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Imperative to find alternative to cement, says French expert

Special Correspondent

International workshop on 'Geopolymer cement and concrete' held

Photo: C Venkatachalapathy



Annamalai University Vice Chancellor M.Ramanathan handing over the proceedings of the international workshop on "Geopolymer cement and concrete" to Joseph Davidovits of Geopolymer Institute, France, at Chidambaram on Tuesday.

CUDDALORE: Going by the quantum of carbon-dioxide emission, the Portland cement industry is the highest polluting industry in the world. Therefore, more than the developed countries the developing countries that require enormous quantity of cement for infrastructure face acute pollution problem, according to Joseph Davidovits of Geopolymer Institute, France.

Hence, it has become imperative to find an alternative to cement, said Mr. Davidovits, popularly known as "Father of Geopolymer technology." He was participating as chief guest at an international workshop on "Geopolymer cement and concrete" organised by the Department of Civil and Structural Engineering of Annamalai University at Chidambaram on Tuesday.

He opined that India and France that had now signed many pacts on high-technology aspects could have focussed attention on geopolymer technology too because it could be equated to nanotechnology.

Mr. Davidovits, who has coined the term 'geopolymer,' said that although geopolymer technology was considered new it had ancient roots and had been used in the construction of the pyramids at Giza in Egypt.

The production of one tonne of Portland cement generated one tonne of carbon-dioxide. According to statistics, 1.8 billion tonnes of cement were produced in the world in 2000 and it accounted for 1.8 billion tonnes of carbon-dioxide.

In developing countries, particularly China, India and Brazil, there was exponential increase in cement production.

Any further economic development in these countries would strongly depend upon creation of more infrastructure and production of more cement. On the contrary, cement production remained constant in the Western countries, particularly in the U.S. and European Union.

The production of one tonne of geopolymer cement would require 3.5 times less energy than that of Portland cement. Therefore, besides deriving cost benefit the geopolymer cement application would also safeguard environment, Mr. Davidovits added. B.Vijaya Rangan of Curtin University of Technology, Perth, Australia, called for transferring the laboratory work on geopolymer to large-scale applications.

M. Ramanathan, Vice-Chancellor of Annamalai University, said that according to statistics 120 million tonnes of coal were burnt in 380 thermal stations in the country during 2006-2007 that generated 108 million tonnes of fly ash.

Hardly 30 million tonnes of fly ash were utilised in the cement and brick industries and the remaining was dumped in ash pond. Using the fly ash in a purposeful manner would also spare vast stretches of land and address the pollution problem, Dr. Ramanathan added.

P.Paramasivam of National University of Singapore, Singapore,
B.Palaniappan, Dean, Faculty of Engineering and Technology, Annamalai University, C.Antony Jeyasehar, Head, Department of Civil and Structural Engineering and chairman of organising committee and
S.Thirugnanasambandam, secretary, spoke.

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