Dr. M.G.R.
EDUCATIONAL AND RESEARCH INSTITUTE
(Deemed to be University)

Maduravoyal, Chennai - 600 095. Tamilnadu, India.

(An ISO 9001-2015 Certified Institution)

MGR ASSOCIATION FOR GREAT INNOVATIVE CREATORS

Department of Civil Engineering			
Event Title	Conference on Smart and innovative Technquies in Civil Engineering		
Objective of Event	To induce new techniques used in civil Engineering		
Chief Guest /Speaker Details	Er.V.Sahadevan, Managing Director, Sri Selliamman & Co Infra Developers		
Date	12/03/2024 to 13/03/2024	Time	10.00 AM to 04.00 PM
Venue	Civil Smart Room	No. of Participants	100

REPORT

TITLE

Conference on Smart and innovative Technquies in Civil Engineering

CONTENT

Day 1 commenced with the inauguration at 10:30 AM, beginning with the Thamizh Thai vazhthu and the traditional lighting of the Kuthu Vilaku by our honorable chief guest, Dr. A. Ramachandra Murthy CSIR-SERC along with Dr. G. Gopalakrishnan, Provost, Dr. V. Cyril Raj, Additional Joint Registrar, Dr. T. Felix Kala, Joint Registrar of Student Affairs, Dr. S. Arivalagan, Joint Registrar of Infrastructure, and Dr. T. Kavitha, Head of the Department.

The program started with a Welcome Address delivered by Dr. T. Kavitha, Head of the Civil Engineering Department. Esteemed Provost, *Dr. G. Gopalakrishnan, and Dr. V. Cyril Raj shared valuable insights during the special address session. Dr. Ra. B. Deepa, Deputy Head of the Civil Department, introduced *our Chief Guest, Dr. A. Ramachandra Murthy, Chief Scientist & Head of CSIR-SERC, to the audience. Our esteemed Vice Chancellor, Dr. Geetha Lakshmi, presented the chief guest with a memento.The Technical Session began under the guidance of Dr. Edwin D Thangam, Senior Professor, *Dr. S. Arivalagan, Joint Registrar of Infrastructure, and *Dr. V. Manjula, Associate Professor, as session heads. Day one concluded successfully with paper presentations covering various research topics, and certificates were issued by the Department Head.

Dr. A. Ramachandra Murthy, a distinguished speaker affiliated with CSIR-SERC, delivered a captivating keynote address centered on the theme of "Ultra High

Performance Concrete - Repair and Retrofitting Applications for Reinforced Concrete Elements in Damaged and Deteriorated Buildings." Drawing upon his extensive expertise, Dr. Murthy elucidated the multifaceted realm of UHPC, offering a comprehensive overview supplemented by detailed insights into its practical applications.

In his discourse, Dr. Murthy meticulously delineated the pivotal tests imperative for assessing the compressive strength, as well as the pre- and post-tensile strength, of concrete. Moreover, he meticulously explored the nuances inherent in various repair materials and techniques, including the intricate compositions of crack concealing materials. Through his erudite exposition, he shed light on the prevailing strengths and inherent limitations of existing repair methodologies, while delving into the profound impact of fiber orientation during the concrete placement process.

In addition to his discussion on the mechanical properties of UHPC, Dr. Murthy astutely addressed the prevailing knowledge gaps concerning its efficacy as a strengthening material. He cogently articulated the transformative advancements witnessed in the realm of cementitious materials over the past two decades, culminating in the emergence of UHPC as a formidable contender in the domain of structural repair and rehabilitation.

A notable highlight of Dr. Murthy's presentation was his comprehensive enumeration of the characteristic attributes of UHPC. These encompassed a gamut of factors ranging from its elevated cement content and unique workability to its autogenous shrinkage tendencies and interfacial bonding dynamics. Furthermore, his discourse encompassed a sophisticated analysis of fatigue studies pertaining to strengthened structural elements, alongside the elucidation of analytical models aimed at predicting the residual fatigue life of damaged reinforced concrete elements.

Transitioning seamlessly to the imperative discourse on sustainability, Dr. Murthy navigated the intricate terrain of environmental considerations vis-à-vis UHPC production. He underscored the sobering statistic that a significant proportion of global carbon emissions is attributable to the production processes associated with hydraulic cement. Against this backdrop, he meticulously outlined a plethora of alternative measures aimed at mitigating carbon footprints, encompassing the judicious utilization of natural gas, chemical additives for CO2 absorption, and refinements in clinker grinding processes.

As the discourse unfolded, Dr. Murthy articulated a compelling research agenda aimed at advancing the frontiers of UHPC technology. This encompassed a multifaceted approach encompassing investigations into GGBS-based UHPC formulations, evaluation of interfacial bonding properties, and a meticulous examination of the structural integrity of rehabilitated and retrofitted reinforced concrete beams under varying loading conditions. Moreover, his visionary outlook encompassed the development of predictive fatigue assessment models tailored to address the unique challenges posed by damaged RC elements strengthened with UHPC strips.

In essence, Dr. Murthy's keynote address served as a beacon of intellectual illumination, illuminating the path towards a more sustainable, resilient, and technologically advanced future in the realm of structural engineering and materials science.

EVENT OUTCOME

Students address served as a beacon of intellectual illumination, illuminating the path towards a more sustainable, resilient, and technologically advanced future in the realm of structural engineering and materials science.

PHOTOS

Dr. A. Arivumangai Mrs.T.Sivaranjani