

Dr. G. Padmanabham

Director

International Advanced Research Centre
for Powder Metallurgy & New Materials (ARCI)
Hyderabad



Dr. Padmanabham obtained his Ph.D in Welding Technology from IIT Delhi for his work on welding of Al-Li alloys. After his stints as a Design & Development Engineer at Bharat Dynamics Limited, Hyderabad and Scientific Officer in the Department of Science & Technology, New Delhi he joined ARCI, Hyderabad in 2005 to head the Centre for Laser Processing of Materials. Additive Manufacturing; Materials joining; Application of Lasers in Materials Processing; Surface Engineering and Technology Transfer & Commercialisation are his areas of interest. Under his leadership, the Centre for Laser Processing of Materials developed a range of applications for automotive, power, aerospace, electronics, nuclear and other sectors and also provided expert help to several other organizations.

He is a recipient of Abdul Kalam Technology Innovation National Fellowship awarded by INAE, Materials Research Society of India Medal, Distinguished Alumni Award of NIT, Warangal, Andhra Pradesh Scientist Award and Life Time Achievement Award of SAE India. He is an elected Fellow of Indian National Academy of Engineering (INAE), The National Academy of Sciences, India (NASI), Andhra Pradesh Academy of Sciences, Telangana Academy of Sciences, Indian Welding Society and the Institution of Engineers (India).

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International Advanced Research Centre for Powder Metallurgy & New Materials (ARCI)

Hyderabad 500005, India

Date of Birth:

10th August 1964

Academic Qualifications:

- Bachelor of Engineering (Mechanical) from Andhra University, Visakhapatnam in 1985
- Master of Technology (Industrial Metallurgy) from National Institute of Technology, Warangal in 1987
- Ph.D (Welding) from Indian Institute of Technology Delhi in 2002

Areas of Research & Specialisation:

- Materials Joining
- Laser Processing of Materials
- Surface Engineering
- R&D Management
- Technology Transfer & Commercialisation

Professional Experience:

Jan 2016 – Till date

Director, ARCI Hyderabad

- Overall leadership to the organization for successful development of technologies in the fields of engineering materials and advanced manufacturing and transfer to the industry
- Guidance to R&D activities on various materials and processes including nanomaterials & nano-composite coatings, ceramic processing, powder metallurgy, engineered coatings, laser based manufacturing, automotive energy materials, solar energy materials and carbon materials through the value chain of conceptualization to commercialization
- Develop a vision for identified R&D areas and launch appropriate cutting edge research programmes through deployment of right infrastructure and manpower
- Research & development in the areas of materials joining and laser processing of materials for solving industrial problems and know-how

transfer, with simultaneous development of specialized human resources for knowledge absorption into industry

- Development of technology transfer and collaboration models for successful transfer of technologies to industry for commercialization
- Enhance the outreach of the organization to forge mutually beneficial collaborations with industry, R&D organisations, academic institutions at national and international level.

May 2005 – Dec 2015

***Associate Director, ARCI Hyderabad &
Team Leader, Centre for Laser Processing of Materials,
ARCI Hyderabad***

As Associate Director of ARCI

- **Steering technology transfer/product supply** activities to civilian and strategic sectors through **establishing streamlined processes** such as
 - Formulation of appropriate engagement models / agreements covering a variety of scenarios;
 - Costing of projects/technologies;
 - Development of intellectual property development indices for scientists to determine the readiness for engaging with prospective technology receivers;
 - Enhancing outreach through appropriate marketing strategies
 - Some of the successful technology transfers steered are:
 - Silica based aerogel sheets for insulation applications (currently under negotiation)
 - Sol-Gel Nanocomposite Coatings for colored glass
 - Zinc Sulphide IR transparent ceramics for strategic applications
 - Nanotitania for self-cleaning applications
 - Nanosilver for antibacterial textile applications
- **Formulation and implementation of international joint projects and technology demonstration centres**
 - Setting of ARCI-SLM Joint Technology Demonstration on Metal Additive Manufacturing

- o Conceptualized and built a versatile ultrafast micromachining system in collaboration with the **National Research Council of Canada**. Within one year of its commissioning a dozen applications for microtexturing, microcutting, microdrilling and processing of transparent materials were delivered
- o Conceptualised and implemented a consortium project involving four Indian R&D institutions, four **German Fraunhofer Institutes** and an automotive OEM to develop joining technologies for dissimilar material combinations of Al, Steel and Plastic for lightweighting applications in automotive bodies
- o Sol-Gel nanocomposite coatings technology centre was implemented in collaboration with a **German company** to absorb the technology and demonstrate it to Indian industry, resulting in the first technology on colored coatings on glass being transferred to a start-up company and multinational companies awarding technology development contracts to this centre.
- **Providing overall leadership and vision to four technology centres** Laser Processing, Ceramics, Sol-Gel nanocomposite coatings, and Carbon materials
 - o The laser centre established itself as a nationally unique facility looked upon for help by other R&D institutions as well as industries for new solutions. Several industries opted for laser processing after technology demonstration at the Centre for Laser processing of Materials. The facilities and activities expanded from cutting and hardening operations to welding, brazing, hybrid welding, cladding, micromachining and additive manufacturing. About 30 industry driven projects were implemented.
 - o The ceramics group developed high level of expertise in the field of transparent ceramics and also successfully transfer IR dome technology to the strategic sector. These capabilities increased their outreach and application areas.
 - o The sol-gel nanocomposite group was guided towards better outreach through diversification into newer functionalities as per Indian industry needs such as solar selective coatings, anti-tarnish coatings, architectural coatings and corrosion resistant coatings. Several practical aspects have been thoroughly evaluated in order to enable transfer of technology and the first technology transfer has been effected to a startup company. The

centre has built up the capabilities to an extent that one of the biggest aircraft company awarded a research contract.

- o The carbon materials group apart from establishing three different techniques of producing Carbon Nano Tubes (CNT), has also successfully collaborated with the laser group to achieve high field emission properties in patterned aligned CNT forests, for strategic applications

As Team Leader of the Centre for Laser Processing of Materials:

- **R&D in the field of laser processing of materials**, resulting in **Development of technological processes** such as laser welding, laser surface engineering, laser machining, micromachining and additive manufacturing for application in automotive, aerospace, nuclear, power, defense and electronics
- **Creation of nationally unique/advanced facilities** through internal system building efforts such as
 - o Adaptation of laser cutting system into a laser welding system,
 - o Hybridizing the laser system with arc welding,
 - o Integration of a versatile ultrafast micromachining system in collaboration with a Canadian institute,
 - o Integrating the existing diode laser for robotic laser brazing,
 - o Internal bore laser cladding head integration, and
 - o Selective Laser Melting for Additive Manufacturing

Based on the experience and knowledge generated in the group, CLPM helped other institutions in setting up laser processing facilities such as, laser welding system at VSSC Trivandrum, laser cladding system at NML, Jamshedpur, fiber laser welding system at DRDL Hyderabad, laser microwelding systems at RCI, VIT and Annamalai University and laser hybrid welding and cladding system at IGCAR Kalpakkam.

- **Conceptualisation, coordination and implementation of major multi-institutional consortium projects** involving IITs, automotive OEMs, German Fraunhofer institutes and private partners in a multidisciplinary approach for developing joining technologies by laser welding, laser brazing and CMT brazing for
 - Tailor Welded Blanks (TWB)
 - Multi-material lightweight designs

- **Academic guidance :**
 - Guidance to 8 – PhD students
 - More than 30 M.Tech/B.Tech Theses/Projects

Feb 1990 – May 2005

Worked as a Scientific Officer in the Department of Science & Technology, New Delhi dealing with

- Technology Missions on New Materials for example, applications of superconductive materials
- International Science & Technology Cooperation with Soviet Union, Japan, Germany and East European countries resulting in
 - Establishment of centres of excellence in the field of materials such as ARCI, Hyderabad with Soviets and Centre for Laser Processing of Materials with Israelis
 - Access to Indian scientists to international mega research facilities such as photon factory and super photon ring of Japan, DESY, BESSY and GSI of Germany, including initiatives to build Indian beam lines. This developed a big accelerator user community for the Indian facilities
- Broad basing the Indo-German cooperation to cover senior scientists to graduate students to carry out a variety of collaborations for basic research to industrial research
- Research in the areas of Metal-Ceramic Joining and Weldability of Al-Li alloys towards Ph.D

Details of roles/responsibilities and achievements in this period are as follows:

**2000 – 2005 *Director & Scientist-F (International Cooperation),
Department of Science & Technology, New Delhi***

- Formulation, implementation and co-ordination of India's Science & Technology co-operation programmes with Germany, Switzerland and Sweden. Some important achievements are:
 - Implementation of DST-DAAD Project based Personnel Exchange Programme
 - Institution of a programme for participation of young Indian scientists in the Meeting of Nobel Laureates and Students in Lindau, Germany
 - Indo-German 2+2 projects formulation and implementation

- o Programmes for access of international mega research facilities to Indian scientists
- o Initiation of dialogue India's participation in the international mega project "FAIR" at GSI Darmstadt
- o Initiation of DST-DFG project based cooperation programme
- o Initiation of Max Planck – India cooperation in the form of partner groups
- Identification of projects/collaborators for international collaboration in the field of Materials – as Member Secretary of the Project Advisory Committee (PAC)
- Development of programmes with developing countries through NAM S&T Centre

June 1999 – Sept 2000

German Academic Exchange Fellow (DAAD) at the TU-Dresden Germany

- Research on Pulsed-MIG welding and Laser welding of Al-Li alloys towards Phd thesis

Feb 1994 – June 1999

Principal Scientific Officer (International Cooperation), Department of Science & Technology, New Delhi

- Formulation, implementation and co-ordination of India's Science & Technology co-operation programmes with Japan, Israel, Belarus and several East European countries. Some important achievements are:
 - o India-Japan Science Council Programme comprising of five S&T areas, Postdoctoral and Doctoral fellowship programme
 - o Assisted the Area Coordinator for "Advanced Materials" in implementation of the programme, in organising events such as Indo-Japan conference on Ultra high voltage transmission electron microscopy (UHVTEM) and Asian Academic Seminar
 - o Conceptualization and Establishment of Centre for Laser Processing of Materials (CLPM) in Hyderabad in collaboration with Israel
 - o Programmes for access of international mega research facilities to Indian scientists such as KEK, Tsukuba and Spring-8 accelerators
 - o Concept paper on possible construction of Indian beam line at Spring-8 and negotiations with Japanese authorities
 - o India-Japan bilateral intergovernmental S&T cooperation programme

July 1993 – Feb 1994

***JICA (Japan International Cooperation Agency) Fellow,
University of Industrial Technology, Hachioji, Tokyo,
Japan***

- High Technology Research Course on “Metal-Ceramic Joining Technology Development”.
 - Developed vacuum brazing process cycle using ductile active braze fillers
 - Evaluated the joints for mechanical properties and metallurgical features

Feb 1992- July 1993

Senior Scientific Officer-I (Indo-Soviet ILTP Programme & East Europe), Department of Science & Technology, New Delhi

- Formulation, implementation and co-ordination of India’s Science & Technology co-operation programmes with Soviet Union. Some important activities are:
 - Evaluation, identification, funding and monitoring of bilateral collaborative projects in the areas of Engineering Materials, Electronic Materials and Applied Mechanics through Project Advisory Committees
 - Co-ordination of the project “Establishment of Indo-Soviet Advanced Research Centre for Powder Metallurgy (ARCI)” as nodal officer
 - Monitoring progress and providing inputs to the Advisory Committee and the Governing Council
 - Initiating mid-course corrections in project scope and collaborations due to disintegration of Soviet Union
- Identification of S&T areas of mutual interest and implementation of programmes of cooperation with East European Countries, Poland and Hungary

Feb 1990 – Feb 1992

Senior Scientific Officer Grade-I (Technology Missions – New Materials), Department of Science & Technology, New Delhi

- Formulation, coordination of National Superconductivity Programme – Application development
- Institution of National Superconductivity fellowships
- Preparation of concept papers for initiation of new materials related technology missions
 - Intelligent Processing of Materials
 - Superconductor based MRIs etc.

May 1987 – Feb 1990

Junior Manager (Design & Development), Bharat Dynamics Limited, Hyderabad

- Indigenization of materials for mechanical components of a strategic product under license production. Tasks included:
 - Design evaluation & Material selection;
 - Qualification testing;
 - Standardization in production, assembly & quality control;
 - Inspection and acceptance

Awards/Honors/Fellowships/Recognitions:

1. INAE Distinguished Visiting Professor (July 2021 – June 2022) at University of Hyderabad.
2. Abdul Kalam Technology Innovation National Fellowship (2019) awarded by INAE
3. Materials Research Society of India (MRSI) Medal – 2013
4. Distinguished Alumni Professional Achievement Award of NIT, Warangal (2017)
5. Andhra Pradesh Scientist Award (APSA-2012) awarded by AP Council of Science & Technology, Government of Andhra Pradesh
6. Lifetime Achievement Award by SAE India (Southern Section) (7/12/2017)
7. Co-Chair, Indo-German Frontiers of Engineering Symposia (2013 and 2014) organized by DST India and Alexander Van Humboldt Foundation, Germany
8. Chairman, International Institute of Welding (IIW) Special Group-Research Collaboration Symposium 2016
9. Dr. S P Luthra Memorial Lecture – 28th National Convention of Mechanical Engineers, organized by the Institution of Engineers (India)
10. German Academic Exchange Service (DAAD) Fellowship 1999-2000 and DAAD Revisiting postdoctoral fellowship – 2006.

Fellowship/Membership of National/International Academies/Professional Bodies:

1. Fellow of Indian National Academy of Engineering (INAE) (2020).
2. Fellow of The National Academy of Sciences, India (NASI) (2019).
3. Fellow of Andhra Pradesh Akademi of Sciences (2013)
4. Fellow of Telangana Akademi of Sciences (2015)
5. Fellow of Indian Welding Society (2012)
6. Fellow of Institution of Engineers (India) (2015).
7. Founder treasurer (2002-2004) and Vice-Chairman Hyderabad Centre (2006 onwards) and Permanent Invitee, National Council, Indian Welding Society (IWS)
8. Chairman, Indian Institute of Welding, Hyderabad (2014-16) & Life Member
9. Chairman, SAE International, Hyderabad Division (2014 onwards)
10. Life Member of Indian Institute of Metals (IIM)

Other Professional Assignments:

Member of Research Council / Governing Board / Board of Studies

1. Member, Academic Council, GITAM (Deemed to be University), Feb 2021 – Jan 2023.
2. Member of CII National Committee on R&D and Innovation 2020-21.
3. Chairman, Mission Mode Project on 'Advanced Materials', Council of Scientific and Industrial Research, Jan 2020 onwards
4. Expert Member, Peer Review Committee for DMRL Project on "Materials and Manufacturing Processes for Long Duration Hypersonic Cruise and Glide Vehicles", Dec., 2019 onwards.
5. Member, Programme Advisory Committee (PAC) of SERB – SUPRA (3 years from Aug 2019)
6. Member, Industrial Research Committee of Indo-French Centre for the Promotion of Advanced Research (CEFIPRA) (May 2019 onwards)

7. Member, Board of Studies, Mechanical Engg. Department, Gayatri Vidya Parishad College of Engineering (Autonomous) Visakhapatnam (Apr 2019 onwards).
8. Chairman, Project Advisory Committee (PAC) of Materials and Engineering Sciences, Int. Bilateral Coop. Division, DST (Aug 2018 – Aug 2021).
9. Member, Project Advisory Committee (PAC) of IMPRINT-2, SERB (May 2018 onwards)
10. Member, CSIR Expert Committee of Fast Track Translational Projects on 'Mining, Minerals, Metals and Materials (4M), CSIR (2018 onwards).
11. Council Member, The Indian Institute of Metals (2018-19).
12. Member, Research Council, CSIR-National Physical Laboratory, New Delhi (2017 onwards)
13. Member, Research Advisory Committee on Surface Engineering, National Aerospace Laboratories, Bengaluru
14. Director, Board of Directors, Research and Innovation Circle of Hyderabad (RICH) of Govt. of Telangana – Feb 2020 onwards (*Member – from June 2017 – Jan 2019*).
15. Member, Governing Body, Indo-German Science & Technology Centre, Dept. of S&T, Govt. of India (2016 onwards)
16. Member, Research Advisory Board of Nanotech Research Innovation and Incubation Centre (NRRIC) of PSG Institute of Advanced Studies, Coimbatore (2017-20).
17. Member, Review Committee, Nano Mission Programme (2nd Phase) (2017 onwards)
18. Vice-Chair Person, Mechanical Engineering Assessment Board of RAC, DRDO.
19. Member, University Research Council (URC) of SRM University-AP (2018 onwards).

20. Member, Governing Council of GMR Institute of Technology, Rajam, Andhra Pradesh (2017 onwards)
21. Member, Board of Studies, Amrita Institute of Technology, Coimbatore
22. Member, Board of Studies in Mechanical Engg., Acharya Nagarjuna University, Andhra Pradesh (2016 onwards)
23. Member, Board of Studies, Sreenidhi Institute of Science & Technology, Hyderabad (2015 onwards).
24. Member, Board of Studies, RVR & JC College of Engineering, Guntur (2014-16).
25. Reviewer of proposals for DST, TDB, DRDO, DHI, Indo-German S&T Centre, Indo-US S&T Forum

International Conferences Organised:

1. Chairman, IIW 6th Welding Research and Collaboration Colloquium, April 7-9, 2016, Hyderabad.
2. Chairman, International Conference on Application of Lasers in Manufacturing 2015 (CALM 2015), September, New Delhi jointly with Messe Muenchen India
3. Chairman, International Workshop on "Lasers in Automotive", September 2016 concurrently with Laser World of Photonics, Bengaluru
4. Co-Chair of the Indo-French workshop on "Automotive Manufacturing Technologies", September 2008, Chennai
5. Co-Chairman for ARCI-SAE India Toptech Workshop on Laser Processing for Automotive Applications, 2007 at ARCI, Hyderabad

Academic Activity:

1. Guidance to 8 PhD theses and more than 30 M.Tech. theses
2. Reviewer of Ph.D. / M.Tech theses for IIT Madras, IIT Bombay, Univ. of Hyderabad and Jadavpur University

Reviewer for National/International Journals:

1. American Welding Journal;
2. Science & Technology of Welding and Joining;
3. Journal of Materials Processing Technology;
4. Metallurgical & Materials Transactions A;
5. Journal of Materials Engineering & Performance;
6. Journal of Advanced Manufacturing Technology;
7. Materials & Design;
8. Materials Science and Engineering;
9. Sadhana;
10. Indian Academy of Sciences Proceedings in Engineering Sciences;
11. Vacuum.

Editorial Board Member :

1. Indian Welding Journal;
2. International Journal of Additive and Subtractive Manufacturing

Publications/patents/invited lectures:

● Projects implemented	-	30
● Patents filed/granted	-	14
● Invited lectures	-	>130
● Publications in Journals and Proceedings	-	>100
● International/National Conference papers	-	24
● Books Edited	-	1
● Book Chapters Authored	-	4
● Invited Overview Articles	-	1

Projects implemented

Several technology development, application development and product supply projects in the fields of laser processing of materials, ceramics processing, sol-gel nanocomposite coating for various industrial sectors were implemented. List is as follows:

Automotive

- Development of laser welding process for fabrication of tailor welded blanks (TWB) for light weight automotive body construction
- Development of techniques for joining aluminium to steel for weight reduction of automotive bodies
- Laser surface hardening crankshafts
- Laser hardening of door hemming beds for improved life
- Reconstruction of used diesel engine parts by laser deposition
- Laser additive methods for repair of pressure die casting dies
- Laser surface microtexturing of engine component materials for liners, piston rings and bearings
- Micro-joining of sensors for torque measurement and exhaust gas temperature measurement
- Laser microstructure tailoring of automotive steel sheets for improved performance

Power / Energy / Oil

- Establishment of National Centre for Advanced Materials and Manufacturing Technologies of Coal based Clean Energy generation
- Life improvement of thermal power plant burner tips by laser cladding
- Laser deposition method for reclamation of shafts used in oil refinery
- Laser and laser hybrid welding of IN617 and Haynes 230 thick sections for ultrasupercritical boiler component applications
- Microwelding of Li-ion battery casings
- Solar cell scribing

Aerospace & Defense

- Development of laser drilling process for cooling holes in aero-engine components such as HPT vanes, combustion liners
- Development of transparent ceramics for IR seekers and armour applications

- Laser and laser hybrid welding of maraging steels for rocket motor casings and other assemblies
- Laser Welding of titanium alloys for gas bottle application
- Laser weldability studies on high temperature Nb-/Ni- based alloys
- Laser clad repair of helicopter pinion housing

Nuclear

- Laser and Laser-Hybrid Welding of Reduced Activation Ferritic-Martensitic Steels for ITER Test Blanket Module (Fusion reactor)
- Laser clad coating of fast breeder reactor components

Electronics

- Laser assisted additive manufacturing of wave structures for microwave technology
- Laser micromachining of control grids for microwave generators
- Laser scribing of aligned carbon nanotube forests for field emission applications
- Microcutting of Ni foils for microheaters
- Laser welding of aluminium alloys for Li-ion batteries and electronic packaging
- Micromachining of layered ceramic boards for component insertion
- Microwelding of EMI shielding boxes
- Flexible PCB cutting

The above projects received a total funding to the tune of Rs 80 crores. Apart from these, several research projects were carried out in collaboration with academic institutions including:

- Laser alloying of Ti-6Al-4V for improved wear resistance aimed at brake pad applications
- Laser assisted SHS process for in situ generation of hard phases for improved surface hardness and wear resistance
- Transparent ceramics for dental brackets
- Laser cutting and welding of borated steels

List of Patents Filed

1. Refurbishment of aircraft components using laser cladding (Appln. No. 201911007994, dtd. 28/2/2019 (National).
2. An Eco-friendly incinerator to dispose off the used sanitary napkins and biomedical waste (Appln. No. 201821021430, dtd. 07/06/2018) (National).
3. Laser-based clad coatings for protecting the powerplant components for life enhancement (Appln. No. 201811039663, dtd. 19/10/2018) (National).
4. A System for treating a surface of bearing components and a process thereof (Appln. No. 201711046511) (National).
5. An Improved Process for Preparing Durable Multifunctional Coatings On Metal/Alloy Substrates (Appln. No. 201711020529) (National).
6. A Laser-based Surface Processing Apparatus and a Method to Process Metallic Materials and Components (Appln. No. 201611034362) (National).
7. A Method of Preparing of Anti Tarnishing Organic-Inorganic Hybrid Sol-Gel and Coating the same (Appln. No. 2049/DEL/2015) (National).
8. Multi-track laser surface hardening of low carbon cold rolled close annealed (CRCA) grades of steel [Appln. No. 1411/KOL/2013 (National); Appln. No. US15/103343 (USA); Appln. No. AU2014362928A (Australia) & Appln. No. EP3080313A1 (Europe)].
9. A novel laser surface modification technique for hardening steels (Appln. No. 337/DEL/2013) (National).
10. A multi track laser beam process of surface hardening of a full size steel blank of low carbon steel for producing automotive components (Appln. No. 600/KOL/2012) (National).
11. An improved composition for Solar Selective Coatings on metallic surfaces and a process for its preparation and a process for its coatings using the composition" (Appln. No. 3324/DEL/2011) (National).
12. An Improved Abrasion Resistant and Hydrophobic Composition for Coating Plastic Surfaces and a Process for its Preparation (Granted No. 297072, dt. 24/05/2018) (National).
13. An Improved Composition for Coating Metallic Surfaces, and A Process for Coating such Surfaces using the Composition (Granted No. 290592, dt. 14/12/2017) (National).
14. Improved Scratch and Abrasion Resistant Compositions for Coating Plastic Surfaces, a Process for their Preparation and a Process for Coating using the Compositions (Granted No. 295221, dt. 28/03/2018) (National).

List of Publications in Refereed Journals

1. Santhoshsarang D M, Divya K, Gururaj Telasang, S. Soundarapandian, Ravi Bathe, and G. Padmanabham, "Additively Manufactured High Performance Conformally Cooled H13 Tool Steel Die Insert for Pressure Die Casting", Transactions of the Indian National Academy of Engineering (Accepted 2021).
2. G. Padmanabham, Aqeel Mohd., J.P. Gautam, S.M. Shariff, "Liquation cracking in Inconel 617 alloy by Laser and Laser-Arc Hybrid welding", J. of Materials & Manufacturing Processes, 2021 (in press).

3. J.Senthilselvan, K.Monisha, M.Gunaseelan, S.Yamini, S. ArunKumar, K.Kanimozhi, J.Manonmani, S.M.Shariff, G.Padmanabham, "High power diode laser nitriding of titanium in nitrogen gas filled simple acrylic box container: Microstructure, phase formation, hardness, dendrite and martensite solidification analyses", *Materials Characterization*, Vol. 160, February 2021 (in press).
4. Ramakrishna M, Suresh Koppoju, Gururaj Telasang, Rajesh Korla, Padmanabham G, "Effect of solutionizing temperature on the microstructural evolution during double aging of powder bed fusion-additive manufactured IN718 alloy", *Materials Characterization*, 72, 110868.
5. Wasekar Nitin P., Bathini Lavakumar, Ramakrishna L, Rao D. Srinivasa, G. Padmanabham "Pulsed electrodeposition, mechanical properties and wear mechanism in Ni-W/SiC nanocomposite coatings used for automotive applications", *Applied Surface Science*, Vol.: 527 (Oct 2020)
6. Gupta, Honey, Mothkuri Sagar, McGlynn Ruairi, Carolan Darragh, Maguire Paul, Mariotti Davide; Jain, P.K, Rao, Tata Narasinga, G. Padmanabham, Chakrabarti Supriya "Activated Functionalized Carbon Nanotubes and 2D Nanostructured MoS₂ Hybrid Electrode Material for High-Performance Supercapacitor Applications", *Physica Status Solidi A - Applications and Materials Science*, Vol.: 217, Issue: 10 (May 2020)
7. G. Padmanabham, L Subhashini, K.V. Phani Prabhakar and Swati Ghosh, "Comparison of laser-MIG hybrid and autogenous laser welding of M250 maraging steel thick sections - understanding the role of filler wire addition", *The International Journal of Advanced Manufacturing Technology*, Vol. 107, pp. 1581-1594 (April, 2020).
8. D. Narsimhachary, S.M. Shariff, S. Pal, G. Padmanabham, A. Basu, "Influence of Joint Configuration on Mechanical Properties of Laser Weld-Brazed Aluminum to Steel Joint", *Materials Science Forum*, Vol. 978, pp 174-180 (2020).
9. Pawan Kumar Chellu, R. Padmanaban, R. Vaira Vignesh, Abbelash S Menon, S. M. Shariff and G. Padmanabham, "Experimental Study on Laser Welding of AISI 304 Steel with Design of Experiments Approach", *IOP Conf. Ser.: Mater. Sci. Eng.* Vol. 577 (2019).
10. Mobin M. Mathew, Ravi N. Bathe, G. Padmanabham, R. Padmanaban, S. Thirumalini, "A study on the micromachining of molybdenum using nanosecond and femtosecond lasers", *The International Journal of Advanced Manufacturing Technology*, Vol. 104, pp. 3239–3249 (2019).
11. Nithin Puthiyaveetil, K Renil Thomas, Sreedhar Unnikrishnakurup, K. V. Phani Prabhakar, G. Padmanabham, Prabhu Rajagopal, Krishnan Balasubramaniam, "Numerical model and experimental validation for online monitoring of cold metal transfer joining of aluminium to galvanized steel", *The International Journal of Advanced Manufacturing Technology* Vol. 104, pp. 4365-4375, (2019).
12. Srin K. S., Padmanabham G., Bathe Ravi, "Controllable Superhydrophobic Stainless Steel Surfaces Fabrication by Femtosecond Laser", *Materials Performance and Characterisation*, Vol. 8, Issue 6, pp. 1159-1166, (November 2019).
13. D. Nazeer Basha, G. Padmanabham, and R. Bathe, "Tribological Behavior of Surface Textured Gray Cast Iron at Different Texture Density by Ultrafast

- Laser," *Materials Performance and Characterization* Vol.8, no. 6, pp. 1147-1158, (2019)
14. V. Barath, M. Tak, R. Padmanaban, and G. Padmanabham, "Adaptive Process Control for Uniform Laser Hardening of Complex Geometries Using Iterative Numerical Simulation," *Materials Performance and Characterization* Vol. 8, no. 6, pp. 1178-1191, (2019)
 15. D.Narsimhachary, S.M.Shariff, G.Padmanabham, A.Basu, "Influence of wire feed rate on mechanical and microstructure characteristics of aluminum to galvanized steel laser brazed joint", *Journal of Manufacturing Processes* Vol. 39, pp. 271-281 (2019)
 16. D. Narsimhachary, P. K. Rai, S. M. Shariff, G. Padmanabham, K. Mondal & A. Basu, "Corrosion Behaviour of Laser-Brazed Surface Made by Joining of AA6082 and Galvanized Steel", *Journal of Materials Engineering and Performance*, vol. 28, pp.2115–2127 (2019)
 17. D.Narsimhachary, K.Dutta,S.M.Shariff,G.Padmanabham,A.Basu, "Mechanical and microstructural characterization of laser weld-brazed AA6082-galvanized steel joint", *Journal of Materials Processing Technology*, Vol. 263, pp. 21-32 (2019)
 18. Papiya Biswas, Mamatha S, Subhendu Naskar, Srinivasa Rao Y., Roy Johnson, Padmanabham G., "3D extrusion printing of magnesium aluminate spinel ceramic parts using thermally induced gelation of methyl cellulose", *Journal of Alloys and Compounds*, Vol. 770, pp. 419-423 (2019).
 19. Sravanthi S.S., Acharyya S.G., Phani Prabhakar K.V., Padmanabham G., "Integrity of 5052 Al-mild steel dissimilar welds fabricated using MIG-brazing and cold metal transfer in nitric acid medium", *Journal of Materials Processing Tech.*, Vol. 268, pp. 97-106 (2019)
 20. Pradheebha S., Unnikannan R., Bathe R.N., Padmanabham G., Subasri R., "Effect of plasma pretreatment on durability of sol-gel superhydrophobic coatings on laser modified stainless steel substrates", *Journal of Adhesion Science and Technology*, Vol. 32, Issue 21, p.p: 2394 - 2404 (2018).
 21. Suresh Babu P., Madhavi Y., Rama Krishna L., Srinivasa Rao D., Padmanabham G., "Thermally-Sprayed WC-Based Cermet Coatings for Corrosion Resistance Applications", *J. of Materials*, Vol. 70, pp. 2636-2649 (2018).
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17. J. K. Sarin Sundar, G. Padmanabham and S.V. Joshi, "Laser Welding and Cutting for Strategic Applications" IDSA seminar Oct 2007, Hyderabad
18. J.K. Sarin Sundar, Shambhavi Shukla, B. Shanmugarajan, G. Padmanabham and S.V. Joshi, "Laser Weldability Studies for Fabrication of Tailor Welded Blanks (TWB) for Automotive Applications" presented at the SIAT 2007 Conference, Jan17-20 2007, Pune
19. G. Padmanabham, M. Schaper, E. Simmchen and Sunil Pandey, "Microstructural Features and Strength of Thick Section Welds of Al-Li Alloys", presented at the International Aluminium Congress 2006, 21-22 Sept 2006, Essen, Germany
20. G. Padmanabham, M. Schaper and Sunil Pandey, "Effect of Current Pulsing on Fusion Zone of MIG-Welded Aluminium-Lithium Alloy", Symposium on Joining of Materials, July 22-23, 2004, Tiruchirappalli, India
21. G. Padmanabham and Sunil Pandey, "New Possibilities for Productivity in Aluminium Welding", presented at IWS-CII Seminar on Cost Effective Welding and Productivity, 6-7 September 2002, India Habitat Centre, New Delhi
22. G. Padmanabham and Sunil Pandey, "Welding of Al-Li alloys – A review", presented at the National Welding Seminar - 2001, January 2002, GRT Convention Centre, Chennai
23. G. Padmanabham and Sunil Pandey, "Welding of a new generation aluminum alloy", presented at the X ISME conference, January 1997, New Delhi.
24. G. Padmanabham, "Active filler brazing of metals to ceramics", presented at national conference of Indian Institute of Welding, January 1996, New Delhi.
25. G. Padmanabham and T. Mohandas, "Metal-ceramic joining and evaluation", International conference Mis-Match 96, April 1996, GKSS Forschungszentrum, Reinstorf-Luneburg, Hamburg, Germany
26. G. Padmanabham, "Cryogenic systems for superconductivity applications" presented at X National Symposium on Cryogenics at IIT Kharagpur in January 1991

Invited Lectures:

1. "Recent Trends in Powder based Technologies and Applications", PM-20, Int. Conf. on Powder Metallurgy and Particulate Materials (PMAI), Mumbai, 19th Feb 2020.
2. "Metal Additive Manufacturing – Technology Trends and Applications", Invited talk at International Welding Congress, Mumbai, 8th February, 2020.
3. "Microstructural Features in Laser Processed Materials" Invited talk at 12th Asia Pacific Microscopy Conference (APMC), HICC, Hyderabad, 4th February 2020.
4. "Surface engineering technologies for defence and aerospace applications", Brain storming session on "Coatings for Armament Applications", ARDE, Pune, 30 Jan 2020.
5. "Laser Assisted Additive Manufacturing", 28th DAE – BRNS National Laser Symposium at VIT, Chennai, January 8, 2020.

6. "Metal AM application development by powderbed fusion method : Experiences and Challenges", Indo-US Workshop on Metal Additive Manufacturing at PSG-IAS, Coimbatore, December 16, 2019
7. "Additive Manufacturing and Challenges", Indo-Belarus Seminar on Nanomaterials and Advanced Materials", Minsk, Belarus, Sep 25-28, 2019.
8. "Additive Manufacturing for Aerospace Applications", Advanced Materials and Processes for Defence Applications (ADMAT-2019), Hyderabad, Sep 23, 2019
9. "Some Recent trends in Additive Manufacturing Technology, Materials and Applications", 9th Int. Conf. on 3D Printing and Additive Manufacturing Technologies-AM 2019, Bangalore (organised by AMSI), Sep 6, 2019.
10. "Surface Engineering and Additive Manufacturing of Aerospace Components", Seminar on "Modernisation & Sustenance Plans of the Indian Air Force" New Delhi, Aug 22, 2019
11. "Advanced Materials and Manufacturing Process for High Temp. Applications", Indo-Korean Workshop (INAE-NAEK) at Novotel, Hyderabad, July 15, 2019.
12. "Additive Manufacturing : Prospects and Challenges", National Technology Day lecture delivered at DRDL, Hyderabad, May 20, 2019.
13. "Metal Additive Manufacturing", 56th Foundation Day of CSIR-IMMT, Bhubaneswar, April 13, 2019.
14. "Metal Additive Manufacturing : Challenges", 5th Int. Conf. on Powder Metallurgy in Asia (APMA-2019), Pune, Feb 20, 2019.
15. "Interdisciplinarity in Science, Engineering and Education", BITS, Pilani, Feb 7, 2019.
16. "Development of Powders for Metal Additive Manufacturing", Indo-German Workshop on Additive Manufacturing of Metals, NML, Jamshedpur, Feb 5, 2019.
17. "Metal Additive Manufacturing", Talk at University of Hyderabad, Jan 17, 2019.
18. "Laser Metal Deposition for Repair and Refurbishment", International Welding Symposium (IWS 2K18), Mumbai, Nov 27, 2018.
19. "Metallurgical Aspects of Additive Manufacturing", NMD-ATM, Kolkata, Nov 15, 2018.
20. "Materials for Energy and Environment", Workshop on Powder Metallurgy and Advanced Ceramics, Rajiv Gandhi University of Knowledge Technologies, Basara, Sept 27, 2018.
21. "Materials for Energy and Environment", Int. Conf. on Advanced Ceramics & Nano Materials for Sustainable Development (ACeND2018), Christ Univ., Bangalore, Sept 19, 2018.
22. "Metal Additive Manufacturing: Applications & Challenges", 8th Int. Conf. on Additive Manufacturing Technologies, Organised by AMSI at The Lalit Ashok, Bengaluru, Sep 7, 2018.
23. "Laser based Manufacturing Solutions for Mobility", Int. Conf. on Advances in Design, Materials, Mfg. and Surface Engg. for Mobility (ADMMS'18), SAE India, Southern Region, Chennai, July 21, 2018.
24. "Research, Innovation and Technology Transfer", Int. Conf. on Transformations in Engg. Education (ICTIEE AP 2018), SRM Univ., Vijayawada, July 17, 2018.

25. "Challenges in Metal Additive Manufacturing", All India Seminar on "Advances in Metallurgy and Manufacturing Process" on 13th July, 2018, Institution of Engineers (I), Hyderabad, July 13, 2018.
26. "Challenges in Metal Additive Manufacturing", All India Seminar on "Advances in Metallurgy and Manufacturing Process", Institution of Engineers (India), Hyderabad, Apr 13, 2018.
27. "Additive Manufacturing for Functionality & Repair", Indo-Australian Workshop, IIT-Madras, March 21, 2018.
28. "Emerging thermal fusion joining techniques of dissimilar materials aluminium to steel aimed at lightweighting in automotive industry", Int. Conf. on Aluminium & Magnesium as Sustainable Lightweight Solution for Transport Sector - Organised by Lightweight Technology Group, Pune, Feb 23, 2018.
29. "Coatings for High Temperature Applications", Seminar on Development, Processing and Applications of High Temperature Materials - Current Trends and Challenges Ahead, IIM Hyderabad Chapter at Midhani, Hyderabad, Feb 22, 2018.
30. "Materials for Sustainable Energy Technologies", National Conf. on Emerging Materials for Sustainable Future (NCEMSF-18), PSG College of Tech., Coimbatore, Feb 9, 2018
31. "Laser-MIG Hybrid Welding of Cr-Mo Steels", 7th Asia Steel International Conference 2018, Bhubaneswar, Feb 8, 2018.
32. "High performance coatings and process for aerospace applications", Int. Conf. on Advanced Materials and Processes (ADMAT-2017) Conf, VSSC, Trivandrum, Dec 14-16, 2017.
33. "Al-Steel joining by CMT weld-brazing: Effect of filler wire composition and pulsing on the interface and mechanical properties", IIW International Congress (IC 2017), Chennai Trade Centre, Dec 7-9, 2017.
34. "Sustainability in Chemical Industry through innovation: Materials Perspective", Conf. on Chemistry Everywhere by CII, Delhi, Nov 28, 2017.
35. "Laser Based Joining Technologies for Aerospace Applications", Nat. Seminar on "Failure Analysis and Advances in Welding Technology for Aero-Engine" organised by Society for Failure Analysis Koraput Chapter at RCMA, Koraput, Sept 15, 2017.
36. "Some microstructural effects of laser processing of materials", International Conference on Materials Engineering (ICME), IIT Kanpur, June 2-4, 2017
37. "Welding challenges in various industrial sectors", Keynote Lecture at Workshop on Challenges in Joining of Advanced Materials (CJAM), NFC, Hyderabad, May 25, 2017.
38. "Recent trends in laser based manufacturing" at Conf. on Recent Advances in Laser Based Mfg., MGIT, Hyderabad, 07 April 2017.
39. "Recent trends in laser processing of materials", Keynote Lecture at Laser Processing of Materials, NIT Surathkal, 09-Mar-17
40. "Advanced Composites for Aerospace – Some developments at ARCI" & Chief Guest International Conference on Recent Advances in Composite Materials, KL Univ., Vijayawada, 06 February 2017
41. "Recent developments in laser based joining processes and their applications", National Welding Seminar, Jadavpur University, Kolkata, 15-17 Dec, 2016
42. Inaugural Address, Ceramic Society Conference at ARCI, Hyderabad, 12 December 2016

43. "Laser based surface engineering for life enhancement of power plant components"
Int. conf. on Surface Engineering, Delhi (organised by IWS - S Biswas, Director, BHEL), 03 December 2016
44. "Advanced Materials and Laser based Welding Technologies", CII Conference on "Welding, Innovation Challenges and Applications in India", Mumbai, Nov 16, 2016
45. "Materials Technologies for Health & Hygiene" at 2nd AP Science Congress" held during 7th - 9th November, 2016 at Vijayawada.
46. Keynote Lecture on "Additive Manufacturing Materials and Alloys" 6th Int. Conf. on Additive Mfg. Tech., Bangalore, 06 October 2016
47. Keynote Address "Lasers in Automotive Industry "Future of Indian Automotive Industry: Lasers and its Applications", Laser Photonics India at BIEC, Bangalore, 21st September 2016
48. Advanced manufacturing processes for aerospace: Recent Developments at ARCI Keynote Lecture at Int. Conf. on Advancements in Aeromechanical Materials for Manufacturing (ICAAMM-2016), MLRIT, Hyderabad, 08 July 2016
49. "Overview on joining challenges in automotive industry" IIW 6th Welding Research & Collaboration Colloquium, 7-9 Apr 2016,
50. "Innovative materials processing for energy and environment applications" AP Science Congress, SV University, Tirupati, 29 January 2016, Osmania University
51. "Laser Assisted Joining of Materials" at the National Laser Symposium (NLS-24) during 2-5 December, 2015 at RRCAT, Indore.
52. "Laser metal deposition for repair of tools and steel components", at International Conference on Additive Manufacturing and 3D printing (ICAM 3D), Chennai on 6-7 February 2015
53. "Laser based manufacturing processes for strategic applications", at International Conference on Advanced Materials and Processes for strategic sectors, ICAMPS 2015, Trivandrum on 13-15 May 2015
54. "Innovative laser processing with pulsed lasers", International Conference on Innovative Materials Research IIMR, 26-27 June, CGCRI, Kolkata
55. "Aluminium-steel joining by fusion and non-fusion processes", International conference on Advances in Welding, Cutting and Surfacing", Organised by the Coimbatore Institute of Technology and Indian Welding Society, 5-7 August 2015, Coimbatore.
56. "Advanced Manufacturing at ARCI", TIFAC-CII Workshop on Development of Vision for R&D in Manufacturing Sector, 31 August, 2015
57. "Laser Based Materials Joining : An Overview", a Keynote talk at Conference on Application of Lasers in Manufacturing (CALM 2015), 9-11 September, 2015, New Delhi
58. "Laser Based Joining and Surface Engineering for Automotive Light Weighting" at 5th International Institute of Welding Colloquium on Research and Collaboration, 27-29 October, 2015, Limburg, Germany
59. "Materials Processing with Lasers" at the Conference on Advanced Materials and Processes (CAMP 2015), MNIT, Jaipur during 2-4 December, 2015.
60. "Welding of Al-Li alloys" at the Science & Engineering Research Council (SERC) School on Welding Technology organized by the WRI, Trichy in 2002

61. MRSI Medal Lecture on "Some microstructural effects in laser materials processing", Annual General Meeting 2013 of the Materials Research Society of India, 11-13 February, Kalpakkam
62. "Coatings for solar energy applications", Indo-Singapore workshop on "Materials and energy", organized by Indian Association for Cultivation of Science (IACS), 22-23 April 2013, Kolkata
63. "Surface engineering using lasers", International conference on heat treatment & surface engineering (HT&SE), Organised by ASM International Chennai Chapter, 16-18 May 2013, Chennai
64. "Laser Processing of Materials", at QIP program on "Manufacturing Technologies" at Gokaraju Institute of Engineering and Technology, 3rd July 2013, Hyderabad.
65. "Recent developments in laser based joining of materials", Quality Improvement Program on "Welding Technologies", 12th August 2013, NIT – Silchar.
66. "Laser processing of materials and Sol-Gel nano-composite coatings" at work shop on "Innovations in Materials and Process and Transfer of Technology" organized by NIT Warangal, 18th October 2013, Warangal.
67. "Laser welding" Training program on "Welding and NDT", organized by the Engineering staff college of India, 12th November 2013, Hyderabad.
68. "Laser based Joining of Materials", DRDO CEP course on materials joining, 19th November 2013, DMRL Hyderabad.
69. "Technology transfer and Commercialisation", Powder metallurgy short course -2013, organized by Powder Metallurgy Association of India, 18-21 November 2013, Hyderabad.
70. "Automotive applications of laser", Work shop on "Laser based Manufacturing" organized by Optilase and VIT University, Vellore on 19th December 2013.
71. "*Recent development in Laser-based Joining Techniques*", International Symposium on Joining of Materials (SOJOM-2012), Organised by the Welding Research Institute and the Indian Welding Society, BHEL-Trichy, India, 19-22 January, 2012
72. "*Laser based surface engineering techniques and their applications*", National Conference on "Engineering Coatings: Process Controls & Applications". (ENGGCOAT-2012) held at IIT Bombay during Feb 9-11, 2012.
73. "*Laser Welding*", Engineering Staff College of India (ESCI) Training course for middle level engineers on "Welding and NDT technologies", April 16-20, 2012, Hyderabad
74. Dr S.P. Luthra Memorial Lecture on "Industrial Laser based manufacturing technologies for sustainability and safety in mobility" at The twenty eighth national convention of mechanical engineers NCME 2012 organised by the Institution of Engineers (India), Coimbatore, September 03-05, 2012
75. "Hardfacing and reclamation by innovative laser processing", Plenary lecture at the International Welding Symposium 2012, IWS 2k12, Oct 30-Nov 1, 2012, Mumbai organized by the Indian Welding Society and German Welding Society and Messe Duesseldorf India
76. "Innovative manufacturing technologies for sustainability in automotive construction", Valedictory of National Student Convention on Automotive Technologies, organized by the SAE India Southern Section on 6th October 2012
77. "Laser based joining technologies", Workshop on welding research trends, organized by IIT Madras and Indian Institute of Welding, 23-24 November 2012

78. "Laser welding and brazing", Course on welding technologies and NDT, organized by Engineering Staff College of India, Hyderabad, 12 December 2012
79. "Laser based joining techniques for automotive applications", Emerging Welding Trends in Automotive Manufacturing", 21-22 January 2011 organized by the Indian Institute of Welding, Jamshedpur
80. "Laser surface engineering", International Conference on Advances in Cutting, Welding and Surfacing" (CWS 2011), 22-23, January 2011, organized by Indian Welding Society, Coimbatore.
81. "Laser Applications in Manufacturing", International Conference on "Harnessing the potentials of new and advanced materials for developing economies", 9 – 12 August 2011, Abuja, Nigeria, organized by the NAM S & T Centre New Delhi and RMRDC, Nigeria.
82. "Trends in Advanced Materials Research in India", at International Conference on "Harnessing the potentials of new and advanced materials for developing economies", 9 – 12 August 2011, Abuja, Nigeria, organized by the NAM S & T Centre New Delhi and RMRDC, Nigeria.
83. "Application of Lasers in Manufacturing", at Engine Division, Hindustan Aeronautics Limited, Bengaluru, on 12th July 2011.
84. "Laser Material Processing for Automotive Application" at TVS Motors, Hosur on 11th July, 2011
85. "Surface Engineering using Lasers", at "Recon Technology" Workshop on 20th September, 2011 organized by Cummins India Ltd. Pune.
86. "Application of Laser in Welding and Manufacturing Processes", at Seminar on "Advanced Manufacturing Technologies" (MetEx India 2011), on 23rd September 2011, organized by the Indian Institute of Metals, Bengaluru Chapter.
87. "Laser based repair technologies", at International conference on "Emerging trends in repair/reclamation technologies on aeroengine parts" on 18 November 2011, at Chandigarh, organized by the Aeronautical Society and the Indian Air Force 3BRD.
88. "Application of Laser Surface Engineering & Welding", at Laser Forum on "Role of Lasers in Manufacturing" on 6th December, 2011, Bengaluru, Laser Forum, as part of Laser India organized by Hannover Milano Fairs of India Limited
89. "Manufacturing using Industrial Lasers", Keynote address at MechMantra 2010, 5th March 2010, RVRR Engineering College, Guntur
90. "Joining of Aluminium to steel and plastic", Workshop on "Aluminium in Bus Body", 10 March 2010, New Delhi organized by Aluminium Association of India and TIFAC
91. "Aluminium Welding Metallurgy", course on Advances in Welding Technology, 27-29 April, 2010 Organised by Engineering Staff College of India, Hyderabad
92. "Laser Welding", course on Advances in Welding Technology, 27-29 April, 2010 Organised by, Engineering Staff College of India, Hyderabad
93. "Laser micromachining and microjoining", School on "Micromanufacturing" on 4th September 2010 organised by IIT Kanpur and DAE
94. "Laser processing of materials", International Conference on Materials Science & Technology, 29-31 October 2010 organised by the Indian Institute of Space Science & Technology, Thiruvananthapuram
95. "Laser Welding of Aluminium Alloys", National Seminar on Welding of Aluminium, 6-7 November 2009, Vizag

96. "Laser Welding, Cutting and Surface Treatment", at Welmet 2008 as post conference tutorial to International Welding Congress 11-12 January 2008, Chennai, India
97. "Welding and Surface Treatment using Industrial Lasers", All India Seminar on "Applications of Lasers in Aerospace Engineering", 19-20 January 2008, organized by the Institution of Engineers (Gujarat State Centre) jointly with Society for Mechanical Engineers, Ahmedabad, India
98. "Laser Surface Treatment of Rail Steels for Improved Wear Resistance leading to life enhancement", Indian National Academy of Engineering Conference on "Railways Vision – 2030", New Delhi, February 29 – March 1 (2008), P54.
99. "Laser Applications in Manufacturing", organized by the Garden Reach Ship builders and Engineers, 5 March 2008, Kolkatta
100. "Laser Beam Welding", National Seminar on "Current Trends in Welding Technology", 8 March, 2008, organized by Karpagam College of Engineering and Welding Research Institute, Coimbatore
101. "Laser Materials Processing", National Seminar on "Advanced Materials and Processes 2008 (AMP-2008)", 8-9 August 2008, National Institute of Technology (NIT), Warangal
102. "Laser Processing Application in Automotive Components", Indo-French Seminar on "Automotive Manufacturing Technologies", organized by the Indo-French Centre for Promotion of Advanced Research (IFCPAR), 5-6 September 2008
103. "Laser based Surface Modification Processes", DRDO Continuing Education Programme (CEP) on "Emerging Trends in Surface Coatings", 15-19 September, 2008, Defence Metallurgical Research Laboratory (DMRL), Hyderabad
104. "Industrial Laser Applications in Manufacturing" - IWS Hyderabad Centre Formation day lecture on 6th January 2007
105. "Lasers in Manufacturing" – Senior management and technical personnel of L&T at their Powai Works, 22nd January 2007
106. "Laser based Manufacturing Technologies" – at the International Seminar on Manufacturing Technologies – Realms Ahead organized by IWS, IIM, WRI on 12-13 April 2007, Tiruchchirappalli
107. "Laser Applications in Manufacturing Technologies" – Invited Knowledge sharing lecture at Honeywell Technology Solutions Lab, Bangalore and Sundaram Clayton, Chennai , 21-23 May 2007
108. "Application of lasers in Automotive Manufacturing", SAE India Lecture, 16 Nov 2007, Anna University College of Engg, Chennai
109. "Laser Surface Treatment for railroad components for life enhancement", Railway Board, New Delhi, 7th Feb 2006
110. "Laser Application in Metal Joining" at the National Colloquium of the Society for Aerospace Manufacturing Engineers (SAME), 27th December 2006 at VSSC, Trivandrum
111. "Lasers in Welding" at the Continuing Education Programme for young DRDO scientists, DMRL, December 2005

Book Chapters

1. "Patenting Trends in Additive Manufacturing of Ceramic Materials" authored by Priya Anish Mathews, K. Swati, Sanjay Bhardwaj, Papiya Biswas, Roy Johnson and G. Padmanabham in the 'Handbook of Advanced Ceramics and Composites' (ed.) Y. R. Mahajan and Roy Johnson, Springer Nature, ISBN: 978-3-319-73255-8 (In press).
2. L. Rama Krishna, P. Suresh Babu, Manish Tak, D. Srinivasa Rao, G. Padmanabham, G. Sundararajan, "Processing of Ceramic and Cermet Coatings for Aerospace and Strategic Applications", Handbook of Advanced Ceramics and Composite Applications, Ed. Y.R. Mahajan, Roy Johnson, Springer Nature (accepted 2018).
3. G. Padmanabham and B. Shanmugarajan "Laser based joining of metallic and non-metallic materials" in the book "Laser Assisted Fabrication of Materials" Springer Series in Materials Science, Vol.161, p. 159-220 (2013)
4. R.C. Shivamurthy, M. Kamaraj, R. Nagarajan, S.M. Shariff and G. Padmanabham "Laser surface modification of steel for slurry erosion resistance in power plants", Chapter-7 of book entitled "Laser surface modification of alloy for corrosion and erosion resistance", Ed.: Chi Tat Kwok, Woodhead publishing in materials, pp. 177-287 (2012).

Books Edited

1. Mineral Processing : Technologies, Challenges and Perspectives, Ed. G. Padmanabham, Published by Centre for Science & Technology of the Non-Aligned and Other Developing Countries (NAM S&T Centre), New Delhi, 2017.

Invited overview articles:

1. Laser Materials Processing for Industrial Applications, G. Padmanabham and Ravi Bathe, Proc. National Acad. Sciences, Vol. 88, No. 3, pp. 359-374, 2018.