



Nano Silica Discovered from Bio Source for the First Time in the Country

Why in News?

- Nano silica has recently been discovered in the ashes of sugarcane kholi by the National Sugar Institute (NSI). The technology to extract it from the ash has also been developed by NSI, which is now being patented.

Key Points

- NSI Director Prof Narendra Mohan said that the discovery of nano silica particles and the development of its technology was done by Senior Research Fellow Dr. Shalini Kumari. It took two years to develop this technology.
- Until now nano silica was obtained from various mineral sources, but it has been discovered for the first time in the country from a bio source.
- Prof Narendra Mohan said that the process of patenting the technology has been initiated. The technology will also be presented at the Conference of the Indian Chinese Technology Association on July 28-29 in Goa.
- Senior Research Fellow Dr. Shalini Kumari gave information about the steps of acid, alkali and heat treatment in this process. Nano silica technology was also tested from IIT Delhi. The product was confirmed by scanning electron microscopy, X-ray diffraction analysis, and Fourier transform infrared technique.
- The price of nano silica which is being received from mineral source is 700 to 1000 rupees per kg, but the price of nano silica found from bagasse ash will be 100 rupees per kg.
- Sugarcane bagasse is used as fuel for sugar mill boilers. The ash emanating from it was till now only used to bridge the pit. It is also considered a cause of pollution. At the same time, the cost of sugar mills increases in its disposal, but the nano silica particles released from it are also useful for absorbing pollution.
- It is worth mentioning that 50 lakh tonnes of bagasse is obtained from sugar mills in the country, which on burning gives 1.5 million tonnes of ash. About three lakh tonnes of silica nanoparticles can be obtained from this ash. One kilo of bagasse ash gives 20% nano silica particles.
- Nano silica particles are used in pharmaceutical industry, paint and battery industry, lithium iron batteries, nano fertilizers etc.

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