

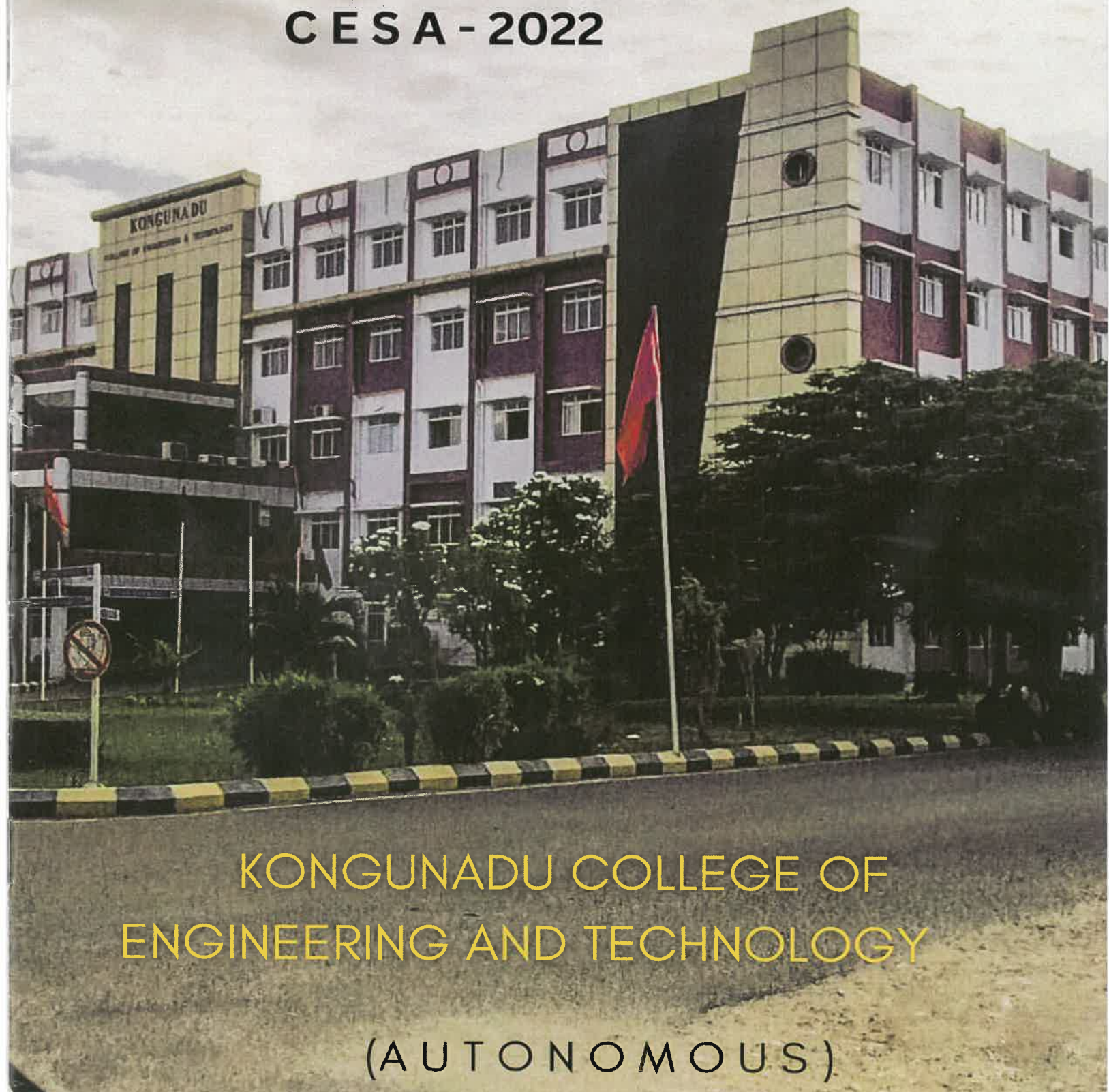


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KONGUNADU COLLEGE OF
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CLIMATE CHANGE AND GLOBAL WARMING.

Climate change refers to long-term shifts in temperatures and weather patterns. Such shifts can be natural, due to changes in the sun's activity or large volcanic eruptions. But since the 1800s, human activities have been the main driver of climate change, primarily due to the burning of fossil fuels like coal, oil and gas.

Burning fossil fuels generates greenhouse gas emissions that act like a blanket wrapped around the Earth, trapping the sun's heat and raising temperatures.

The main greenhouse gases that are causing climate change include carbon dioxide and methane. These come from using gasoline for driving a car or coal for heating a building, for example. Clearing land and cutting down forests can also release carbon dioxide. Agriculture, oil and gas operations are major sources of methane emissions. Energy, industry, transport, buildings, agriculture and land use are among the main sectors causing greenhouse gases.



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Every increase in global warming matters

GENERATING POWER:

Generating electricity and heat by burning fossil fuels causes a large chunk of global emissions. Most electricity is still generated by burning coal, oil, or gas, which produces carbon dioxide and nitrous oxide – powerful greenhouse gases that blanket the Earth and trap the sun's heat. Globally, a bit more than a quarter of electricity comes from wind, solar and other renewable sources which, as opposed to fossil fuels, emit little to no greenhouse gases or pollutants into the air.

MANUFACTURING GOODS:

Manufacturing and industry produce emissions, mostly from burning fossil fuels to produce energy for making things like cement, iron, steel, electronics, plastics, clothes, and other goods. Mining and other industrial processes also release gases, as does the construction industry. Machines used in the manufacturing process often run on coal, oil, or gas; and some materials, like plastics, are made from chemicals sourced from fossil fuels. The manufacturing industry is one of the largest contributors to greenhouse gas emissions worldwide.

AI IN CIVIL ENGINEERING

The branch of computer science called artificial intelligence deals with the study, creation, and use of machine intelligence. Artificial intelligence-based technologies may frequently offer useful options in effectively addressing challenges in civil engineering, as traditional approaches for modelling as well as optimising building and engineering networks need immense quantities of computational power. Artificial intelligence (AI), also referred to as enhanced intelligence (AI), seems to be a transformative method that uses machines to carry out tasks intelligently, effectively, and efficiently.

This is regarded as being one of the methods which combines human strengths in what seems like a way that enables the project to be completed neither robots neither people by itself can perform. By taking into account AI ideas, whatever knowledge may be made standardized and easily accessible towards consumers, enabling them to make the best decision possible while taking into account both facts at hand as well as verifiable evidence.



Deep learning technology have indeed been effectively used in numerous industries, including construction management, since many generations. In reality, increasing rise of complicated systems like skyscrapers distant past thrust techniques for machine learning into the spotlight inside the sector. More than anyone, you are witnessing its advancement and implementation of AI in the construction sector, such as the application of smart algorithms, big data, and deep learning machines that have revolutionised efficiency in terms of production.



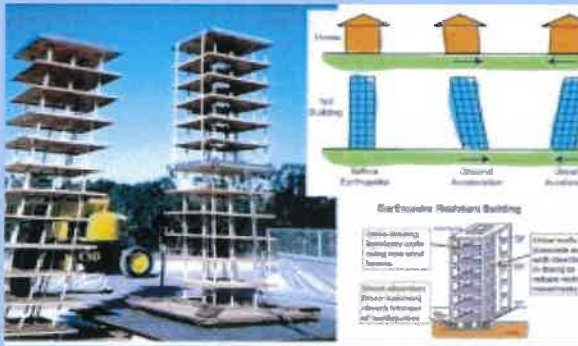
APPLICATIONS AND ADVANCES IN CIVIL ENGINEERING

It is an AI branch based on neural networks that learn from data instead of being programmed with precise instructions. Given the huge amount of Civil Engineering data and data science maturity, Deep Learning is now mature enough to be considered a preliminary design tool for civil engineering structures, especially high-budget mission-critical works such as skyscrapers or bridges. This article will focus on the AI applications for civil engineering and the promising applications of structural analysis engineering.



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EARTHQUAKE RESISTANT STRUCTURES



- earthquake-resistant construction, the fabrication of a building or structure that is able to withstand the sudden ground shaking that is characteristic of earthquakes, thereby minimizing structural damage and human deaths and injuries. Suitable construction methods are required to ensure that proper design objectives for earthquake-resistance are met. Construction methods can vary dramatically throughout the world, so one must be aware of local construction methods and resource availability before concluding whether a particular earthquake-resistant design will be practical and realistic for the region

Currently, there are several design philosophies in earthquake engineering, making use of experimental results, computer simulations and observations from past earthquakes to offer the required performance for the seismic threat at the site of interest. These range from appropriately sizing the structure to be strong and ductile enough to survive the shaking with an acceptable damage, to equipping it with base isolation or using structural vibration control technologies to minimize any forces and deformations. While the former is the method typically applied in most earthquake-resistant structures, important facilities, landmarks and cultural heritage buildings use the more advanced (and expensive) techniques of isolation or control to survive strong shaking with minimal damage. Examples of such applications are the Cathedral of Our Lady of the Angels and the Acropolis Museum.[citation needed]

Trends and projects



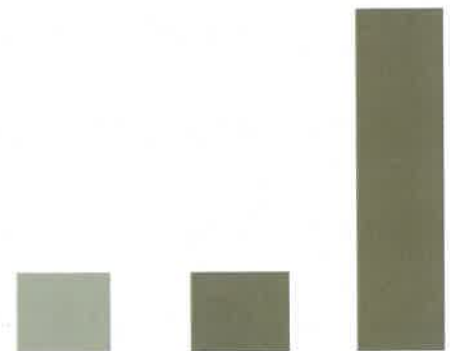
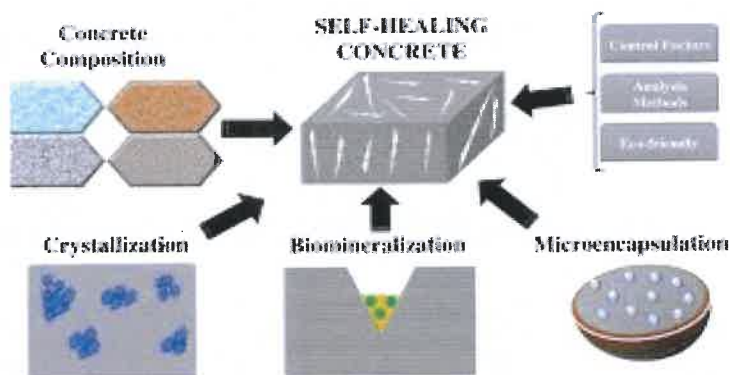
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BACTERIAL CONCRETE

The genesis of self-healing concrete lies in a biological reaction involving dormant limestone and a calcium-based nutrient, facilitated by specific bacteria, typically of the Bacillus genus. These bacteria, along with the calcium nutrient known as Calcium Lactate, are introduced during the concrete mixing process. Remarkably, these bacteria can remain dormant for up to 200 years. When cracks form in the concrete, water infiltrates the fissures, prompting the bacteria spores to germinate. The bacteria then feed on calcium lactate, consuming oxygen in the process. This consumption transforms soluble calcium lactate into insoluble limestone, which subsequently hardens and fills the crack autonomously, without external assistance. Notably, the oxygen consumption by the bacteria contributes to preventing steel corrosion in cracks, enhancing the overall durability of steel-reinforced concrete construction.



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DIGITAL LEARNING



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Digital learning is learning that is supported by technology. It encompasses any type of learning that is accompanied by technology or by instructional practice that makes effective use of technology. It includes a wide array of practices, including blended and virtual learning.

A variety of names began to be used to denote education conducted using various technologies; these include online learning and e-learning. As an example of how confusing this had become Singh and Thurman (2019)[1] identified 46 definitions for online learning. The name 'digital learning' has gained popularity as a way to encompass the aforementioned concepts and others.

The scope of Digital learning is wide, including any teaching strategy or resource that involves technology.

Although Covid-19 is often discussed in reference to its negative effects on society, some would argue that it acted as a catalyst for the digital transformations in education. [3] On the other hand, other researchers argue that the investments directed towards acceleration of digitalization during the pandemic were obsolete for the digital transition in education, with the existence of some exceptions.[4]

Nevertheless, some sources argue that learning digitally from home created some positive trends. The presence of new learning technologies may have contributed to a diminished spreading spread of the virus.[5] Outside of health related effects, e-learning enabled students to continue their studies even in unprecedented global conditions.[6]

It is important to note that while some state that the level of knowledge increased during the pandemic,[6] others state that students did not necessarily comprehend the subjects taught online

BIM

BUILDING INFORMATION MODELLING

Building Information Modeling (BIM): BIM is a process involving the generation and management of digital representations of physical and functional characteristics of places. It's used to design, construct, and operate buildings and infrastructure. BIM allows stakeholders to visualize the entire project lifecycle, from initial planning and design to construction and maintenance, in a collaborative and coordinated manner. Key benefits of BIM include improved communication and coordination among project teams, enhanced visualization and analysis capabilities, reduced errors and conflicts during construction, and better facility management through the integration of asset information. Digital Twins: A digital twin is a virtual representation of a physical object, system, or process. In the context of civil engineering and construction, a digital twin can be created for a building, infrastructure asset, or even an entire city. Digital twins are created by collecting real-time data from sensors, IoT devices, and other sources, which is then used to simulate and analyze the behavior and performance of the physical counterpart. Digital twins enable engineers and stakeholders to monitor and optimize the performance of assets, predict maintenance needs, and simulate various scenarios to improve decision-making



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P W D

PUBLIC WORK DEPARTMENT



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Public Works Department is one of the oldest Service Departments of the Government, serving for the past 153 years in the construction and maintenance of Government Buildings. Many buildings and monuments stand as testimony to our engineering skill. The organization marches towards better service delivery to the people by adopting to the present day trend of e-governance. The Department is taking all efforts for better service delivery with this long term vision. The Buildings Organisation provides structural safety to all public buildings adopting latest technology and following specifications of Indian Standard Code. All the Monuments and Heritage buildings under the control of Government are being protected by PWD by keeping their Architectural, Aesthetic, Historic, archeological and prominent symbolic values. This department has long term vision for quality service for safe and purposeful public buildings at reasonable cost adopting best evolved practices and advanced modern technologies.

SPACE RESEARCH



Hazards caused by space technology

All launch vehicles contain a huge amount of energy that is needed for some part of it to reach orbit. There is therefore some risk that this energy can be released prematurely and suddenly, with significant effects. When a Delta II rocket exploded 13 seconds after launch on January 17, 1997, there were reports of store windows 10 miles (16 km) away being broken by the blast.[7]

Space is a fairly predictable environment, but there are still risks of accidental depressurization and the potential failure of equipment, some of which may be very newly developed.

In April 2004 the International Association for the Advancement of Space Safety was established in the Netherlands to further international cooperation and scientific advancement in space systems safety

Space technology is technology for use in outer space. Space technology includes space vehicles such as spacecraft, satellites, space stations and orbital launch vehicles; deep-space communication; in-space propulsion; and a wide variety of other technologies including support infrastructure equipment, and procedures.

Many common everyday services for terrestrial use such as weather forecasting, remote sensing, satellite navigation systems, satellite television, and some long-distance communications systems critically rely on space infrastructure. Of the sciences, astronomy and Earth science benefit from space technology.[1] New technologies originating with or accelerated by space-related endeavors are often subsequently exploited in other economic activities.



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GEO POLYMER CONCRETE

1. Geopolymer concrete (GPC) is a cement-based concrete that is made from materials rich in silica and alumina, and is an alternative to Portland cement concrete (PCC). GPC is a sustainable construction material that has many advantages, including:
2. **Reduced carbon emissions:** GPC can be designed to have lower carbon dioxide emissions than other materials like Portland cement.
3. **Waste reduction:** GPC can be made using waste materials, industrial byproducts, and minimally processed natural materials.
4. **Durability:** GPC is more durable than OPC under similar curing conditions.
5. **Strength:** GPC has high early age strength and a compressive strength of 55–66% of its entire strength at 28 days.
6. **Workability:** GPC has shorter initial and final setting times than OPC.
7. **Resistance:** GPC is highly resistant to acid, sulphate, and salt attack.
8. **Uses:** GPC is used in bridge construction, high-rise buildings, highways, tunnels, dams, and hydraulic structures.



Geopolymer was the name given by Daidovits in 1978 to materials which are characterized by chains or networks or inorganic molecules. Geopolymer cement concrete is made from utilization of waste materials such as fly ash and ground granulated blast furnace slag (GGBS). Fly ash is the waste product generated from thermal power plant and ground granulate blast furnace slag is generated as waste material in steel plant. Both fly ash and GGBS are processed by appropriate technology and used for concrete works in the form of geopolymer concrete. The use of this concrete helps to reduce the stock of wastes and also reduces carbon emission by reducing Portland cement demand. The main constituent of geopolymers source of silicon and aluminium which are provided by thermally activated natural materials (e.g. kaolinite) or industrial byproducts (e.g. fly ash or slab) and an alkaline activating solution which polymerizes these materials into molecular chains and networks to create hardened binder. It is also called as alkali-activated cement or inorganic polymer cement.



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GREEN CONCRETE TECHNOLOGY



Green concrete is a type of concrete that uses recycled materials and alternative manufacturing techniques to reduce its environmental impact. It's also known as eco-friendly concrete or sustainable concrete.

Green concrete is made using waste materials like fly ash, slag, and recycled aggregates, instead of the natural resources like limestone and clay that traditional concrete uses. This reduces the consumption of natural resources and energy, and helps with waste management.

Green concrete has many benefits, including:

Environmental: Reduces carbon footprint, energy consumption, and resource depletion

Technical: High strength, increased durability, improved workability, and reduced permeability

Economic: Faster concrete production, reduced construction costs, and increased service life

The use of recycled or waste materials as a substitute for cement, which reduces the need for new materials and the energy consumed during production.

The reduction of CO₂ emissions associated with the production of traditional concrete, thereby mitigating the harmful effects of greenhouse gases on the environment. The promotion of resource conservation and the reduction of waste in landfills.



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ஜல்லிக்கட்டு காளை திருவிழா



சல்லிக்கட்டு என்றும் அழைக்கப்படும் ஜல்லிக்கட்டு என்பது தமிழ்நாட்டின் பாரம்பரிய விளையாட்டாகும், இது பொங்கலின் மூன்றாம் நாள் - மாட்டுப் பொங்கல் தினத்தில் கொண்டாடப்படுகிறது. (வழக்கமாக இது ஜனவரி 16 அன்று வருகிறது.) இந்த காளைச் சண்டையின் வரலாறு கிமு 400-100 இல் இந்தியாவில் உள்ள ஆயர்களால் விளையாடப்பட்டது. ஜல்லி (வெள்ளி மற்றும் தங்க நாணயங்கள்) மற்றும் கட்டு (கட்டு) ஆகிய இரண்டு வார்த்தைகளில் இருந்து பெயர் உருவாக்கப்பட்டது. மக்கள் கூட்டத்தின் மத்தியில் ஒரு காளை அவிழ்த்து விடப்படுகிறது, அதை அடக்குபவர் அதன் கொம்பில் நாணயங்களைக் கட்டுவார். விளையாட்டில் பங்கேற்கும் நபர்கள் அதைத் தடுக்க விலங்குகளின் கூம்பைப் பிடிக்க முயற்சிக்கின்றனர். சில சமயம் காளையுடன் சேர்ந்து ஓடுவார்கள். புலிக்குளம் அல்லது காங்கயம் என்பது விளையாட்டுக்காக பயன்படுத்தப்படும் காளைகளின் இனமாகும். திருவிழாவில் வெற்றி பெறும் காளைகளுக்கு சந்தையில் அதிக கிராக்கி ஏற்பட்டு, அதிக விலை கிடைக்கும். அவை இனப்பெருக்கத்திற்கும் பயன்படுத்தப்படுகின்றன. சிந்து சமவெளி நாகரிகத்தின் இடத்திலிருந்து விளையாட்டைப் பிரதிநிதித்துவப்படுத்தும் முத்திரை ஒன்று கண்டுபிடிக்கப்பட்டு, புது தில்லி தேசிய அருங்காட்சியகத்தில் பாதுகாக்கப்பட்டுள்ளது. மேலும், தமிழகத்தின் மதுரை அருகே 1500 ஆண்டுகள் பழமையான குகை ஓவியம் வெள்ளை கயோலின் நிறத்தில் கண்டுபிடிக்கப்பட்டுள்ளது. மனிதர்கள் தங்கள் நிலத்தில் விவசாயம் செய்வதன் மூலம் அவர்களிடையே குழப்பத்தை ஏற்படுத்தியதற்காக சிவபெருமான் பசுவாவின் காளையை சபித்த கதையையும் புராணக்கதை கூறுகிறது.



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V.D SNAPS



V.DIVAKARAN
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Text here

காற்றில் கரைந்த மலர் வாசமும்
தடாகத்தில் ஒழுகிய மழைவெல்லமும்
ஆகாயத்தில் தோன்றி மறைந்த வானவில்லும்

ஆற்றில் பதபதைத்த தண்ணீர் குமிழ்களும்
பூந்தோட்டத்தில் பறக்கின்ற பட்டாம்பூச்சிகளும்

கோவிலில் கிடைக்கின்ற அமைதியும்
நிலவில் தோன்றிய அழகும்
கண்களை பார்க்கின்ற மலர் வன்னங்களும்

கவிதையை அழகாக்கும் அற்புதமான
வார்த்தைகளும்
பாடல்களை ஈர்க்கும் வித்தியாசமான
இசைக்கருவிகளும்

இத்தனை அழகையும் ஏன் அவள் ரசிக்க
வேண்டும்
இத்தனை அழகையும் ஏன் அவளால் ரசிக்கப்
படவேண்டும்

இவை அனைத்தும் காலத்தின் விதி
அன்றோ....

VINOTHINI.R
B.E CIVIL (III YEAR)
621322103053



பகலை ரசித்தவள்
இறவை தேடுகிறாள் என்று

தன் இயல்பை தொலைத்தவள்
தேடப்போகிறாள் என்று

எவையெல்லாம் ரசித்தாளோ
அனைத்தையும் வெறுக்கிறாள்

எதையெல்லாம் வெறுத்தாளோ
அனைத்தையும் ரசிக்கத் தொடங்கினாள்

இவை அனைத்தும் யாருடைய பிழை என்று
தெரியவில்லை

அவளின் பிழையா!?... இல்லை காலத்தின்
விதியா!?....



SHOBANA.S
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621322103044

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To produce well reformed graduates with engineering skills for professional practice, advanced study and research through state of art infrastructure facilities and adopting innovative teaching methods

To inculcate professional and ethical responsibilities related to industry, society and environment.

To interact with industries and address issues related to infrastructure, public health and environmental protection for sustainable development..