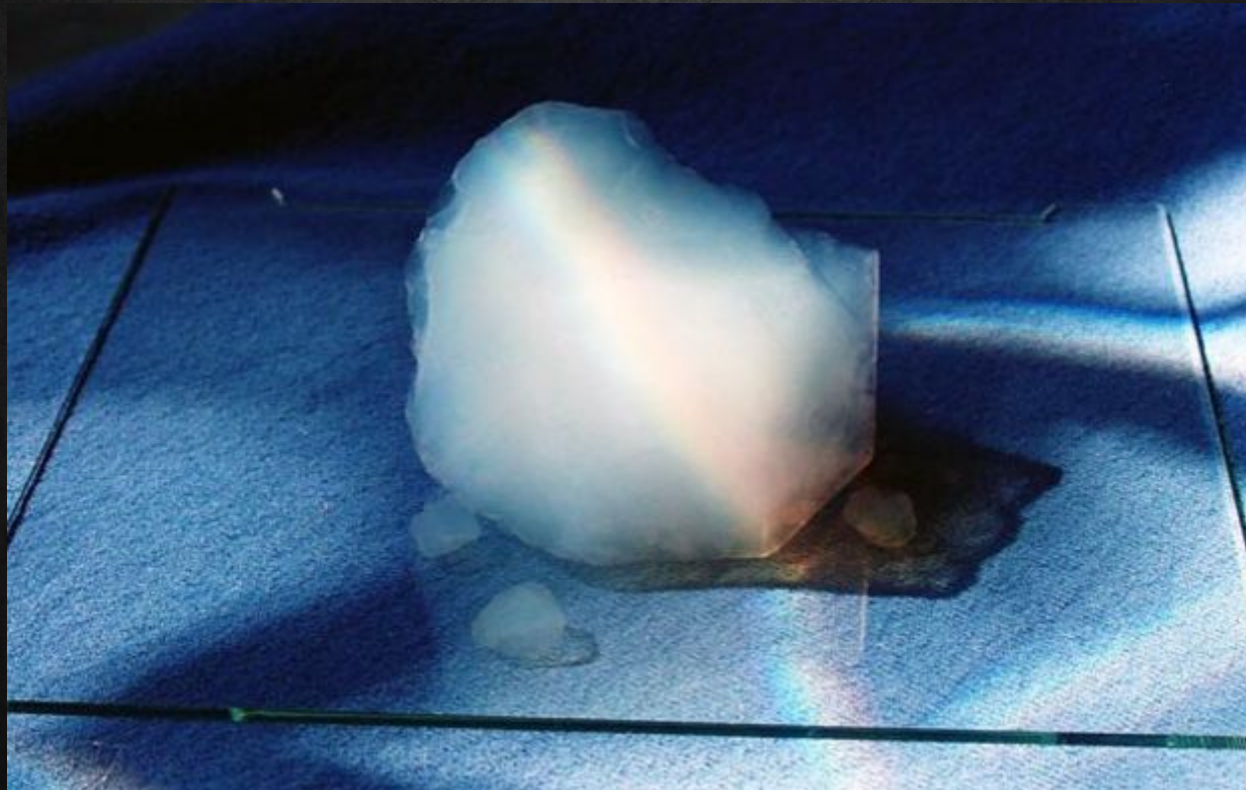


# ***AEROGEL IS THE FUTURE***



*Karelin Aleksandr П-179*

*Tikhomirov Maxim П-180*

# OUTLINE

- What is aerogel?
- Aerogel structure
- *Properties of aerogels*
- *Types of aerogels*
- *Manufacturing methods*
- *Application*
- the prospects

# What is aerogel?

Aerogel is a light, highly porous material with a number of exceptional and even unique physical properties that attract the attention of researchers working in various fields of science and technology.

## DRIVERS

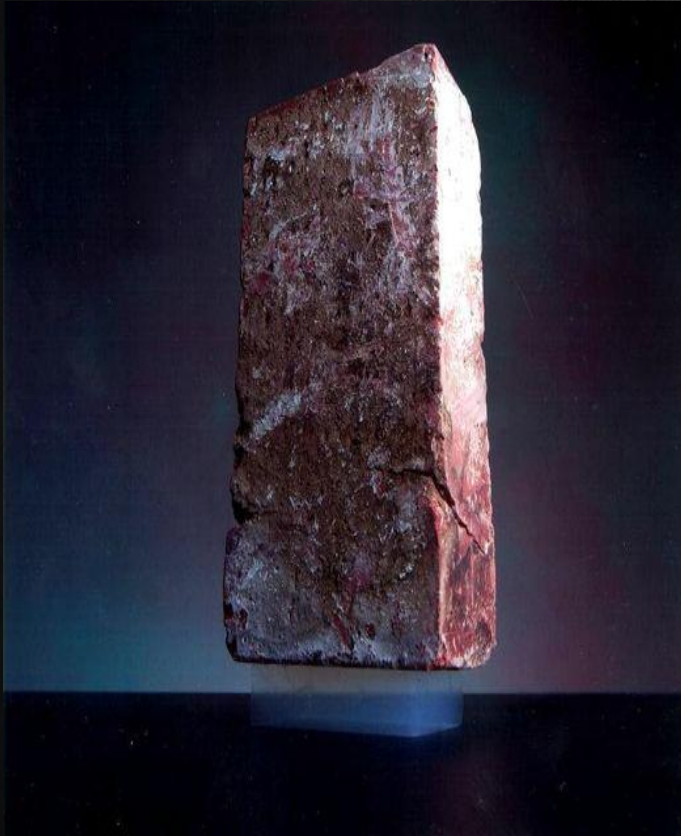
- » Environment friendly material
- » Superior thermal insulation and lighter alternative
- » Large base of end-use application

## RESTRAINTS

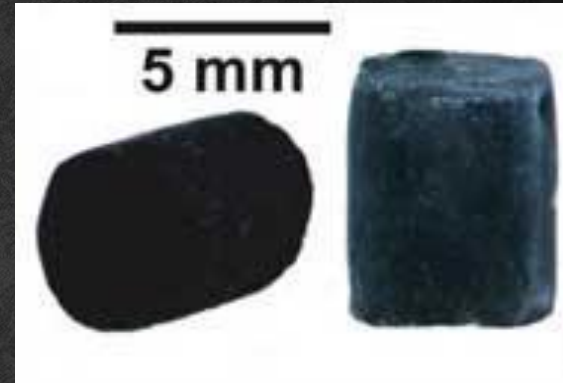
- » High manufacturing cost
- » Poor mechanical strength and associated health hazard



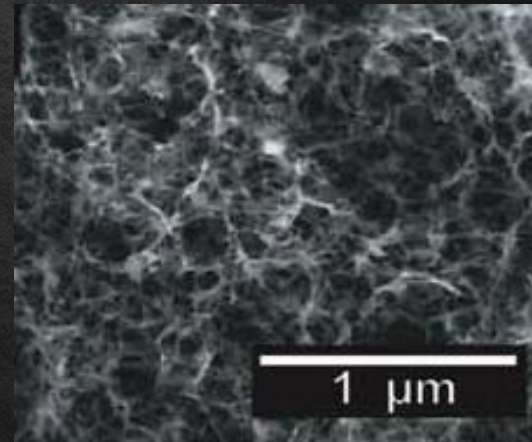
# Aerogel structure



2.5 kg brick supported by a 2-gram aerogel plate (NASA)

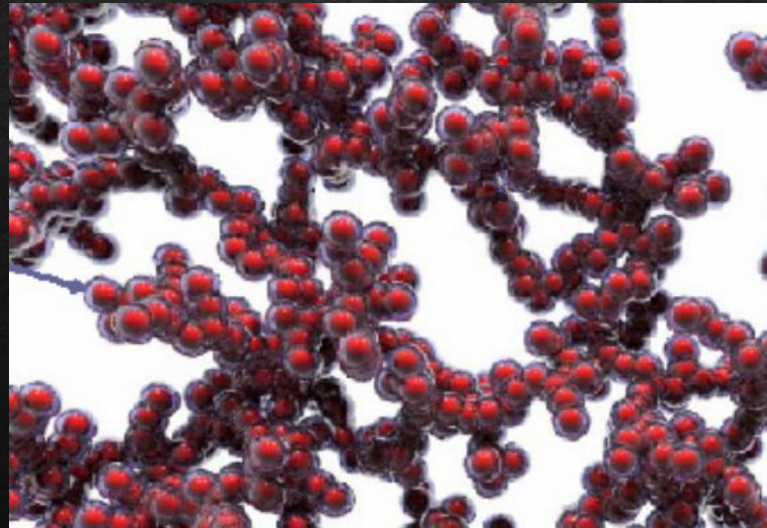
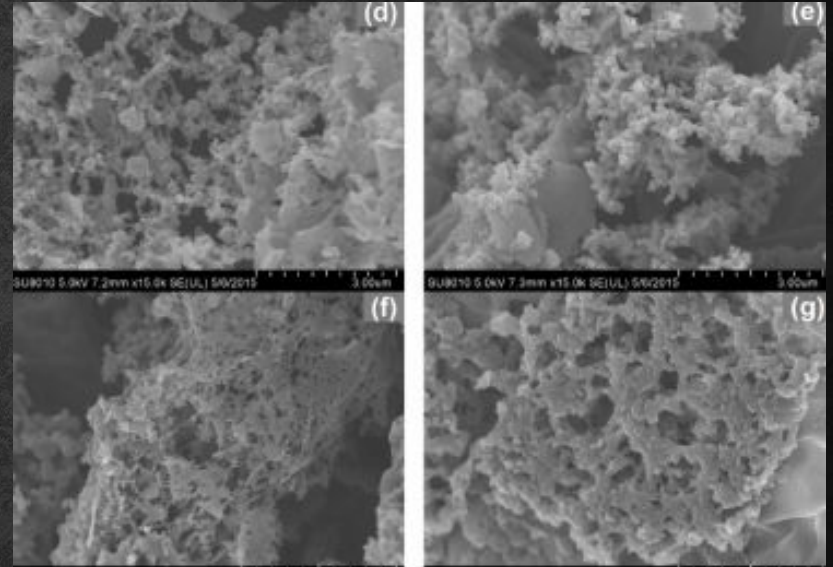


Carbon Nanotube aerogel samples

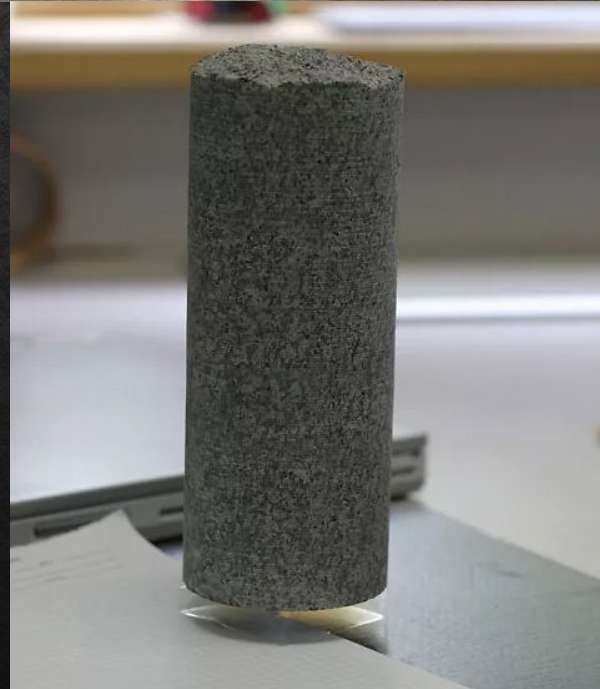
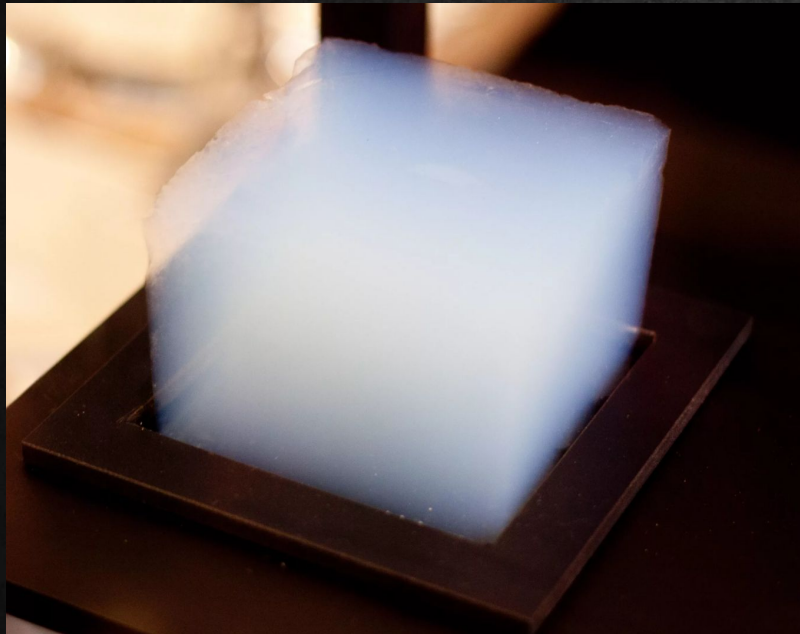


Micrography from a scanning electron microscope. The open porosity of the material is clearly visible.

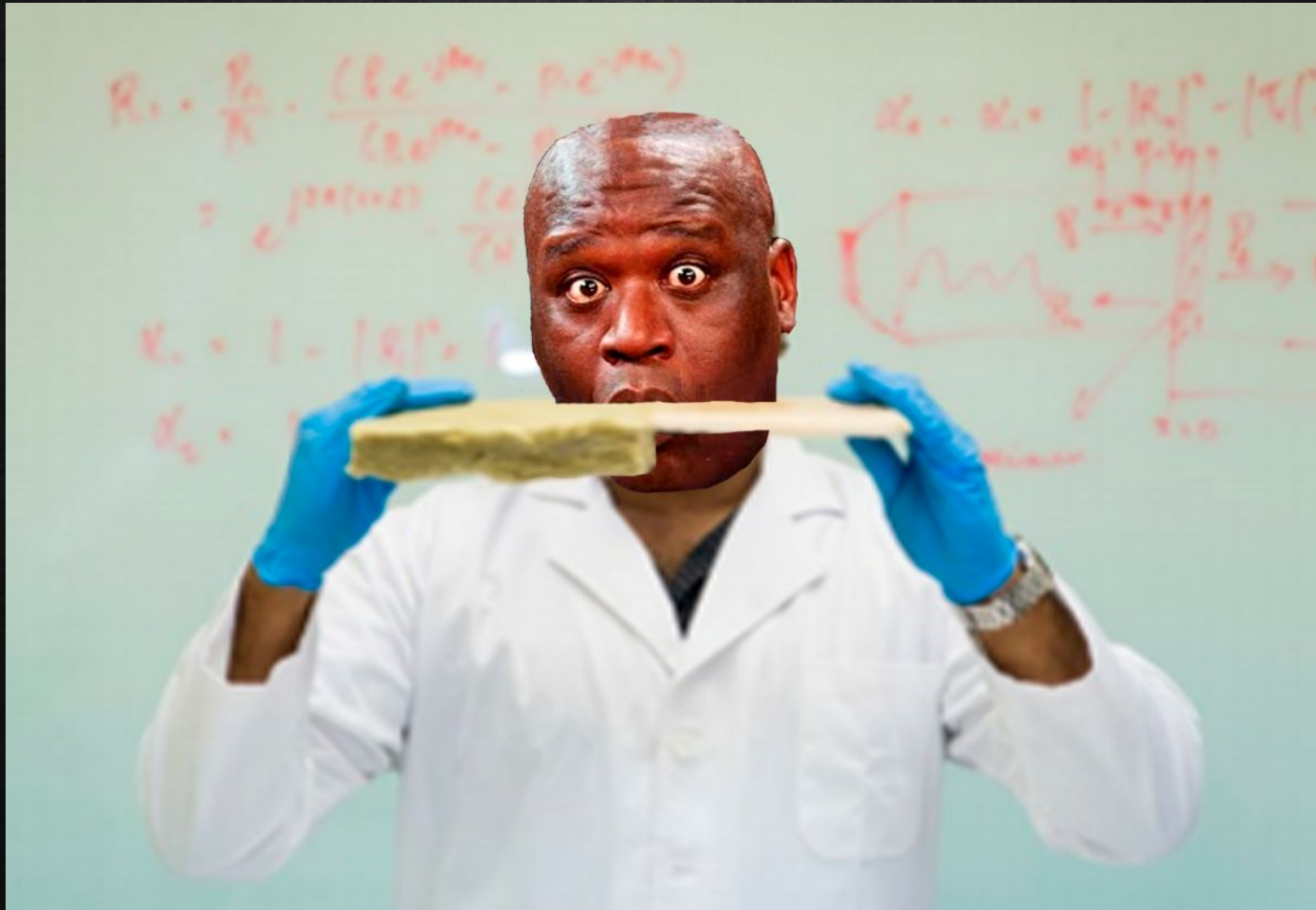
# PROPERTIES OF AEROGELS



# TYPES OF AEROGELS



# MANUFACTURING METHODS



# APPLICATION





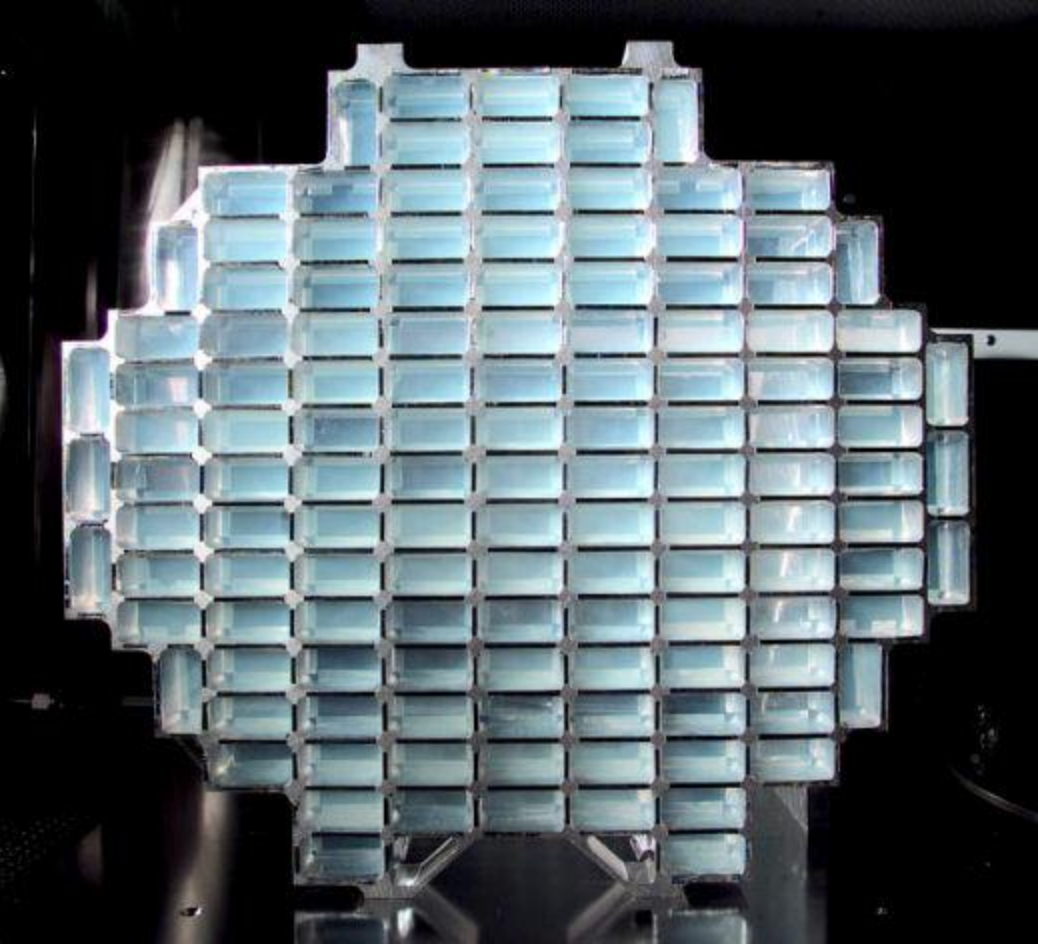


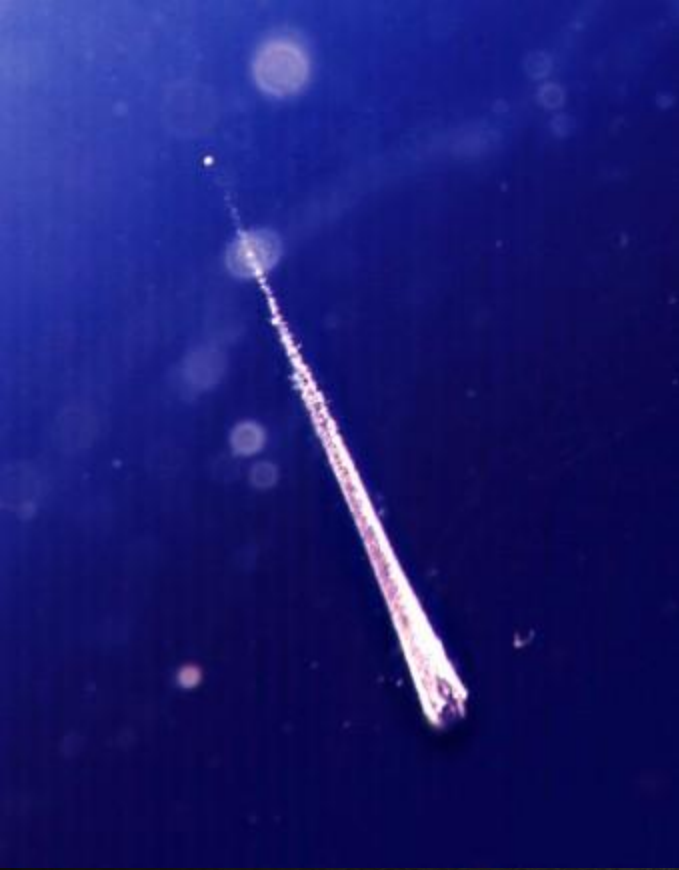
© Rasmus Gullberg AIRGLASS

# the prospects

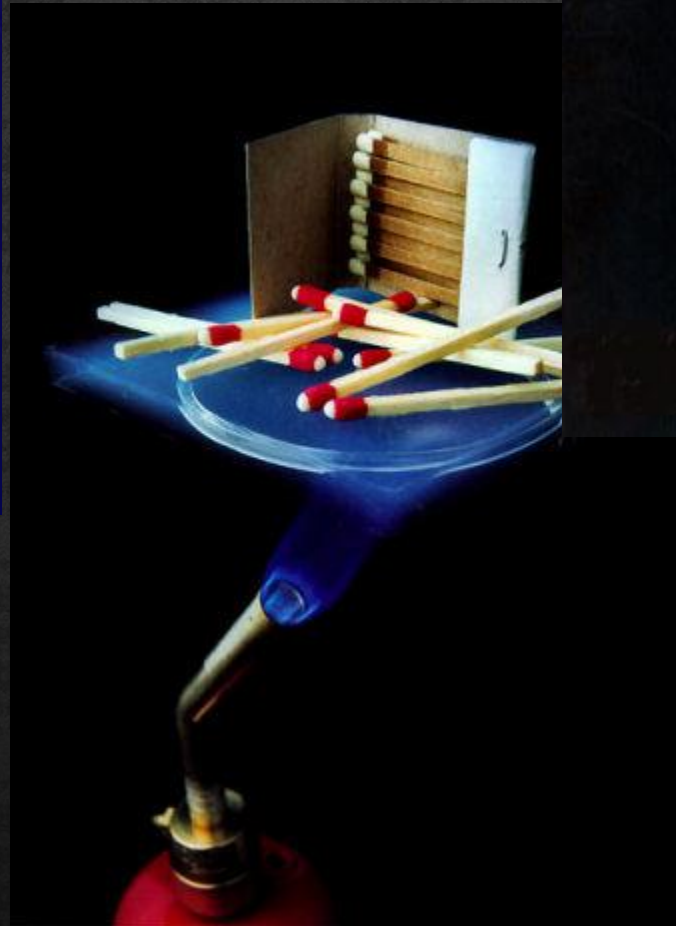
Stardust Probe Comet Matter Trap (NASA)

Glass from "frozen smoke" - Airglass, invented in Sweden





Comet matter particles trapped in the Stardust probe (NASA)



Matches on the aerogel plate and gas burner



A flower on an aerogel plate and a gas burner

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