



PRAJWALAM We create the world

A NEWSLETTER OF CIVIL ENGINEERING DEPARTMENT

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EDITOR'S VOICE:

Chemical technologies for modern concrete production

Concretes are the most used and viable construction materials that their production processes need to be improved adapting modern global issues in energy and ecological conservations. Concrete productions are regarded as one of the most significant contributors to the global issues in energy demand and ecological degradations. The discussion in these circumstances cannot be separated from the context of cement production as main binder component in concrete. Indeed, the main issues lie on the productions of cements which the main component is clinker. Its production releases approximately equal amount carbon dioxide equivalent CO₂e of clinker produced and requires high amount of energy during sintering process. Approximately 5 – 7 % of global CO₂ come from cement productions .In later stage, the comminution processes of clinker together with other constituents (e.g. gypsum and supplementary cementitious materials) to form cement powder requires high amount of energy as well. This cement comminution process consumes about one-third of the energy requirement to produce a ton of cement .At this time and the foreseen future no option of construction materials is more viable than concretes and this is the main reason that the efforts are needed to improve the eco-aspects and energy efficiency in concrete productions with particular intentions on clinker consumption and cement production energy. The efforts have included such as advancements in the equipment for cement productions as well as optimizations of cement and concrete mixture compositions by the adjustments of particle size distributions (PSD) and the uses of supplementary cementitious materials (SCM). The outcomes of these efforts are found can be intensified significantly by further relatively easier manner of complementing chemicals. In modern practices chemicals are used as additives and admixtures. Small dosages of chemical additives commonly within the magnitude of hundreds ppm by weight of cements are added during the comminution process that act as cement grinding aids (CGA) in order to decrease the unnecessary energy consumption. Additionally, the uses of CGA can improve the performances of hydrated cements either due to better PSD, chemical influences or these combinations. In these cases, the portion of clinker as the most chemically active element in cement can be substituted with SCM. In majorities of countries, the performances requirements of cements are nationally standardized and the innovations are commonly put upon production processes to accord the standard such as by the reductions in clinker consumption and energy which are also cost benefit.

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ABOUT DEPARTMENT :

Civil engineering is a professional engineering discipline that deals with the design, construction and maintenance of the physical and naturally built infrastructure for fulfillment of Basic Needs of human race including Transportation, Communication, Energy production, Religious, Cultural, Sports and Community and Social and Developmental activities like bridges, roads, canals, dams and buildings. Department is the foremost in imparting Civil Engineering education in KITS. Well qualified and experienced faculty is one of the salient feature of the department and acute care is taken to ensure that students acquire essential engineering concepts with in-depth understanding In addition to, the civil department is well equipped with required departmental laboratories with tools and equipments.

Vision of the Department:

Create a congenial learning environment for imparting knowledge, skills and values.

Mission of the Department:

- DM1 Providing state of the art facilities for learning and practicing.
- DM2 Providing additional skills and training to meet the needs of the industry.
- DM3 Inculcating professional and ethical values and serve the industry, society and environment.

A GUEST LECTURE

ADVANCE ASPECTS IN CIVIL ENGINEERING AND CAREER GUIDANCE IN CIVIL ENGINEERING

RESOURCE PERSON: Dr.K.Srinivas Raju, Professor.

The aim of this Guest Lecture is to tell the students the importance of “ADVANCE ASPECTS IN CIVIL ENGINEERING” and the role of civil engineers at different levels. The importance of neural networks & water resources advance aspects and its future scope was dealt to motivate the students towards upgrading trends in Water Resources engineering sector.

About Guest Lecture:

The use of artificial neural network (ANN) modeling for prediction and forecasting variables in water resources engineering are being increasing rapidly. Infrastructural applications of ANN in terms of selection of inputs, architecture of networks, training algorithms, and selection of training parameters in different types of neural networks used in water resources engineering have been reported.

ANN modeling conducted for water resources Engineering variables (river sediment and discharge) published in high impact journals since 2002 to 2011 have been examined and presented in this review.



జల సంరక్షణ ద్వారానే జీవరక్షణ సాధ్యం

గుంటూరు(విద్య): నీటి వనరుల్ని సద్వినియోగం చేసుకుని జల సంరక్షణ చేయాలని టీటీఎస్ పిలారిని అధ్యాపకులు డాక్టర్ శ్రీనివాసరాజు సూచించారు. విజనంపాడులోని కీటీఎస్ ఇంజనీరింగ్ కళాశాలలో బుధవారం సివిల్ ఇంజనీరింగ్ విభాగం నిర్వహించిన సదస్సులో ఆయన మాట్లాడారు. సదస్సుకు కళాశాల ప్రెసిడెంట్ డాక్టర్ పి బాబు అధ్యక్షత వహించారు. డాక్టర్ శ్రీనివాసరాజు మాట్లాడుతూ నీటి సంరక్షణ వల్ల అనేక ప్రయోజనాలు ఉంటాయన్నారు. సివిల్ ఇంజనీరింగ్ విద్యార్థులు కట్టడాల్లో వీటిపై దృష్టిసారించాలన్నారు. కార్యక్రమంలో కళా



మాట్లాడుతున్న డాక్టర్ శ్రీనివాసరాజు

శాల ఛైర్మన్ కోయి సుబ్బారావు, సివిల్ విభాగాధిపతి ఎం రవీంద్రకృష్ణ, ఎంజెవి సురేష్, ఆర్ మురళీకృష్ణ తదితరులు పాల్గొన్నారు.

Scientist of the Month:



WILBER AND ORVILLE WRIGHT

Ok, so technically there are two people here, but we'll count them as one.

The Wright brothers – Orville (August 19, 1871 – January 30, 1948) and Wilbur (April 16, 1867 – May 30, 1912) – were two American aviation pioneers generally credited with inventing, building, and flying the world's first successful airplane. The brothers' breakthrough was their creation of a three-axis control system, which enabled the pilot to steer the aircraft effectively and to maintain its equilibrium. This method remains standard on fixed-wing aircraft of all kinds. From the beginning of their aeronautical work, the Wright brothers focused on developing a reliable method of pilot control as the key to solving "the flying problem". This approach differed significantly from other experimenters of the time who put more emphasis on developing powerful engines. Using a small homebuilt wind tunnel, the Wrights also collected more accurate data than any before, enabling them to design more efficient wings and propellers.

The brothers were responsible for creating the airplane. Originally bike mechanics, their love of kite-flying and curiosity led them to new heights. Initial prototypes did not stay in the air for long, but the brothers worked tirelessly to develop a pulley system to change the shape of the wing during flight, giving the plane more stability – changing the world we live in today.

“It wasn’t luck that made them fly; it was hard work and common sense; they put their whole heart and soul and all their energy into an idea and they had the faith.”

— David McCullough, The Wright Brothers