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Climatic Sculptureality project: Green roofs in Bahrain

The Climatic Sculptureality project is an Art & Science research in collaboration with MIT's Department of Earth, Atmospheric and Planetary Sciences, Associate Professor Dan Cziczo. This artistic project will examine processes of creating microclimatic conditions inside the diaphanous body of sculptures made off the space technology nanomaterial silica aerogel. The creative venture of the Climatic Sculptureality project will have some scientific and technological applications:

- As a Scientific Visualization project on the bio-mimicry of microclimatic conditions and experimentation on greenhouse and climate change phenomena.
- On memory and energy storage: We know that silica is a basic component for the fabrication of data storage devices. Silica aerogel could be used on memory and energy storage, as its internal nanoporous surface is enormous.
- As the best insulator: a phenomenal energy saver that could be used on climate change issues.

Silica aerogels are blue and orange for the same reason sky is blue & orange. And the reasons are Rayleigh & Mie scattering, these optical phenomena results when white light scatters off particles smaller than the wavelengths of light, particles typically of the size 5-20 nm. Aerogels contain nanopores of air that are only a few hundred times larger than atoms. This nanostructure made of silica act as particles that scatter white light and make the aerogel appear blue when the light heats the sculpture and orange when the sculpture is back lighted. So, if you keep a piece of silica aerogel in your hand, it's like if you have a piece of Gulf sky in between your fingers!

Biography

Ioannis Michaloudis is a researcher and academic internationally acknowledged as one of the leaders in Art & Science and the first ever creator and researcher on the application of the NASA's nanomaterial silica aerogel in Visual Arts and Design. He has completed his PhD from Paris I, Panthéon-Sorbonne University and Postdoctoral studies from School of Architecture & Planning, Massachusetts Institute of Technology (MIT). He is the Head of Interior Design in Kingdom University in Bahrain and had exhibited internationally in more than 20 Art & Science exhibitions. He had received the "Fulbright Foundation Award for Greek Artists" and the "Golden Lighthouse" in Alexandria XXIV Biennale of Art, cf.

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