

J.J. College of Arts and Science (Autonomous), Pudukkottai – 622 422

PG and Research Department of Physics

Guest Lecturer Programme

3.3.2 Report

The Department of Physics, J.J. College of Arts and Science (Autonomous), Pudukkottai arranged a special lecture programme on Tuesday 27.06.2023. **Dr. D. Anbuselvan, Assistant Professor, PG and Research Department of Physics, Rajah Serfoji Government College (Autonomous), Thanjavur – 613 005.**

Dr. D. Anbuselvan gave a brief discussion on “Nanomaterials preparation and it's recent developments”. Nanoparticles are minute materials and they can be characterized into various classes dependent on their properties, shapes or sizes. The various types of nanoparticles are metal nanoparticles, ceramic nanoparticles, and polymeric nanoparticles. Nanoparticles have exceptional physical and compound properties because of their high surface region and nano scale size. Their optical properties are accounted for to be reliant upon the size, which confers various shadings because of retention in the apparent district. Their reactivity, durability and different properties are additionally reliant upon their novel size, shape and construction, there is appropriate possibility for different business and homegrown applications, which incorporate catalysis, imaging, clinical applications, energy-based examination, and ecological applications. Weighty metal nanoparticles of lead, mercury and tin are accounted to be extremely unbending and stable that their debasement isn't effectively reachable, which can prompt numerous ecological poison levels.

Dr. M.K. Murali, Head and Assistant Professor of Physics, presided over the meeting. M Vinibala III B.Sc. Physics welcomed the gathering and K. Reshma Begam III B.Sc. Physics proposed the vote of thanks.

27/6/23
Head of the Department

Dr. M.K. MURALI, M.Sc., M.Phil., Ph.D.
HEAD AND ASSISTANT PROFESSOR,
PG AND RESEARCH DEPARTMENT OF PHYSICS
J.J. COLLEGE OF ARTS AND SCIENCE (AUTONOMOUS)
J.J. NAGAR, SIVAPURAM,
PUDUKKOTTAI - 622 422



Principal

Dr. J. PARASURAMAN, M.A., M.B.A., M.Com., M.Phil., B.Ed., Ph.D.
PRINCIPAL
J.J. College of Arts and Science (Autonomous)
J.J. Nagar, Sivapuram Post,
PUDUKKOTTAI - 622 422.

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Workshop Programme

3.3.2 Report

One day Workshop programme was held at J.J. college of Arts and Science in Visual Communication Department and Physics Department on 17th July at 10.30 am. Visual Communication Department Head Bharathi Raja gave a Welcome Speech. Drone Pilots John Victor and Victor Alfred participated in this programme. They had worked in many Drone projects. They were sharing their knowledge regarding Drone like, how to operate, Functions, Types, Shot and Places. They explained with suitable examples. End of the session Physics Department Head Dr. M. K. Murali gave a Vote of thanks.

T.K. Murali
17/7/22
Head of the Department

Dr. M.K. MURALI, M.Sc., M.Phil., Ph.D.
HEAD AND ASSISTANT PROFESSOR,
PG AND RESEARCH DEPARTMENT OF PHYSICS
J.J. COLLEGE OF ARTS AND SCIENCE (AU)
J.J. NAGAR, SIVAPURAM,
PUDUKKOTTAI - 622 422



J. Parasuraman
Principal

Dr. J. PARASURAMAN, M.A., M.B.,
M.Phil., B.Ed.
PRINCIPAL
J.J. College of Arts and Science (Autonomous)
J.J. Nagar, Sivapuram Post,
PUDUKKOTTAI - 622 422.

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Guest Lecturer Programme

3.3.2 Report

The Department of Physics, J.J. College of Arts and Science (Autonomous), Pudukkottai arranged a special lecture programme on Wednesday 23.08.2023. **Dr. N. Aathavan, Associate Professor and Head, PG and Research Department of Physics, H.H. The Rajah's College (Autonomous), Pudukkottai – 622 001.**

Dr. N. Aathavan gave a brief discussion on “ Artificial Intelligence : A Physicist perspective”. To explain the senses and creature, natural intelligence, physics of intelligence and Artificial Intelligence. The use of AI in physics is not new. However, today's ease of use, technical progress and enormous computational power mean that machine learning can rather suddenly allow physicists to tackle a lot of problems that were previously intractable. There are many different types of neural networks, which differ in their architecture and learning schemes. Physicists have to understand which algorithm works for which situation and how well, the same process they went through for theory. Rather than spelling the end of theory, machine learning will take it to the next level.

Dr. M.K. Murali, Head and Assistant Professor of Physics, presided over the meeting. K. Reshma Begam III B.Sc. Physics welcomed the gathering and N. Priyadharshini II M.Sc. Physics proposed the vote of thanks.

TKM
Head of the Department
Dr. M.K. MURALI, M.Sc., M.Phil., Ph.D.
HEAD AND ASSISTANT PROFESSOR,
PG AND RESEARCH DEPARTMENT OF PHYSICS
J.J. COLLEGE OF ARTS AND SCIENCE (A.U.)
J.J. NAGAR, SIVAPURAM,
PUDUKKOTTAI - 622 422



J. Par
Principal
Dr. J. PARASURAMAN, M.A., M.B.A., M.C.,
PRINCIPAL
J.J. College of Arts and Science (Autonomous)
J.J. Nagar, Sivapuram Post,
PUDUKKOTTAI - 622 422.

J.J. College of Arts and Science (Autonomous), Pudukkottai – 622 422

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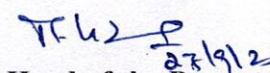
Guest Lecturer Programme

3.3.2 Report

The Department of Physics, J.J. College of Arts and Science (Autonomous), Pudukkottai arranged a special lecture programme on Wednesday 27.09.2023. **Dr. M. KARUNAKARAN** Associate Professor, PG & Research Department of Physics, Alagappa Government Arts College, Karaikudi - 630 003, Sivagangai (Dist.), Tamil Nadu, India.

Dr. M. Karunakaran gave a brief discussion on “Research trends, opportunities and challenges in nanomaterials”. Nanotechnology has grabbed the attention of Chemists, Physicists, Biologists and Engineers by synthesizing nanoparticles with escalated properties than bulk materials. These nanoparticles find varied applications with certain modifications in their surface morphology. Physical and chemical route of synthesis of nanomaterials over a number of years in the recent past have authenticated harmful toxic effects on humans. This scenario powered the researchers to lean towards green synthesis of nanoparticles. This new method of synthesis shows decrease in toxic effects of nanoparticles over the environment and humans by integrating the available metabolites in biological extracts making them biocompatible. This review analyses the various methods of utilizing biological extracts for the synthesis nanoparticles and their advantages.

Dr. M.K. Murali, Head and Assistant Professor of Physics, presided over the meeting. C. Kavya II M.Sc. Physics welcomed the gathering and A. Asitha III B.Sc. Physics proposed the vote of thanks.


Head of the Department

Dr. M.K. MURALI, M.Sc., M.Phil., Ph.D.
HEAD AND ASSISTANT PROFESSOR,
PG. AND RESEARCH DEPARTMENT OF PHYSICS
J.J. COLLEGE OF ARTS AND SCIENCE (AU)
J.J. NAGAR, SIVAPURAM,
PUDUKKOTTAI - 622 422




Principal

Dr. J. PARASURAMAN, M.A., M.B.A., M.C.,
M.Phil., B.Ed., Ph.D.
PRINCIPAL
J.J. College of Arts and Science (Autonomous)
J.J. Nagar, Sivapuram Post,
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Guest Lecturer Programme

3.3.2 Report

The Department of Physics, J.J. College of Arts and Science (Autonomous), Pudukkottai arranged a special lecture programme on Tuesday 12.10.2023. Dr. K. Ravichandran, Associate Professor and Head, PG & Research Department of Physics, A.V.V.M Sri Pushpam College (Autonomous), Poondi, Thanjavur – 613 503), Tamil Nadu, India.

Dr. K. Ravichandran Associate Professor and Head, PG & Research Department of Physics, A.V.V.M Sri Pushpam College (Autonomous), gave a brief discussion on the topic is “Fundamentals of Nanotechnology”. Nanoparticles are minute materials and they can be characterized into various classes dependent on their properties, shapes or sizes. The various types of nanoparticles are metal nanoparticles, ceramic nanoparticles, and polymeric nanoparticles. Nanoparticles have exceptional physical and compound properties because of their high surface region and nano scale size. Their optical properties are accounted for to be reliant upon the size, which confers various shadings because of retention in the apparent district. Their reactivity, durability and different properties are additionally reliant upon their novel size, shape and construction, there is appropriate possibility for different business and homegrown applications, which incorporate catalysis, imaging, clinical applications, energy-based examination, and ecological applications. Weighty metal nanoparticles of lead, mercury and tin are accounted to be extremely unbending and stable that their debasement isn't effectively reachable, which can prompt numerous ecological poison levels.

Dr. M.K. Murali, Head and Assistant Professor of Physics, presided over the meeting. M Vinibala III B.Sc. Physics welcomed the gathering and K. Reshma Begam III B.Sc. Physics proposed the vote of thanks.

TC 42
12/10/23
Head of the Department
Dr. M.K. MURALI, M.Sc., M.Phil., Ph.D.
HEAD AND ASSISTANT PROFESSOR,
PG. AND RESEARCH DEPARTMENT OF PHYS.
J.J. COLLEGE OF ARTS AND SCIENCE (AU),
J.J. NAGAR, SIVAPURAM,
PUDUKKOTTAI - 622 422




Principal
Dr. J. PARASURAMAN, M.A., M.B.A., M.Phil., B.Ed., Ph.D.
PRINCIPAL
J.J. College of Arts and Science (Autonomous)
J.J. Nagar, Sivapuram Post,
PUDUKKOTTAI - 622 422.

J.J. College of Arts and Science (Autonomous), Pudukkottai – 622 422

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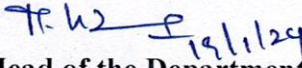
Workshop Programme

3.3.2 Report

The Department of Physics, J.J. College of Arts and Science (Autonomous), Pudukkottai arranged a one day national level workshop on 19/1/2024 **Dr. M. Karunakaran, Pondicherry University, Pondicherry, India and Dr. M. Karunanithi Srimad Andavan, Arts and Science College (Autonomous), Tiruchirappalli, Tamilnadu, India.**

Dr.M. Karunakaran Pondicherry University and Dr. M. Karunanithi Srimad Andavan Arts and Science College (Autonomous) gave a brief discussion on the topic is “Home appliance maintains”. The significance of sustainable household appliance management is crucial in environmental sustainability, as it addresses resource efficiency and energy consumption. This study identifies a research gap in understanding the interplay between appliance lifespan, repair frequency, and maintenance behaviors among European households. The research question focuses on how these factors influence consumers’ decisions to repair or replace appliances. Employing a comprehensive research approach, the study uses an online survey to gather quantitative and qualitative data from a diverse sample. Key findings reveal that despite high self-reported awareness of maintenance, actual practices are lacking, leading to reactive rather than proactive maintenance behaviors. The study underscores the importance of encouraging proactive maintenance to enhance sustainability and reduce environmental impact.

Dr. M.K. Murali, Head and Assistant Professor of Physics, presided over the meeting. M Vinibala III B.Sc. Physics welcomed the gathering and K. Reshma Begam III B.Sc. Physics proposed the vote of thanks.


Head of the Department

Dr. M.K. MURALI, M.Sc., M.Phil., Ph.D.
HEAD AND ASSISTANT PROFESSOR
PG. AND RESEARCH DEPARTMENT OF PHYSICS
J.J. COLLEGE OF ARTS AND SCIENCE (AU)
J.J. NAGAR, SIVAPURAM,
PUDUKKOTTAI - 622 422




Principal

Dr. J. PARASURAMAN, M.A., M.B.A., M.C.,
M.Phil., B.Ed., Ph.D.
PRINCIPAL
J.J. College of Arts and Science (Autonomous)
J.J. Nagar, Sivapuram Post,
PUDUKKOTTAI - 622 422.

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Workshop Programme

3.3.2 Report

The Department of Physics, J.J. College of Arts and Science (Autonomous), Pudukkottai arranged workshop programme on Tuesday 04.03.2024. Dr. K. Ravichandran Associate Professor and Head, PG & Research Department of Physics, A.V.V.M Sri Pushpam College (Autonomous), Poondi, Thanjavur – 613 503), Tamil Nadu, India.

Dr. K. Ravichandran Associate Professor and Head, PG & Research Department of Physics, A.V.V.M Sri Pushpam College (Autonomous), “Environmental and Biomedical Applications of Nanomaterials” gave a brief discussion on the topic is are exploited for bioremediation because they have a large surface area owing to their small size, require lesser activation energy, exhibit surface plasmon resonance, and have high reactivity. Nanomaterials such as nanoparticles can also be used to immobilize microbial cells that can degrade certain chemicals. Nanomaterial applications include remediation or recovery of solid waste, groundwater and wastewater, petroleum hydrocarbons, soil, and heavy metals. Therefore, it is expected that the nanomaterials application could bring about a rapid and positive progress in the field of bioremediation in the coming years. For a sustained and specific drug delivery action, drugs and ligands can be functionalized on the nanomaterial surfaces. This thwarts the nonspecific accumulation of drugs and minimizes the amount of drug required for treatment and thus, plays a key role in circumventing the burning issue of increasing drug resistance. Magnetic nanoparticles can be applied for synchronized disease diagnosis, drug administration, and observing drug release and distribution. Early detection is crucial to combat diseases such as cancer, where conventional diagnostic methods have not been so successful yet.

Dr. M.K. Murali, Head and Assistant Professor of Physics, presided over the meeting. M Vinibala III B.Sc. Physics welcomed the gathering and K. Reshma Begam III B.Sc. Physics proposed the vote of thanks.

Dr. M.K. Murali
4/3/24
Head of the Department

Dr. M.K. MURALI, M.Sc., M.Phil., Ph.D.
HEAD AND ASSISTANT PROFESSOR,
PG. AND RESEARCH DEPARTMENT OF PHYSICS
J.J. COLLEGE OF ARTS AND SCIENCE (AU)
J.J. NAGAR, SIVAPURAM,
PUDUKKOTTAI - 622 422



Dr. J. Parasuraman
Principal

Dr. J. PARASURAMAN, M.A., M.B.A., M.C.,
M.Phil., B.Ed., Ph.D.
PRINCIPAL
J.J. College of Arts and Science (Autonomous)
J.J. Nagar, Sivapuram Post,
PUDUKKOTTAI - 622 422.