




# ONE DAY WORKSHOP ON INTRODUCTION TO GEOPOLYMER COMPOSITES TECHNOLOGY

Date: 17<sup>th</sup> February, 2017 (Friday) | Time: 09.00 a.m. to 05.30 p.m.  
Venue: Pari Arangam, Department of Civil Engineering,  
College of Engineering, Guindy, Anna University, Chennai.



Organised by



Indian Concrete Institute  
Chennai Centre

In Association with



Indian Institute of  
Technology  
Madras - Chennai



Anna University  
Chennai



CSIR - SERC



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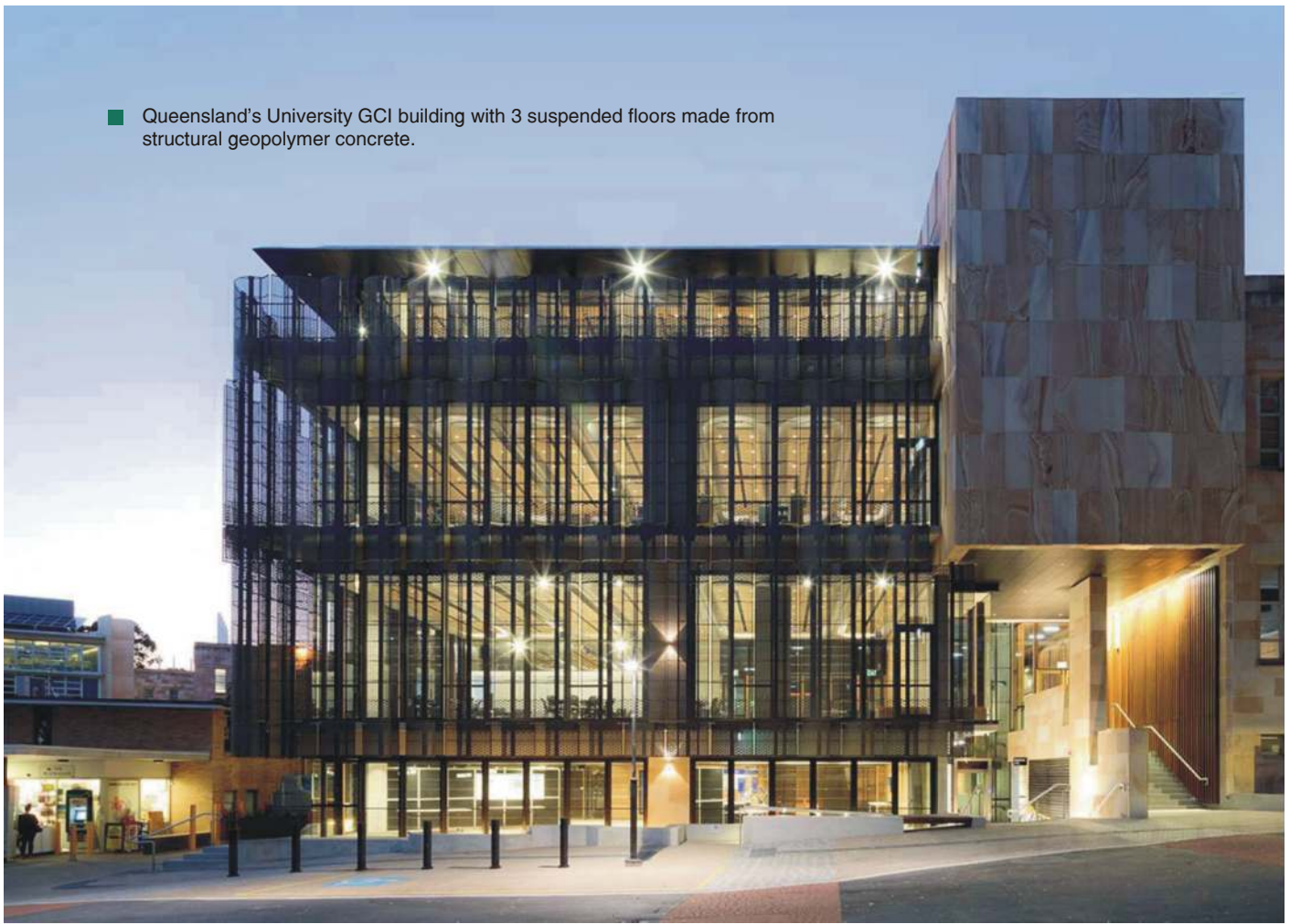


Sponsor



Kiran Global Chems Limited

- Queensland's University GCI building with 3 suspended floors made from structural geopolymer concrete.



## About the Workshop

A greener durable alternative to portland cement, inorganic polymer concrete (Geopolymer) fits into an emerging class of cementitious materials.

Geopolymer Concrete has a number of benefits. The first is that it has the potential to substantially curb CO<sub>2</sub> emissions. It can also produce a more durable infrastructure capable of lasting hundreds of years, instead of tens. And by utilizing fly ash, it can conserve hundreds of thousands of acres currently being used for disposal of coal combustion products, and protect our water ways from fly ash 'contamination' too.

Geopolymer concrete (GPC) has better resistance to corrosion and fire, higher early rate of compressive and tensile strengths, a rapid strength gain, and lower shrinkage.

It is being used abroad for major infrastructural applications, railway sleepers, electric power poles, road pavements, cement mortar, marine structures and waste containments. The current trend of research is under way to develop Geopolymer systems that create a low embodied energy, low carbon dioxide emission binder that has similar properties to Portland cement. In addition, current research is also focusing on the development of user-friendly Geopolymer Concrete. Thus it can be easily considered that Geopolymer Concrete, as a replacement for Portland cement has wider scope in India.

## Basics of Geopolymer

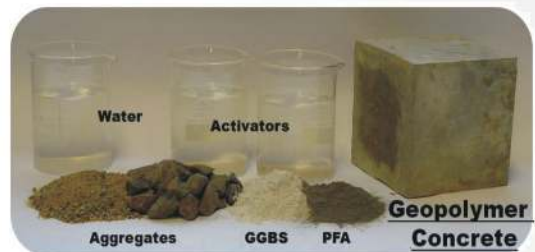
The term 'geopolymer' was first introduced by Davidovits in 1978 to describe a family of mineral binders with chemical composition similar to zeolites but with an amorphous microstructure. Unlike Ordinary Portland/pozzolanic cements, geopolymers do not form calcium-silicate-hydrates (CSHs) for matrix formation and strength, but utilise the polycondensation of silica and alumina precursors to attain structural strength.



## Composition of Geopolymer Cement Concrete Mixes

Following materials are generally used to produce GPCCs:

- ♦ Fly ash
- ♦ GGBS
- ♦ Fine aggregates and
- ♦ Coarse aggregates
- ♦ Catalytic liquid system (CLS):
  - It is an alkaline activator solution (AAS) for GPCC.
  - It is a combination of solutions of alkali silicates and hydroxides, besides distilled water.
  - The role of AAS is to activate the geopolymeric source materials (containing Si and Al) such as fly ash and GGBS.



## WHO CAN BE BENEFITTED?

The workshop will immensely benefit Industry Professionals, Academicians, Research Scholars and Students who are keen to catch up with the latest developments in concrete technology.



## Organising Committee

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## Workshop Fee\*

ICI Members	Non ICI Members	ICI Student Chapter Members	Other Students
₹ 3,450	₹ 5,175	₹ 1,500	₹ 2,000

\*Including ST of 15%

## Mode of Payment

Registration form along with the workshop fee by demand draft / local cheque / multicity cheque drawn in favour of "Indian Concrete Institute Tamilnadu Centre" payable at Chennai.

## For Net Banking

Indian Concrete Institute Tamilnadu Centre,  
Bank Name: CANARA BANK | Branch: CS Branch,  
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## Address for Communication

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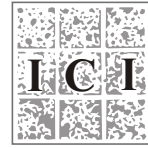
"Ocean Crest", 79, Third Main Road, Gandhi Nagar, Adyar, Chennai - 600 020.  
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**RSVP:** Venkataraman K - +91 90920 23511

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Name: \_\_\_\_\_ Designation: \_\_\_\_\_  
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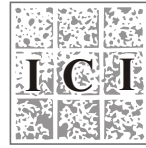
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