



# Tokyo Institute of Technology Wins Gordon Bell Prize With NVIDIA GPU-Accelerated Supercomputer

## 'Nobel Prize of Supercomputing' Awarded for Breakthrough Performance in the Search for New Metal Materials

SANTA CLARA, CA -- NVIDIA today announced that the Tokyo Institute of Technology's Global Scientific Information Computing Center (GSIC) has received the coveted [Gordon Bell Prize](#), the supercomputing industry's highest honor, with its NVIDIA® Tesla™ [GPU-accelerated supercomputer](#).

The Gordon Bell Prize, awarded by the [Association for Computing Machinery](#) in conjunction with the [Institute of Electrical and Electronics Engineers](#), recognizes achievements by researchers utilizing [parallel computing](#) to achieve scientific breakthroughs. Takayuki Aoki's research group at the GSIC won the Gordon Bell "Special Achievement in Scalability and Time-to Solution" award for its work on the Tsubame 2.0 supercomputer.

The Tokyo Tech research team was recognized for achieving 2.0 [petaflops](#) of performance on a practical research application in single precision. The application, which is designed to simulate the behavior of metal alloy microstructures called dendrites, enables researchers to identify lighter, stronger metal materials necessary for the development of more fuel-efficient automobiles. Previous attempts to simulate these complex dendrite microstructures have been limited by the available performance of even the largest supercomputers.<sup>1</sup>

"This kind of breakthrough performance and research is precisely why we decided to accelerate Tsubame 2.0 with NVIDIA Tesla GPUs," said Takayuki Aoki, professor of the Tokyo Institute of Technology. "This is one of many research projects we are working on that take advantage of the performance and energy-efficiency of GPUs."

The Gordon Bell Prize carries a \$10,000 award provided by [Gordon Bell](#), a pioneer in high performance and parallel computing.

Tesla GPUs are massively parallel accelerators based on the NVIDIA CUDA® parallel computing architecture. Application developers can accelerate their applications either by using CUDA C, CUDA C++, CUDA Fortran, or by using the simple, easy-to-use directive-based compilers.

For more information about Tsubame 2.0, visit the [Tokyo Institute of Technology, Global Scientific Information and Computing Center web site](#). To learn more about Tesla GPUs, visit the [Tesla web site](#). To learn more about CUDA, visit the [CUDA web site](#).

<sup>1</sup> Peta-scale Phase-Field Simulation for Dendritic Solidification on the TSUBAME 2.0 Supercomputer

### About NVIDIA

[NVIDIA](#) (NASDAQ: NVDA) awakened the world to computer graphics when it invented the [GPU](#) in 1999. Today, its [processors](#) power a broad range of products from [smart phones](#) to [supercomputers](#). NVIDIA's [mobile processors](#) are used in [cell phones](#), [tablets](#) and [auto infotainment systems](#). [PC gamers](#) rely on GPUs to enjoy spectacularly immersive worlds. Professionals use them to create visual effects in movies and design everything from golf clubs to jumbo jets. And researchers utilize GPUs to advance the frontiers of science with [high-performance computing](#). The company holds more than 2,100 patents worldwide, including ones covering ideas essential to modern computing. For more information, see [www.nvidia.com](#).

### Tags / Keywords:

NVIDIA, CUDA, Tesla, SC11, GPU, GPU computing, Gordon Bell, Tokyo Institute of Technology, Tsubame, supercomputing, parallel computing, GPGPU, high performance computing, HPC, programmer, directives, compiler, developers, research, scientific computing

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Form 10-Q for the fiscal period ended July 31, 2011. Copies of reports filed with the SEC are posted on the company's website and are available from NVIDIA without charge. These forward-looking statements are not guarantees of future performance and speak only as of the date hereof, and, except as required by law, NVIDIA disclaims any obligation to update these forward-looking statements to reflect future events or circumstances.

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