J.K.K. MUNIRAJAH COLLEGE OF TECHNOLOGY

Approved by AICTE, New Delhi And Affiliated to Anna University, Chennai.

Accredited by NAAC with "A" grade

T.N. Palayam (Po), Gobi (Tk), Erode (Dt) – 638 506

JKKMCT/CIRCULAR/SEP-2022 **DATE:14/09/2022**

CIRCULAR

The Department of civil engineering is organizing a one day National level workshop on Optimizing Hydraulic System Efficiency through Advanced Fluid Dynamics Analysis to our students on 21st September 2022 (wednesday) at seminar Hall. All the students are requested to attend the workshop and get benefit.

PRINCIPAL

Copy To,

All the HODs and Staff Members,

All the Students,

Notice Board, File

J.K.K. MUNIRAJAH COLLEGE OF TECHNOLOGY

Approved by AICTE, New Delhi And Affiliated to Anna University, Chennai.

Accredited by NAAC with "A" grade

T.N. Palayam (Po), Gobi (Tk), Erode (Dt) – 638 506

INVITATION

DEPARTMENT OF CIVIL ENGINEERING

Cordially invites you for the Workshop on

"OPTIMIZING HYDRAULIC SYSTEM EFFICIENCY THROUGH ADVANCED FLUID DYNAMICS ANALYSIS"

On

21st SEPTEMBER 2022

Resource person

Dr. L. Vignesh Rajkumar, Ph.D.,

Assistant Professor,

VIT University, Vellore

Venue: Seminar Hall

Welcome Address

Dr. K.Sridharan.,M.E,M.B.A., Ph.D., Principal – JKKMCT

Secretary Address

Mrs. Kasthuripriya Krupakarmurali., M.B.A.,

Secretary – JKKMCT

ABOUT THE COLLEGE

J.K.K.Munirajah is a reputed industrialist, technocrat, an educationalist, and excellence in a void social worker, a person imbibed in deep spiritual values and a Philanthropist. J.K.K.Munirajah founded a Charitable Trust by name AnnaiJ.K.K.Sampoorani Ammal Trust, Komarapalaym-638 183, Namakkal Dt., Tamilnadu in the year of 1971. J.K.K.Munirajah established many temples of leaving to perpetuate the ever lasting memory of his beloved mother. At present AnnaiJ.K.K.SampooraniAmmal Charitable Trust maintains and runs Paramedical Institutions offering Diploma, Graduate and Post Graduate courses in Pharmacy, Nursing, Physiotherapy and Occupational Therapy at Komarapalayam, NamakkalDt and a Polytechnic, Community Polytechnic and a Industrial Training Center at T.N.Palayam, Erode Dt. These educational Institutions are temples of Learning and have contributed much to a formidable social change in our society They are renowned educational institutions spared nothing to promote knowledge, wisdom and service-orientation.

ABOUT THE DEPARTMENT

The Civil Engineering Department was started in the year 2009.The department offers four years B. E -Civil Engineering. The department has a team of highly qualified, dedicated and motivated faculty and well equipped laboratories with facilities for UG. B.E has been accredited by AICTE, New Delhi. The goal of the Civil engineering curriculum is to create a flexible undergraduate educational experience in design, modeling, computing, management, and engineering science. Principal study topics include fluid mechanics, structural engineering soil mechanics,water resources engineering Highway Engineering Railway engineering and airport engineering.

ABOUT THE PROGRAMME

Hydraulic systems play a pivotal role in various industrial applications, ranging from the manufacturing to aerospace.This workshop explores the optimization of hydraulic system efficiency through the application of advanced fluid dynamics analysis. The research focuses on aspects such as Computational Fluid Dynamics Modeling and Optimization Strategies Building upon the insights gained from simulations, we develop and implement optimization strategies to enhance the overall system efficiency. Experimental Validation to validate the effectiveness of the proposed optimizations, a series of real-world experiments are conducted on a prototype hydraulic system. The research aim to contribute to the advancement of hydraulic system technology, providing industries with practical insights to improve energy efficiency, reduce operational costs, and enhance overall system performance to influence the design and operation of hydraulic systems across various sectors leading to more sustainable and optimized industrial processes.

J.K.K. MUNIRAJAH COLLEGE OF TECHNOLOGY, T.N.PALAYAM

ONE DAY Workshop

On

OPTIMIZING HYDRAULIC SYSTEM EFFICIENCY THROUGH ADVANCED FLUID DYNAMICS ANALYSIS

21-09-2022

Organized by

Department Of Civil Engineering
J.K.K. MUNIRAJAH COLLEGE OF TECHNOLOGY,
T.N.PALAYAM

Tel No: 04285-260754-55, Fax: 04285-260755.
E-mail: civilneocret@gmail.com,
Website: www.jkkmct.org

ORGANIZING COMMITTEE

Convener : V.Mohanapriya,
HOD,
Civil Engineering,
JKKMCT, Gobi

Coordinator: Sathiyapriya.V,
Assistant Professor,
Civil Engineering,
JKKMCT, Gobi

ONE DAY

WORKSHOP On
OPTIMIZING HYDRAULIC SYSTEM EFFICIENCY THROUGH ADVANCED FLUID DYNAMICS ANALYSIS
Department Of Civil Engineering
J.K.K. MUNIRAJAH COLLEGE OF TECHNOLOGY,

T.N.PALAYAM

Mobile :8675834476
Email:hodcivil@jkkmct.edu.in

SESSION DETAILS

- Computational Fluid Dynamics Modeling.
- Optimization Strategies.
- Industrial approach to projects.
- Design and operation of hydraulic systems across various sectors.

RESOURCE PERSON

Dr. L. Vignesh Rajkumar**,Ph.D**

Assistant Professor,
VIT University,Vellore

IMPORTANT DATES

Last Date *for* Receipt of Registration form :
19.09.2022

J.K.K. MUNIRAJAH COLLEGE OF

TECHNOLOGY, T.N.PALAYAM

ONE DAY Workshop

On

OPTIMIZING HYDRAULIC SYSTEM EFFICIENCY THROUGH ADVANCED FLUID DYNAMICS ANALYSIS
21-09-2022

REGISTRATION FORM

Name: ……

Gender: **MALE/ FEMALE**

Qualification: ……

Address for Communication:

……

……

……

PIN. ……

Email……

Mobile No. ……

Date:

Place:

Signature of the applicant

J.K.K. MUNIRAJAH COLLEGE OF TECHNOLOGY

Approved by AICTE, New Delhi And Affiliated to Anna University, Chennai.

Accredited by NAAC with "A" grade

T.N. Palayam (Po), Gobi (Tk), Erode (Dt) – 638 506

Name of Event Organized	Workshop
Title of the Event	Optimizing hydraulic system efficiency through advanced fluid dynamics analysis
Date of Event Organized	21.09.2022
No of Participants	14
Venue	Seminar Hall
Name of Chief Guest/Speakers	Dr. L. Vignesh Rajkumar

Description/Conclusion:

Hydraulic systems play a pivotal role in various industrial applications, ranging from manufacturing to aerospace, where precision and efficiency are paramount. This study explores the optimization of hydraulic system efficiency through the application of advanced fluid dynamics analysis. By computational tools and methodologies, we delve into the intricate flow characteristics within hydraulic components to identify opportunities for improvement. The research focuses on three key aspects such as Computational Fluid Dynamics Modeling Using state-of-the-art CFD simulations, we create a detailed digital representation of the hydraulic system. Including modeling fluid behavior, pressure distribution, and velocity profiles within crucial components such as pumps, valves, and actuators. The simulations provide a comprehensive understanding of flow dynamics, enabling us to identify areas of inefficiency and potential optimization.Optimization Strategies Building upon the insights gained from CFD simulations.This involves fine-tuning parameters such as component geometries, fluid properties, and operating conditions to minimize energy losses and improve performance.The goal is to achieve a balance between pressure requirements, flow rates, and system reliability.Experimental Validation to see effectiveness of the proposed optimizations, a series of real-world experiments are conducted on a prototype hydraulic system. Performance metrics, including energy consumption, response times, and overall system reliability, are measured and compared with baseline data. The experimental results to validate the accuracy of the CFD simulations and the practical applicability of the optimization strategies.our research aims to contribute to the advancement of hydraulic system technology, providing industries with practical insights to improve energy efficiencyand enhance overall system performance. The findings of this study have the potential to influence the design and operation of hydraulic systems across various sectors, leading to more sustainable and optimized industrial processes.

Speaker details: Dr.L.Vignesh Rajkumar,Ph.D, Assistant professor, VIT,Vellore

CONVENOR

J.K.K. MUNIRAJAH COLLEGE OF TECHNOLOGY

Approved by AICTE, New Delhi And Affiliated to Anna University, Chennai.

Accredited by NAAC with "A" grade

T.N. Palayam (Po), Gobi (Tk), Erode (Dt) – 638 506

OPTIMIZING HYDRAULIC SYSTEM EFFICIENCY THROUGH ADVANCED FLUID DYNAMICS ANALYSIS

Participants Name List

DEPARTMENT OF CIVIL ENGINEERING

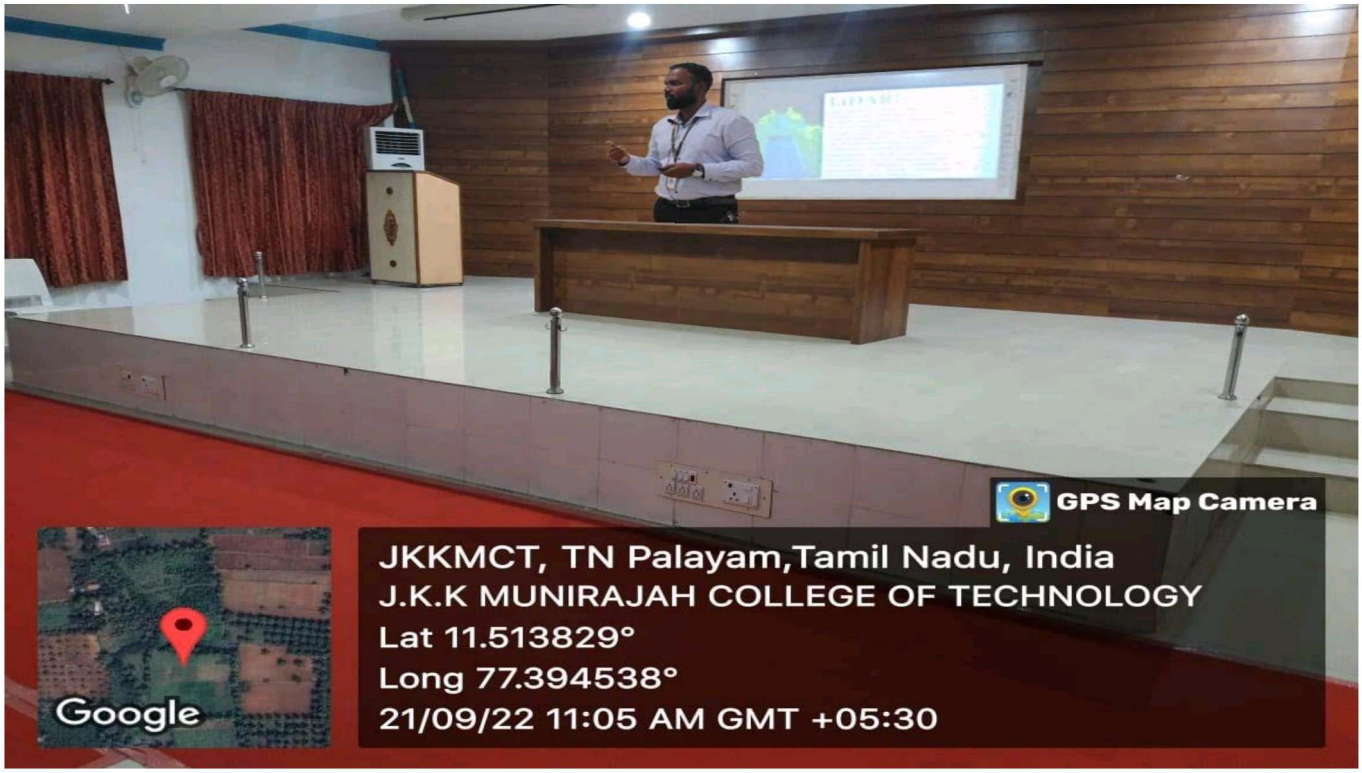
S.NO	NAME	YEAR / DEPT	SIGNATURE
1	ANILKUMAR BALDABOI	IV-CIVIL	
2	DEBACHAND MUDULI	IV-CIVIL	
3	R.DIVAKAR	III- CIVIL	
4	S.SUSHITRA	II- CIVIL	
5	K.KAVITHA	III- CIVIL	
6	P.PIRITHISH	III- CIVIL	
7	N.NAGHUL	III- CIVIL	
8	S.SIVAKUMAR	III- CIVIL	
9	S.SANJEEVAN	III- CIVIL	
10	L.ANBALAGAN	II- CIVIL	
11	P.KARTHI	II- CIVIL	
12	R.PARAMESWARAN	II- CIVIL	
13	S.VINOTHKUMAR	II- CIVIL	
14	R.SASI PRAKASH	II- CIVIL	

J.K.K. MUNIRAJAH COLLEGE OF TECHNOLOGY

Approved by AICTE, New Delhi And Affiliated to Anna University, Chennai.

Accredited by NAAC with "A" grade

T.N. Palayam (Po), Gobi (Tk), Erode (Dt) – 638 506



Optimizing hydraulic system efficiency through advanced fluid dynamics analysis - 21.09.2022