

# ACCELERATING R&D IN THE CLOUD

## MATERIALS LEADER ACCELERATES R&D WITH CLOUD BURSTING FROM ALTAIR

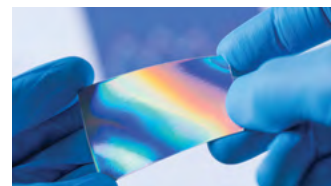
### About the Customer

Innovative materials are everywhere. They're in everyday products we take for granted like smartphones, office supplies, and food packaging. They're also in critical components that enable jets to fly safely and spacecraft to break free from the earth's atmosphere — and return without burning up. Materials designers and developers are constantly working to improve existing materials and create new ones that will allow us to interact with our world and explore in ways that weren't possible before. Being first counts in the race to materials innovation.



We enable our scientists by taking the models they're building and helping them understand the parameter space, choosing parameters that make sense, and getting them up and running in the cloud. They can submit their jobs with PBS Works, and it's a win for everyone.

Cloud HPC engineer,  
corporate research laboratory



### Their Challenge

We worked with a leading materials designer and manufacturer to help its team stay ahead in a competitive market. Because they can't afford to miss being first to market with a new product, **speeding up innovation was key**. Cloud isn't new to the company — they've been exploring cloud-based modeling and simulation for years — but only recently has it become feasible to conduct large-scale research and development in a cloud environment, efficiently and securely. Because it can be tough to determine total cost of ownership (TCO) when evaluating cloud vs. on-premises resources, they looked at opportunity costs. Cloud can be expensive for sustained workloads, but that cost can be more than offset by the **revenue advantage of accelerated product delivery**.

### Our Solution

Altair experts set them up with the Altair PBS Works™ suite, including Altair Control™ for cloud bursting. Their scientists have been using Altair tools for decades and didn't want to learn something new; they just wanted to submit their jobs. What PBS Works and Control gave them was a rapid on-ramp to run jobs in the cloud without having to be cloud experts. Control was up and running quickly, and **researchers were soon connecting to their own Azure and AWS accounts to begin running modeling and simulation in the cloud**. That's enabling them to stay at the technological leading edge, expand the reach of their HPC resources, and ultimately accelerate the entire design and development process. The company's approach is that either the whole workflow is local or the whole workflow is in the cloud, avoiding the need to move a lot of data around. Altair Control enabled them to put compute resources where and when they need them.

### Results

This materials leader was an early cloud adopter, and **investing in cloud technology has allowed its scientists to be more productive and get products to market faster**. Simulation and modeling is becoming an early-phase standard at the company. Now the team is tasked with finding the best path forward for materials invention, ideation, and development both within and outside the cloud. With its huge breadth of modeling and simulation workloads, right-sizing compute resources will have a major impact on the company's future materials innovation — and enable it to stay ahead of the competition.

Materials make up our world, and the scientists and engineers who design them need technology that enables innovation.