zharnikov
ACS Applied Materials and Interfaces 7, 8677-8686 (2015)

30. Maskless ultraviolet projection lithography with a biorepelling monomolecular resist
Y.L. Jeyachandran, F. Meyerbroker, A. Terfort and M. Zharnikov
Journal of Physical Chemistry C 119, 494-501 (2015)

29. Ion-solvation-induced molecular reorganization in liquid water probed by resonant inelastic soft x-ray
scattering
Y.L. Jeyachandran, F. Meyer, S. Nagarajan, A. Benkert, M. Baer, M. Blum, W. Yang, F. Reinert, C. Heske,
L. Weinhardt and M. Zharnikov
Journal of Physical Chemistry Letters 5, 4143-4148 (2014)

28. Surface confined heteroleptic Copper(II)-polypyridyl complexes for photo-nuclease activity
V. Singh, P.C. Mondal, A. Kumar, Y.L. Jeyachandran, S.K. Awasthi, R.D. Gupta and M. Zharnikov
Chemical Communications 50, 11484-11487 (2014)

27. Enhancement of optical and electrochemical properties via bottom-up assembly of binary oligomer system
P.C. Mondal, M. Chhatwal, Y.L. Jeyachandran and M. Zharnikov
Journal of Physical Chemistry C 118, 9578-9587 (2014)

26. Catalytic oxidation of ascorbic acid via copper-polypyridyl complex immobilized on glass
V. Singh, P.C. Mondal, M. Chhatwal, Y.L. Jeyachandran and M. Zharnikov
RSC Advances 4, 23168-23176 (2014)

25. Application of long wavelength ultraviolet radiation for modification and patterning of protein-repelling
monolayer
Y.L. Jeyachandran, T. Weber, A. Terfort and M. Zharnikov
Journal of Physical Chemistry C 117, 5824–5830 (2013)

24. Fabrication of protein patterns on the basis of short-chain protein-repelling monolayers
Y.L. Jeyachandran and M. Zharnikov
Journal of Physical Chemistry C 117, 2920–2925 (2013)

23. Surface confined hetero-metallic molecular dyads: merging the optical and electronic properties of Fe, Ru
and Os terpyridyl complexes
T. Gupta, P.C. Mondal, A. Kumar, Y.L. Jeyachandran and M. Zharnikov
Advanced Functional Materials 23, 4227–4235 (2013)

22. Comprehensive analysis of the effect of electron irradiation on oligo(ethylene glycol) terminated
self-assembled monolayers applicable for specific and non-specific patterning of proteins
Y.L. Jeyachandran and M. Zharnikov
Journal of Physical Chemistry C 116, 14950–14959 (2012)

21. Orientation and ordering in sequence- and length-mismatched surface-bound DNA hybrids
C. Howell, Y.L. Jeyachandran, P. Koelsch and M. Zharnikov
Journal of Physical Chemistry C 116, 11133-11140 (2012)

20. Controlled modification of protein-repelling self-assembled monolayers by ultraviolet light: the effect of the
wavelength
Y.L. Jeyachandran, A. Terfort and M. Zharnikov
Journal of Physical Chemistry C 116, 9019–9028 (2012)

19. “Turn on” electron-transfer-based selective detection of ascorbic acid via copper complexes immobilized on
glass
V. Singh, P.C. Mondal, Y.L. Jeyachandran, M. Zharnikov and T. Gupta

Analyst 137, 3216-3219 (2012)

18. Modification of polystyrene surface in aqueous solutions
J.A. Mielczarski, Y.L. Jeyachandran, E. Mielczarski and B. Rai
Journal of Colloids and Interface Science 362, 532-539 (2011)

17. Bottom-up assembly of multicomponent coordination-based oligomers
P.C. Mondal, Y.L. Jeyachandran, H. Hamoudi, M. Zharnikov and T. Gupta
Journal of Physical Chemistry C 115, 16398–16404 (2011)

16. Efficiency of blocking of non-specific interaction of different proteins by BSA adsorbed on hydrophobic and
hydrophilic surfaces
Y.L. Jeyachandran, J. Mielczarski, E. Mielczarski and B. Rai
Journal of Colloids and Interface Science 341, 136-142 (2010)

15. A simple method of surface functionalisation for immuno-specific immobilisation of Proteins
R.P. Kengne-Momo, Y.L. Jeyachandran, A. Assaf, C. Esnault, P. Daniel, J.F. Pilard, M.J. Durand,
F. Lagarde, E. Dongo and G. Thouand
Analytical Bioanalytical Chemistry 398, 1249-1255 (2010)

14. The effect of thickness of titanium nitride coatings on bacterial adhesion
Y.L. Jeyachandran, Sa.K. Narayandass
Trends Biomater. Artif. Organs 24, 90-93 (2010)

13. Quantitative and qualitative evaluation of adsorption/desorption of bovine serum albumin on
hydrophilic and hydrophobic surfaces
Y.L. Jeyachandran, E. Mielczarski, B. Rai and J. Mielczarski
Langmuir 25, 11614-11620 (2009)

12. The effect of thickness on the properties of titanium films deposited by dc magnetron sputtering
Y.L. Jeyachandran, B. Karunagaran, Sa.K. Narayandass and D. Mangalaraj
Materials Science and Engineering A 458, 361-365 (2007)

11. Properties of titanium nitride films prepared by direct current magnetron sputtering

Y.L. Jeyachandran, Sa.K. Narayandass, D. Mangalaraj, S. Areva and J. A. Mielczarski

Materials Science and Engineering A, 445-446, 223-236, 2007

10. Bacterial adhesion studies on titanium, titanium nitride and modified hydroxyapatite thin films

Y.L. Jeyachandran, S. Venkatachalam, B. Karunagaran, Sa.K. Narayandass, D. Mangalaraj, C. Y. Bao and

C. L. Zhang

Materials Science and Engineering C, 27, 35-41, 2007

9. Characterization of vacuum evaporated ZnSe thin films

S. Venkatachalam, Y.L. Jeyachandran, P.S. Kumar, A. Dhayalraj, D. Mangalaraj, Sa.K. Narayandass and

S. Velumani

Materials Characterization 58, 794-799 (2007)

8. Annealing effect of vacuum evaporated copper selenide and indium selenide thin films

P. Peranantham, Y.L. Jeyachandran, C. Viswanathan, N.N. Praveena, P. Chitra, D. Mangalaraj and

Sa.K. Narayandass

Materials Characterization 58, 756-764 (2007)

7. A study on bacterial attachment on titanium and hydroxyapatite based films

Y.L. Jeyachandran, Sa.K. Narayandass, D. Mangalaraj, C. Y. Bao, W. Li, Y.M. Liao, C. L. Zhang, L.Y. Xiao

and W.C. Chen

Surface Coatings and Technology 201, 3462-3474 (2006)

6. Properties of titanium thin films deposited by DC magnetron sputtering

Y.L. Jeyachandran, B. Karunagaran, Sa.K. Narayandass, D. Mangalaraj, T.E. Jenkins and P.J. Martin

Materials Science and Engineering A 431, 277-284 (2006)

5. The effect of surface composition of titanium films on bacterial adhesion
Y.L. Jeyachandran, Sa.K. Narayandass, D. Mangalaraj, C. Y. Bao and P.J. Martin
Biomedical Materials 1, L1-L5 (2006)

4. Preparation and electrical characterization of Cd0.8Zn0.2Te / Si thin films
K. Prabakar, S. Venkatachalam, Y.L. Jeyachandran, Sa.K. Narayandass and D. Mangalaraj
Vacuum 72, 475-479 (2004)

3. Optical constants of vacuum evaporated Cd0.2Zn0.8Te thin films
K. Prabakar, S. Venkatachalam, Y.L. Jeyachandran, Sa.K. Narayandass and D. Mangalara
Solar Energy Materials and Solar Cells 81, 1-12 (2004)

2. Microstructure, Raman and optical studies on Cd0.6Zn0.4Te thin films
K. Prabakar, S. Venkatachalam, Y.L. Jeyachandran, Sa.K. Narayandass and D. Mangalara
Materials Science and Engineering B 107, 99-105 (2004)

1. Structural properties of V2O5 thin films prepared by vacuum evaporation
R.T. Rajendra Kumar, B. Karunagaran, V. Senthil Kumar, Y.L. Jeyachandran, D. Mangalaraj,
Sa.K. Narayandass and K. Senthil
Materials Science in Semiconductor Processing 6, 543-546 (2003)

Reverse Chronological Orde

Alumini Reflections: