Ceremony Celebrates Opening Of America's First Multi-User Silicon Carbide Fab

On November 14, in a landmark moment for U.S. semiconductor innovation, University of Arkansas (UA) chancellor Charles Robinson joined industry leaders and U.S. Representative Steve Womack, Arkansas State attorney general Tim Griffin, dean of the College of Engineering Kim Needy, and UA Power Group's founding director H. Alan Mantooth to unveil MUSiC—the nation's first multi-user silicon carbide (SiC) fabrication facility, located in Fayetteville, Arkansas.

The official opening of the UA Power Group's MUSiC Fab (Multi-User Silicon Carbide Facility) marked a major milestone in Arkansas' emergence as a center of excellence in semiconductor and power electronics technology. The state's leadership in silicon carbide—a critical strategic material for next-generation energy, transportation, data centers, and aerospace systems—positions Arkansas at the forefront of America's drive for technology sovereignty.

*UA Power Group's founding director H. Alan Mantooth cuts the ribbon for the MUSiC fab.**

"MUSiC is a powerful example of our land-grant mission in action," said chancellor Charles Robinson. "Our responsibility has always been to turn knowledge into progress, and MUSiC does exactly that. This facility will give students hands-on experiences that prepare them for success in a high-tech workforce while helping our researchers push the boundaries of what's possible in materials science and semiconductor technology. In doing so, it will strengthen Arkansas' economy, improve lives across the nation and help safeguard America's long-term security and prosperity."

"The technology that will emerge from the MUSiC fab is foundational to our economic strength and national security," said Rep. Steve Womack. "The University of Arkansas will serve as ground zero for this important work, developing scalable technologies that will bolster our ability to compete in the global marketplace. I have been a proud supporter of this fab from day one because I understand how it will help us address the challenges that stifle domestic innovation while also attracting top talent to our state. I look forward to seeing the real-world impact MUSiC will make, not only here in Arkansas but across the nation and the world," Womack said.

"Arkansas is staking its claim as America's next center of excellence for semiconductor manufacturing," Griffin said. "With MUSiC and the University of Arkansas leading the charge, our state is building the foundation for a new generation of innovation, chip production, and opportunity. This investment brings with it the promise of a brighter future, one in which our children will grow up knowing they have a chance to succeed in this rapidly growing industry. Together, we can transform Arkansas into a national powerhouse for semiconductor manufacturing and good-paying jobs."

Kim Needy, dean of UA's College of Engineering (left) and Charles Robinson, UA chancellor (right) speak at the MUSiC ceremony.

Funded in part by the National Science Foundation's Mid-Scale Research Infrastructure Program, with support from ARL/ARO and X-FAB, the MUSiC fab provides a unique open-access, multi-project wafer (MPW) model enabling collaborative prototyping and research across academia, government, and industry.

The facility features a state-of-the-art eight-bay cleanroom, expandable to 10 bays in Phase 2, within a 22,000-square-foot building—one of the most advanced SiC research and prototyping environments in the nation.

The fab's process flow is compatible with commercial X-FAB standards, bridging academic innovation with scalable manufacturing capability. This national facility supports end-to-end SiC device development, from epitaxy and fabrication to packaging and systems-level integration. It complements the UA Power Group's vertically integrated research ecosystem—known for advancing technologies "from materials to systems."

"MUSiC reflects the University of Arkansas' deep commitment to advancing national research leadership while driving economic development for our state and nation," noted Alan Mantooth, distinguished professor and executive director of the UA Power Group. "It illustrates how our university transforms bold ideas into technologies that power industries, create better paying jobs, and strengthens our nation's leadership in an industry of national importance. With this facility, we're not only expanding our research capacity but positioning Arkansas as a key player in America's semiconductor future."

Industry And Academic Collaboration

Alumni from semiconductor powerhouses including Wolfspeed, GlobalFoundries, onsemi, Microchip, ST Microelectronics, Texas Instruments and others joined university officials and students to celebrate the opening, touring what many called "the most advanced SiC fab in the country."

Together with the High-Density Electronics Center (HiDEC) and National Center for Reliable Electric Power Transmission (NCREPT), the MUSiC fab anchors one of the nation's largest academic clusters in power and energy research. This tri-center model enables rapid innovation across materials science, advanced packaging, integrated circuit design, and power electronics, creating a truly multi-disciplinary national hub for silicon carbide and energy systems research.

"From lab to fab, MUSiC provides a clear on-ramp," said Tom Johnston, senior X-FAB Texas manager and chairman of the MUSiC External Advisory Board. "It's alignment with industry standards and X-FAB's manufacturing capability helps convert prototypes into qualified, high-reliability silicon carbide devices—quickly. By standardizing interfaces and providing foundry-ready design enablement, MUSiC helps our teams move from tape-out to ramp with fewer surprises. That's real value in the race to bring SiC solutions to market."

"This facility represents more than a building—it's the foundation for America's next generation of energy and mobility technologies," added Mantooth. "Our vertically integrated research—from materials to systems—allows us to train students, serve industry, and innovate at every level of the power electronics ecosystem."

Alan Mantooth shows alumni and press the MUSiC fab.

Expanding National Capability And Economic Impact

Arkansas now houses one of the largest academic power electronics programs in the United States, with:

- Over $31 million in annual research expenditures
- $150 million in core facilities, and
- 24 faculty members across five departments—the largest such team in the nation.

The MUSiC fab builds upon this foundation to strengthen U.S. leadership in SiC power electronics, directly supporting energy independence, defense readiness, and industrial competitiveness. It also signals the university's growing partnership with federal agencies and leading semiconductor companies in driving next-generation energy, automotive, aerospace, and defense technologies.

Building The Workforce Of The Future

The MUSiC fab will also serve as a hands-on training ground for UA students and visiting researchers nationwide. By integrating fabrication, design, and systems testing, it creates a rare educational pipeline preparing graduates for careers and research in power electronics, energy, and semiconductors.

The facility's open-access model welcomes academic, government, and private-sector collaborators, offering unique opportunities for prototyping, small-volume production, and custom process development—all designed to accelerate innovation and workforce readiness.

"MUSiC solidifies the University of Arkansas as a leading national training ground for semiconductor engineers and researchers," said Kim Needy, dean of the College of Engineering. "By providing our students and faculty with direct access to advanced fabrication, packaging, and testing environments, we are preparing the workforce that will lead America's semiconductor renaissance. This facility embodies our mission to educate, innovate, and collaborate at the highest levels—right here in Arkansas."

"MUSiC will give students from Arkansas and across the U.S. access to world-class SiC fabrication capabilities," Mantooth said. "That exposure will advance their skills, empower research excellence, and feed directly into the nation's energy and transportation industries."

Beyond its technical mission, MUSiC is dedicated to cultivating the semiconductor and AI workforce of tomorrow. Designed to welcome both new and transitioning workers into one of the world's fastest-growing industries, this initiative builds a foundation for future-ready skills in semiconductor fabrication, materials engineering, and systems integration.

"MUSiC can help create clear pathways for building an AI and semiconductor workforce," said Ardy Sidhwa, senior advisor to Hill and Kincaid's Excellence in Semiconductors Initiative and an active alum of the University of Arkansas. "By merging hands-on training with cutting-edge research and real-world industrial collaboration, MUSiC is redefining how the next generation of engineers, scientists, and technologists will power the global SiC revolution and the AI-driven economy ahead."

About The UA Power Group

The University of Arkansas Power Group (UAPG) represents one of the nation's most comprehensive academic programs in advanced power electronics, integrating three national centers of excellence—GRAPES, POETS, and CITES—and over $150 million in core research facilities. With 24 faculty across five departments and $31 million in annual research expenditures, the Power Group leads nationally in energy systems, electrified transportation, and high-power electronics innovation. Its vertical integration from materials to systems, extensive industry partnerships, and award-winning research have earned UA recognition as a national leader in power and energy technology innovation. For more information, see the UA Power Group website.

**Photos courtesy of Hill + Kincaid*