

Dr. Arunkumar Panneerselvam

ORCID iD: [0000-0002-3405-9890](https://orcid.org/0000-0002-3405-9890) Email arunpselvam@cftri.res.in

2019 Onwards

Principal Scientist

Department of Food Packaging Technology
CSIR-Central Food Technological Research Institute (CFTRI), Mysuru

Research Interests

Nanotechnology Applications in Food Packaging & Food Safety

Research Projects
Completed

- 1 **Graphene Oxide Based Nanocomposite Films for Food Packaging Applications, funded by SERB – P.I.**
- 2 **CSIR-Mission Mode Project on Nutrition & Nutraceuticals - Member**

Industry Projects
(Completed)

3 Projects on **Safety Evaluation of Food Packaging Materials** - Member
3 Projects on **Shelf-Life Evaluation of Food Products** - Member

Technologies

- Carbonated Fruit Juice Beverages from Selected Fruits**
- 1 **CSIR funded Fast Track Translation Project under Make in India Initiative Technology Transferred to 4 Food Beverage Industries in India.**
 - 2 **Antidiabetic Barley-Herb based (DiaLow GI-47), Wheat-Herb based (DiaLow GI-49), Barley+Wheat-Herb based beverage mixes DiaLow GI-53**

Students Guided

**B.Tech: 3, M.Tech: 2, M.Sc: 11
PhD: 4 (Ongoing)**

Teaching

M.Sc (Food Technology): Packaging Technology & Supply Chain, Coursework for **PhD (Chemical/Biological/Engineering Science)** students.
Short-term course for Entrepreneurs, Farmers & Industry Personnel.

National Committees

Member, Technical Committee of Bureau of Indian Standards (BIS)
Methods of Sampling and Test for Plastics Sectional Committee, **PCD 27**

Member, UG & PG Board of Studies in Food Technology
Jawaharlal Nehru Technological University, Anantapur, A.P. (2021-23)

Professional bodies

Member, Royal Society of Chemistry, U.K. (MRSC)
Life Member, Association of Food Scientists & Technologists of India

Professional Experience

2014-2019

Senior Scientist

Department of Food Packaging Technology, CSIR-CFTRI, India

2013–2014

Assistant Professor (C)

National Institute of Food Technology Entrepreneurship and Management, Thanjavur (NIFTEM-T) (formerly IICPT), India.
Taught Chemistry, Nanotechnology courses for B.Tech (Food Process Engineering) and M.Tech (Food Science & Technology) students.

2011–2012

Post-doctoral Research Associate

Department of Physics, **King's College London, U.K.**
Organometallic Synthesis of Reactive Nanoparticles for Radically New Solder Materials Partners: **Henkel Technologies, Schlumberger**

2008–2010

Post-doctoral Research Fellow

Department of Chemistry, **University College Cork, Ireland.**
Synthesis of Metal Fluoride and Metal Oxide Nanostructures by Supercritical Fluid & Chemical Vapour Deposition Methods
Industry Partners: **Intel, Seagate, Applied Materials & SAFC Hitech.**

2003–2004

Research Officer

Sanmar Speciality Chemicals Research Centre, Chennai, India.

2004–2008

Education

Ph.D (Chemistry)

The University of Manchester, Manchester, U.K.
Awarded Overseas Student Scholarship to pursue PhD.

Thesis

Preparation of Semiconductor Thin Films by Chemical Vapour Deposition Techniques

2001–2002

M.Phil (Inorganic Chemistry), CGPA: 4.74/6

Department of Inorganic Chemistry, University of Madras, Chennai, India.

1999–2001

M.Sc (Chemistry) First Class (64.7%)

Department of Chemistry, Bharathidasan University, Tiruchirappalli, India.

1996–1999

B.Sc (Chemistry), First Class with Distinction (78.5%)

Rajah Serfoji Govt. College, Thanjavur (Bharathidasan University)

List of Publications (Arunkumar Panneerselvam)

<https://scholar.google.com/citations?user=YKmnUGgAAAAJ&hl=en>

- 1 Lokesh Madhurya, **Arunkumar Panneerselvam**, Aswathi Kozhissery Sreekrishnakumar, Amal Anand, Tanushree Shambu Gowda and Subramanian Ezhil Vendan, “Intensification of biofumigant stability: preparation of peppermint-piperitone nanoemulsion for effective fumigation against stored-product beetles”, **Journal of Food Science and Technology**, **2025, Accepted; Impact Factor: 2.6**
- 2 K. V. Aswathy, K. C. Beulah, M. Nalina, D. Sunil Ambedkar, A. Leela Sairam, Poornima Priyadarshini*, **Arunkumar Panneerselvam***, Pooja J. Rao*, “Hydroxypropyl methylcellulose stabilized clove oil nanoemulsified orodispersible films: Study of physicochemical properties, release profile, mucosal permeation and anti-bacterial activity”, *International Journal of Biological Macromolecules*, **2024, 283, 137577, Impact Factor: 7.7, Citations: 1**
- 3 Vani Vijay, **Arunkumar Panneerselvam**, J.R. Manjunatha, Madan Kumar Perumal, “Morin/hydroxypropyl- β -cyclodextrin inclusion complex showed higher in vivo oral bioavailability and inhibition on LX-2 cell growth”, **Food Bioscience**, **2024, 61, 104897, Impact Factor: 4.8, Citations: 3**
- 4 Lokesh Madhurya, **Arunkumar Panneerselvam**, Pratiksha Prabhakar Gawali, Aswathi Kozhissery Sreekrishnakumar, Urvashi Sahu and Subramanian Ezhil Vendan, “Profiling of semiochemicals from three stored product beetles by headspace solid-phase microextraction coupled with gas chromatography-mass spectrometry”, **Natural Product Research**, **2024, 38(17), 3063-3069; Impact Factor: 2.1, Citations: 2**
- 5 Srikanth R. Veerabhadraiah, Sweta Maji and **Arunkumar Panneerselvam***, “Solvent influence on the formation of ZnO nanoparticles by sonochemical technique and evaluation of UV-blocking efficiency”, *Journal of Crystal Growth*, **2022, 579, 126430; Impact Factor: 1.7, Citations: 12.**
- 6 Arpita Das, **Arunkumar Panneerselvam**, Sudheer Kumar Yannam and Vallikannan Baskaran, “Shelf-life nutritional and sensory quality of cereal and herb based low glycaemic index foods for managing diabetes”, *Journal of Food Processing and Preservation*, **2022, 46, e16162; Impact Factor: 2.0, Citations: 3.**
- 7 S. R. Stürzenbaum, M. Höckner, **A. Panneerselvam**, J. Levitt, J-S. Bouillard, S. Taniguchi, L-A. Dailey, R. A. Khanbeigi, E. V. Rosca, M. Thanou, K. Suhling, A. V. Zayats and M. Green, “Biosynthesis of luminescent quantum dots in an earthworm”, *Nature Nanotechnology*, **2013, 8, 57-60; Impact Factor: 38.1, Citations: 142.**
- 8 Mark Armstrong, **Arunkumar Panneerselvam**, Colm O'Regan, Michael Morris and Justin Holmes “Supercritical Fluid Synthesis of FeF₂ and CoF₂ Li-Ion Conversion Materials”, *Journal of Materials Chemistry A*, **2013, 1, 10667-10676, Impact Factor: 10.7, Citations: 54.**

List of Publications (Arunkumar Panneerselvam)

<https://scholar.google.com/citations?user=YKmnUGgAAAAJ&hl=en>

- 9 Hiren R. Kotadia, **Arunkumar Panneerselvam**, Mark W. Sugden, Hector Steen, Mark Green and Samjid H. Mannan, “Electronics assembly and high temperature reliability using Sn-3.8Ag-0.7Cu solder paste with Zn additives”, *IEEE Transactions on Components, Packaging and Manufacturing Technology*, **2013, 3, 1786-1793, Impact Factor: 2.3, Citations: 9.**
- 10 H. R. Kotadia, **A. Panneerselvam**, O. Mokhtari, M. A. Green and S. H. Mannan, “Massive spalling of Cu-Zn and Cu-Al intermetallic compounds at the interface between solders and Cu substrate during liquid state reaction”, *Journal of Applied Physics*, **2012, 111, 074902 (1-6); Impact Factor: 2.7, Citations: 14.**
- 11 **Arunkumar Panneerselvam**, Ganga Periyasamy, Karthik Ramasamy, Mohammad Afzaal, Mohammad A. Malik, Paul O’Brien, Neil A. Burton, John Waters and Bart E. van Dongen, “Factors controlling material deposition in the CVD of nickel sulfides, selenides or phosphides from dichalcogenoimidodiphosphinato complexes: deposition, spectroscopic and computational studies”, *Dalton Transactions*, **2010, 39, 6080-6091**, (Invited Paper in Themed issue: **Frontiers of Synthetic Solid State Chemistry**)
Impact Factor: 3.5, Citations: 18.
- 12 **Arunkumar Panneerselvam**, Chinh Q. Nguyen, Mohammad A. Malik, Paul O’Brien and James Raftery, “The CVD of silver selenide films from dichalcogenophosphinato and imidodichalcogenodiphosphinosilver(I) single-source precursors”, *Journal of Materials Chemistry*, **2009, 19, 419-427; Impact Factor: 6.62, Citations: 60.**
- 13 **Arunkumar Panneerselvam**, Mohammad A. Malik, Paul O’Brien and Madeleine Helliwell, “The Aerosol-Assisted CVD of silver films from single-source precursors”, *Chemical Vapour Deposition*, **2009, 15, 57-63; Impact Factor: 1.33, Citations: 17.**
- 14 **Arunkumar Panneerselvam**, Mohammad A. Malik, Paul O’Brien and James Raftery, “The CVD of silver sulfide and silver thin films from a homoleptic crystalline single-source precursor”, *Journal of Materials Chemistry*, **2008, 18, 3264-3269; Impact Factor: 6.62, Citations: 30.**
- 15 **Arunkumar Panneerselvam**, Mohammad A. Malik, Mohammad Afzaal, Paul O’Brien and Madeleine Helliwell, “The chemical vapor deposition of nickel phosphide or selenide thin films from a single precursor”, *Journal of the American Chemical Society*, **2008, 130, 2420-2421; Impact Factor: 14.5, Citations: 203.**

List of Publications (Arunkumar Panneerselvam)

<https://scholar.google.com/citations?user=YKmnuGgAAAAJ&hl=en>

- 16 **Arunkumar Panneerselvam**, Chinh Q. Nguyen, John Waters, Mohammad A. Malik, Paul O'Brien, James Raftery and Madeleine Helliwell, "Ligand influence on the formation of P/Se semiconductor materials from metal-organic complexes", *Dalton Transactions*, **2008**, **4499-4506** (Invited Paper in Themed issue: **The Renaissance of Main Group Chemistry**); **Impact Factor: 3.5, Citations: 48.**
- 17 Roger M. Jarvis, Helen E. Johnson, Emma Olembe, **Arunkumar Panneerselvam**, Mohammad A. Malik, Mohammad Afzaal, Paul O'Brien and Royston Goodacre, "Towards quantitatively reproducible substrate for SERS", *Analyst*, **2008**, **133**, **1449-1452**; **Impact Factor: 3.6, Citations: 32.**
- 18 K. R. Krishnapriya, D. Saravanakumar, **P. Arunkumar** and M. Kandaswamy, "Synthesis of new oxamide-based ligand and its coordination behaviour towards copper(II) ion: Spectral and electrochemical studies", *Spectrochim. Acta A*, **2008**, **69**, **1077-1081**; **Impact Factor: 4.3, Citations: 12.**
- 19 May C. Copey, **Arunkumar Panneerselvam**, Mohammad Afzaal, Tristram Chivers, Paul O'Brien, "Syntheses, X-ray structures and AACVD studies of group 11 ditelluroimidodiphosphinate complexes", *Dalton Transactions*, **2007**, **1528-1538**; **Impact Factor: 3.5, Citations: 42.**
- 20 B. S. Krishnamoorthy, S. Chandrasekar, **P. Arunkumar** and K. Panchanatheswaran, "Dibenzyl(dichloro)(1,10-phenanthroline)tin(IV) chloroform solvate", *Applied Organometallic Chemistry*, **2005**, **19**, **186**; **Impact Factor: 3.7, Citations: 10.**

Book Chapter

- 1 **Arunkumar Panneerselvam** and Mark Green, "Recent Advances in Quantum Dot Synthesis", *Nanoscience, Volume 1: Nanostructures through Chemistry*, **2013**, **1**, **208-243**; **Citations: 6.** ISBN: 978-1-84973-435-6; Royal Society of Chemistry Specialist Periodical Reports Series.

Conference Proceedings

- 1 H. R. Kotadia, **A. Panneerselvam**, M. A. Green, M. P. Clode, S. H. Mannan and H. Steen, Reliability of electronics assembled using SAC + Zn solder pastes, *IMAPS High Temperature Electronics Conference (HiTEC)*, **May 8-10, 2012**, 000051-000057, Albuquerque, USA.
- 2 Hiren R. Kotadia, **Arunkumar Panneerselvam**, Mark A. Green and Samjid H. Mannan, Limitations of Nanoparticle Enhanced Solder Pastes for Electronics Assembly, *IEEE Nano 2012, 12th IEEE International Conference on Nanotechnology*, 20-23 August 2012, Birmingham, U.K., **Citations: 3.**