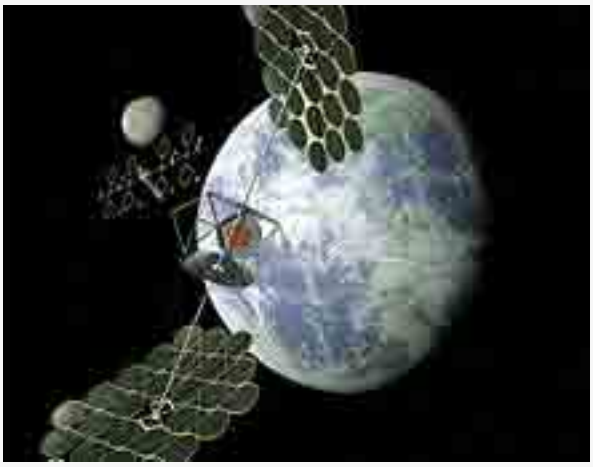
Space Based Material Fabrication for Ultra Pure Wafers and Crystal

The next frontier in semiconductor chip fabrication is space based.


Computer chip fabrication in low earth orbit

SOUTH BOSTON, MA, UNITED STATES, May 5, 2021 /EINPresswire.com/ -- Space-based manufacturing can be considered the next step for the fabrication of semiconductor chips.

UniversityWafer, Inc. with our partners are working on providing researchers with a vehicle that allows not only testing theories but actual production in the low orbit of space.

Below is just some of the services that will be provided.

- CVD with a range of precursor gases
- supporting continuous growth campaigns of up to 6 months
- supporting a range of growth temperatures up to 800C

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>
> *Christian Baker*

Composite semiconductor materials including Gallium Nitride (GaN), Silicon Carbide (SiC) or even more exotic materials are possible are possible to grow in space

Why space-based fabrication? Simple, it's about gravity. Without gravity novel methods of fabrication is possible.

The space platform will be capable of Chemical Vapor Deposition as it orbits around the earth. No gravity is promised to enhance wafer purity and crystals.

There has been some skepticism as to the efficacy of such an endeavor. Our response is, "that's fine!"

We are well aware of the experiments that were done on Spacelab and the Wake Shield Facility.

For conventional silicon wafer production, we would agree there is little demonstrated advantage, both in terms of quality and relative cost. However, for compound and other exotic semiconductors there is a demonstrated advantage for free flyers. UniversityWafer, Inc's partners will use a dedicated facility just for crystal growth, not attached to ISS or any other vehicle, both in terms of reduced convection and ambient contamination.

UniversityWafer, Inc. role is to provide a free flying space platform to fabricate semiconductor materials service to our research clientele in both the academic and corporate world.

What exactly is a "free flying space platform? It means we are not attached to any existing space infrastructure like ISS, so we can find the correct orbit or inclination. Also, having our own platform frees us from ISS regulations.

The focus is not on R&D, but on finding scalable things that need manufactured in orbit, with our first example being superior semiconductor wafers, and we intend to scale our capabilities and production to where we're running multiple missions per month.
UniversityWafer, Inc. and our partners will function as a manufacturing company to operate these satellites, as well as experimenting with new super materials that can currently only be made in orbit.

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