

Report on National Workshop on “MATLAB Application in Engineering Field” Held on 13th and 14th July 2021

Date of Event	13th and 14th July 2021
Name and Type of Event	National Workshop on “MATLAB Application in Engineering Field”
Conducted by	Mr. Ashwini Kumar, Dr. Keerti Rai
Number of Participants	300

National Workshop On “MATLAB Application In Engineering Field”

The Resource person Dr. Anand Singh is Associate Professor & Head of the Department of Electrical and Electronics Engineering. Lakshmi Narain College of Technology, Bhopal (LNCT, Bhopal)

He has professional teaching and industry experience of over 12 years. Dr. Anand Singh has completed his PhD from MANIT Bhopal in Energy Engineering, and M.Tech from Visvesvaraya National Institute of Technology, Nagpur, Maharashtra. He has 33 publications in journals, conferences and seminars of National and International repute and 3 Books. The speaker gave informative and illuminating lecture with valuable content. The session was valuable not only for students but for faculties, research scholars, industry persons and other participants. Through this the participants were able to understand the basic of MATLAB Programming, Simulink, Graph Plotting etc.

About the Speaker

Dr. AnandSingh Associate Professor & Head Department of Electrical and Electronics Engineering. LakshmiNarain College of Technology, Bhopal (LNCT, Bhopal). Dr. Anand Singh completed PhD from MANIT Bhopal in Energy Engineering, M.Tech from Visvesvaraya National Institute of Technology, Nagpur, Maharashtra. His Field of Specializations are: Artificial Intelligence (AI) Application to Power System, Power Electronics and Renewable Energy; Solar Photovoltaic; Fuel Cell; Biomass Gasifier; Integrated Energy System. IoT Application to Electrical & Electronics Engineering, MATLAB/Simulink & HOMER Software. He have 12 years of Teaching and Research Experience and also Achieved different Awards like Best Paper Award (2016) International Journal of Environment, Ecology, Family And Urban Studies (IJEEFUS), Best Reviewer Award (2017) International Journal of Hydrogen Energy (Elsevier), Best Reviewer Award (2017) Journal of Energy Storage (Elsevier), Best Reviewer Award (2017) Energy Conversion and Management (Elsevier), Best Faculty Award -SARJAN-2019, and Best Faculty Award -LNCT GROUP-2019

About the Topic

The speaker gave informative and illuminating lecture with valuable content. The session was valuable not only for students but for faculties, research scholars, industry persons and other participants. Through this the participants were able to understand the Basic introduction in MATLAB with real time Lectures. Discussed about MATLAB which is basically helps individuals in gaining the expertise required to work with this software and its easy-to-use environment. The name MATLAB stands for MATrixLABoratory. MATLAB was written originally to provide easy access to matrix software developed by the LINPACK (linear system package) and EISPACK (Eigen system package) projects. MATLAB is a high-performance language for technical computing. It integrates computation, visualization, and programming environment. Furthermore, MATLAB is a modern programming language environment: it has sophisticated data structures, contains built-in editing and debugging tools, and supports object-oriented programming. These factors make MATLAB an excellent tool for teaching and research. MATLAB has many advantages compared to conventional computer languages (e.g., C, FORTRAN) for solving technical problems. MATLAB is an interactive system whose basic data element is an array that does not require dimensioning. The software package has been commercially available since 1984 and is now considered as a standard tool at most universities and industries worldwide. It has powerful built-in routines that enable a very wide variety of computations. It also has easy to use graphics commands that make the visualization of results immediately available. Specific applications are collected in packages referred to as toolbox. There are toolboxes for signal processing, symbolic computation, control theory, simulation, optimization, and several other fields of applied science and engineering.

Speaker explained in efficient way to how to start MATLAB, you can enter MATLAB by double-clicking on the MATLAB shortcut icon (MATLAB 7.0.4) on your Windows desktop. When you start MATLAB, a special window called the MATLAB desktop appears. The desktop is a window that contains other windows. The major tools within or accessible from the desktop are:

- The Command Window
- The Command History
- The Workspace
- The Current Directory
- The Help Browser

- The Start button

The main aim of this workshop is to familiarize with the basic functionalities and the features of this software. An appropriate knowledge of MATLAB makes mathematical calculations much easier and helps professionals to solve numerical computations and perform Data Analysis and Visualization tasks. MATLAB is widely used in different areas of applied mathematics & engineering field, in education and research and in numerous industries.

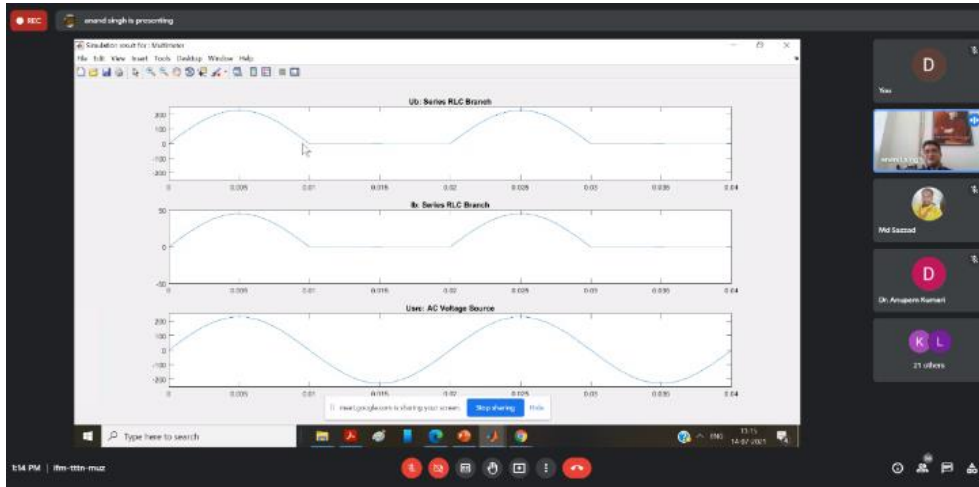
In order to use this software efficiently, a proper training is required, which clears your MATLAB concepts and helps in understanding this software better. The MATLAB training online acquaints the learner with MATLAB tool boxes, function libraries, basics of SIMULINK® software, etc. MATLAB Application in Engineering field with the help of Hand on discussion about MATLAB Window, Command window, History windows. Basic Techniques were described about the MATLAB Figure, MATLAB Apps, plot analysis. Also all the MATLAB Window, Command window, History windows and how to import & Export data in MATLAB and also well explained the use of Workspace.

Participants who have attend this workshop learn how to work with the user-friendly syntax of MATLAB® commands. This training familiarizes participants with MATLAB® tool boxes; function libraries; and graphics and data visualization tools. The MATLAB® online training also imparts knowledge and skills related to Graphical User Interface (GUI) designing. Students are additionally acquainted with the basics of SIMULINK software.

Venue and Participants:-

Webinar was conducted on Google Meet. **Total participants registered were 340 from different University/Institutes across India.** Total numbers of attendees were 300.

Photos of the Event



Event Poster

JGI | **ARKA JAIN University**
Jharkhand (Jamshedpur)

Dept. of Engineering & Polytechnic
TWO DAYS NATIONAL WORKSHOP
MATLAB
Application in Engineering Field

Introduction about MATLAB

- Analysis and programming
- Application for basic Electrical Engineering, Network analysis
- Control System and power electronics

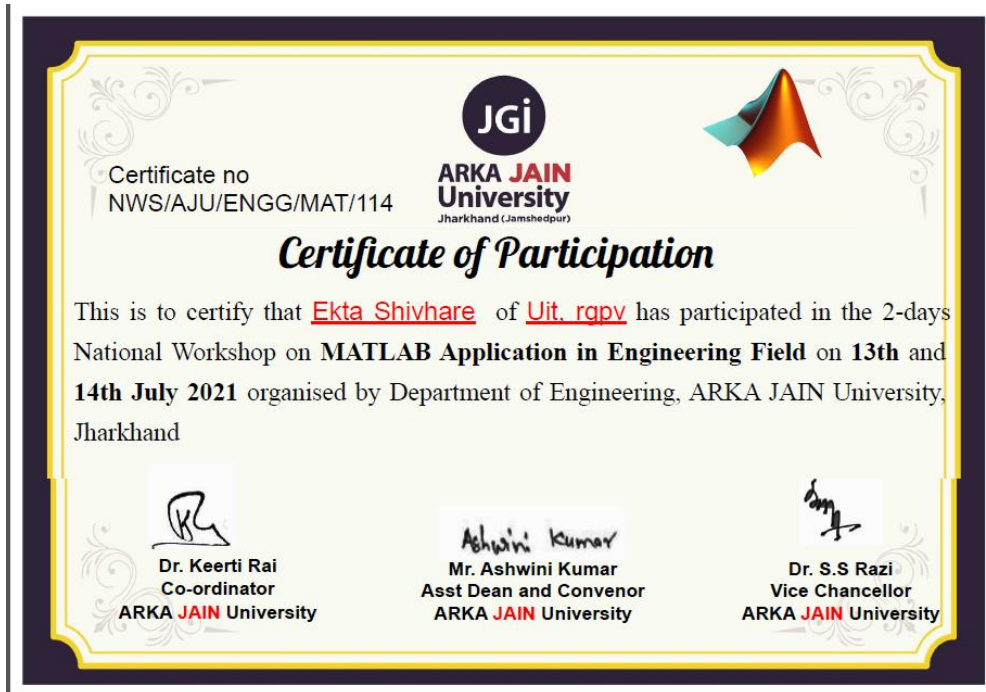
SPEAKER

 **Dr. Anand Singh**
Associate Professor & Head
Dept. of Electrical & Electronics Engineering,
Lakshmi Narain College of Technology,
Bhopal (LNCT, Bhopal).

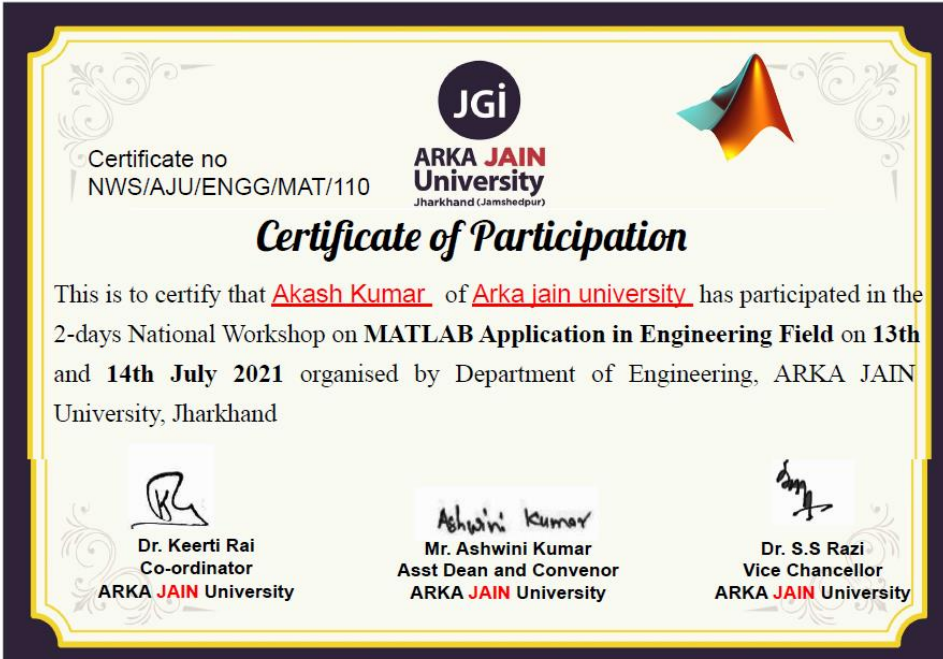
📅 13th & 14th July 2021 🗣️ Google Meet
🕒 10:30 am-12:00 noon & 1:00 pm - 02:00 pm

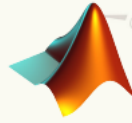
CONVENER: MR. ASHWINI KUMAR, DR. KEERTI RAI

Certificate Template









Certificate no
NWS/AJU/ENGG/MAT/112

ARKA JAIN
University
Jharkhand (Jamshedpur)

Certificate of Participation

This is to certify that **AVINASH KUMAR** of **CIT. Ranchi** has participated in the 2-days National Workshop on **MATLAB Application in Engineering Field** on 13th and 14th July 2021 organised by Department of Engineering, ARKA JAIN University, Jharkhand

Dr. Keerti Rai
Co-ordinator
ARKA JAIN University

Mr. Ashwini Kumar
Asst Dean and Convenor
ARKA JAIN University

Dr. S.S Razi
Vice Chancellor
ARKA JAIN University

Curriculum Vitae

Dr. Anand Singh

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Google Scholar:- <https://scholar.google.co.in/citations?user=XMeWirIAAAAJ&hl=en>

Research Gate:- https://www.researchgate.net/profile/Anand_Singh67

Web of Science ResearcherID:- AAZ-3651-2020

Vidwan Id:-<https://vidwan.inflibnet.ac.in/profile/48702>

1	Full name	Dr.Anand Singh
2	Phd. With Sub/topic	Ph.D. from Maulana Azad National Institute of Technology (MANIT) Bhopal, India (2018) Energy Engineering /Hybrid Energy System
3	Specialization	Artificial Intelligence (AI) Application to Power System, Power Electronics and Renewable Energy; Solar Photovoltaic; Fuel Cell; Biomass Gasifier; MATLAB/Simulink; Hybrid Energy System.
4	Brief write-up about your research work	The stand-alone hybrid energy system is utilizing renewable energy sources, serve as reliable and clean sources of energy.They can be either grid-connected or stand-alone connexion liable on the application and topography of the site.For suitable power generation, it is necessary to observe the energy obligation and availability of different renewable energy system in the study area.hybrid energy systems applicable for rural areas, industries, and education building and mathematical models of the different components of the planned hybrid energy system have been developed using their mathematical calculations and corresponding electrical circuits. However, the MANIT campus has the collection of several crucial facts related to the solar radiation data,

		biomass data for various months. Based on this context and the load profile, the sizing and cost of the system are optimized using a fuzzy logic algorithm and HOMER pro software, to minimize the per-unit cost of energy (COE) and total net present cost (NPC). A dynamic model of the hybrid energy system and its components were established on MATLAB Simulink software. The power shared by each source and the battery concerning time were also studied. As per the analysis, that the solar PV, biomass gasifier generator set, fuel cell, and battery bank operates at the different time of a day to meet the load demand at ease, without interruption.
5	No. of research paper published national /international	International Journal 18 (8 papers SCI/Scopus Indexing), National Journals- 02, Conferences: 8
6	No. of books published	Book Chapter Publication 2 1. Anand Singh, Prashant Baredar, Hitesh Khare and Anil Kumar “Fuel Cell: Fundamental, Classification, Application, and Environmental Impact” "Low Carbon Energy Supply -Trends, Technology, Management” ISBN No. 978-981-10-7325-0, Springer-publishing, Springer Nature Singapore 2. Anand Singh and Prashant Baredar “Gasification of Biomass: Mechanism and Classification of Gasifier” page no. 177-188, Current Research in Engineering & Technology: A Compilation of Studies, ISBN: 978-81-935729-9-3 ,Meta Research Press (MRP), New Delhi-110089, INDIA.
7	patents	Nil
8	Foreign visits	No
9	Achievements other than above	<p>1. Professional Bodies Membership Details</p> <ul style="list-style-type: none"> • Bilingul Publishing Co. Jmser-Ebr-025 Editorial Board September-2018 • Journal Of Emerging Technologies And Innovative Research 113901 Active Review Member November-2018 • IEEE 93915766 Guest Faculty Member August-2013 <p>2. Invited talk/Lectures delivered</p> <ul style="list-style-type: none"> • Expert lecture at People's College of Research and Technology (PCRT), Bhopal “MATLAB Application in Electrical and Electronics Engineering” • Expert lecture at Trinity Institute of Technology & Research, Bhopal “MATLAB Application in Electrical and Electronics Engineering” • Expert lecture at Gyan Ganga Institute of Technology and Management (GGITM) now(LNCTE) ,Bhopal “MATLAB Simulink Application in Electrical

		<p>Engineering”</p> <ul style="list-style-type: none"> • Expert lecture at RKDF university, Bhopal “MATLAB Simulink Application in Electrical Engineering” • 5. Expert lecture at Patel College of Science and Technology, Bhopal “MATLAB Application in Electronics& Telecommunication Engineering” <p>3. Reviewer in Journals</p> <ul style="list-style-type: none"> • ENERGY EXPLORATION EXPLOITATION (SCOPUS_SAGE JOURNAL) • ENVIRONMENTAL PROGRESS & SUSTAINABLE ENERGY (SCI_WILEY_ JOURNAL) • INTERNATIONAL JOURNAL OF GREEN ENERGY (SCI_ TAYLOR & FRANCIS) • JOURNAL OF ELECTRICAL ENGINEERING & TECHNOLOGY • (SCI_ JOURNAL) • INTERNATIONAL JOURNAL OF HYDROGEN ENERGY (SCI_ELSEVIER) • JOURNAL OF ENERGY STORAGE (ESCI_ELSEVIER) • ENERGY CONVERSION AND MANAGEMENT (SCI_ELSEVIER) • RESOURCE-EFFICIENT TECHNOLOGIES (SCOPUS _ELSEVIER) • SUSTAINABLE CITIES AND SOCIETY (SCOPUS _ELSEVIER)
10	Total work experience	12 Years