



## LIGNOSAT: SCIENCE & TECHNOLOGY

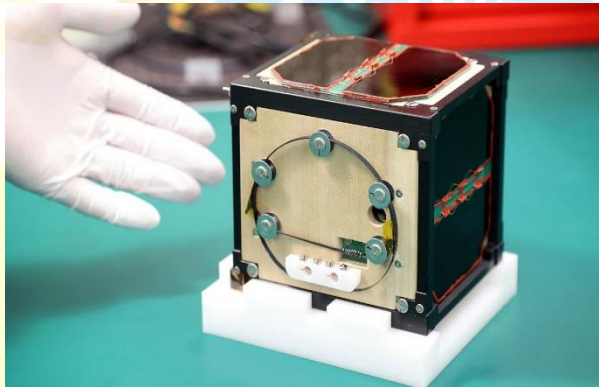
**NEWS:** World's First Wooden Satellite Launched to Test Sustainable Space Materials

### WHAT'S IN THE NEWS?

LignoSat, a compact wooden satellite crafted with sustainable Japanese woodworking, aims to test wood's resilience in space and explore its eco-friendly potential for reducing orbital debris. Its success could pave the way for wood as a material in future space habitats.

### Compact and Sustainable Design:

- LignoSat is a small, 10 cm cube-shaped satellite weighing just 900 grams. It is uniquely crafted from magnolia wood, assembled using traditional Japanese woodworking



techniques without any screws or adhesives, emphasizing sustainability and a reduced environmental footprint.

### Testing Wood's Space Resilience:

- LignoSat's six-month mission in orbit aims to test wood's resistance to extreme space conditions, such as intense temperature fluctuations, radiation, and microgravity. Researchers are exploring wood as a material for space applications, as it lacks the water and oxygen that typically degrade wood on Earth. Wood's previous aerospace use includes early aircraft and modern cork-based spacecraft heat shields.

### Environmental Benefits:

- Unlike traditional satellites made with metals like aluminum, which can emit harmful gases upon reentry and potentially harm Earth's ozone layer, a wooden satellite like LignoSat would burn up completely, releasing minimal pollutants. This characteristic offers a sustainable alternative that could reduce space debris and environmental impact.

### Future Space Applications:

- By testing wood in space, LignoSat may pave the way for using wood in future space habitats, including structures on the Moon and Mars. This aligns with goals to create



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sustainable space infrastructure, leveraging wood's renewable and eco-friendly properties to support long-term living beyond Earth.

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