

# AAAS Elects Qing-Chang Zhong, Syndem Founder & CEO, as Fellow for Foundational Contributions to Resilient Power Systems

*Recognition highlights SYNDEM architecture and Virtual Synchronous Machines (VSM) as foundational for stable, scalable, and resilient power systems.*

CHICAGO, IL, UNITED STATES, March 26, 2026 /EINPresswire.com/ -- Syndem LLC, a pioneer in renewable energy and smart grid, proudly announces that its Founder & CEO, Dr. Qing-Chang Zhong, has been elected a Fellow of the [American Association for the Advancement of Science \(AAAS\)](#), one of the world's largest general scientific societies and the publisher of the journal Science.

A tradition dating back to 1874, election as an AAAS Fellow is one of the world's most prestigious scientific honors, awarded to individuals whose efforts to advance science or its applications are scientifically or socially significant. Among the 449 scientists and engineers elected in 2025, only 36 (including Dr. Zhong) are from Engineering.

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SYNDEM, Your Energy Freedom.”

*Dr. Qing-Chang Zhong,  
Syndem Founder & CEO*

Dr. Zhong is being recognized “for inventing the Synchronized-and-Democratized (SYNDEM) architecture by merging synchronization principles in natural sciences and democracy concepts in social sciences, and for pioneering Virtual Synchronous Machines (VSM) technologies to revolutionize power systems.”

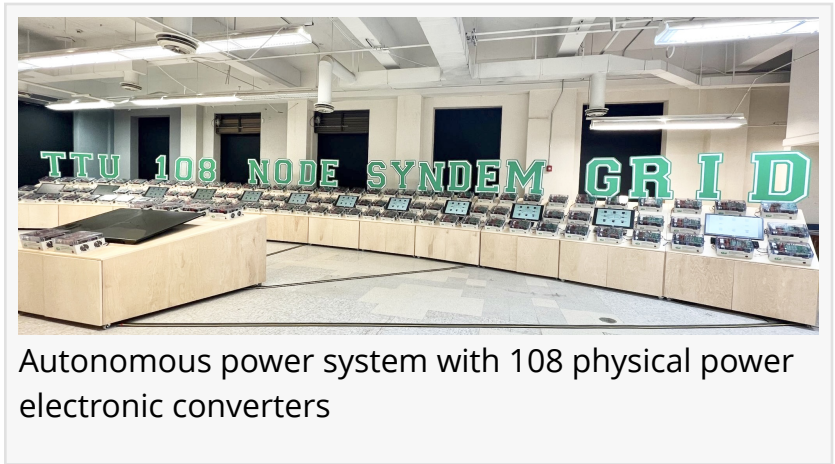


Dr. Zhong Elected an AAAS Fellow



Notably, this work uniquely bridges natural and social sciences by integrating synchronization principles with concepts of democracy to form a new paradigm for power systems.

This honor is not only a recognition of Dr. Zhong's groundbreaking scientific work but also a testament to the role of science in addressing a central challenge in the global transition to a sustainable energy future.



Autonomous power system with 108 physical power electronic converters

### A New Paradigm for Power Systems

Dr. Zhong's work addresses one of the most critical challenges of the 21st century: ensuring the stability, scalability, and resilience of power systems in an era of rapidly growing distributed energy resources and data centers supporting artificial intelligence.

He is the inventor of the Synchronized-and-Democratized (SYNDEM) architecture, a groundbreaking framework that unifies synchronization mechanisms observed in natural systems with principles of democratized interaction inspired by social systems. In this paradigm, power systems are designed so that independent components act autonomously yet inherently synchronize through shared physical laws, enabling decentralized coordination and system-wide stability without relying on centralized control or communication.

Dr. Zhong also pioneered Virtual Synchronous Machines (VSM) technologies, which allow power electronic converters to behave like synchronous machines. His foundational work on synchronverters (the first-generation VSM), published in IEEE Transactions on Industrial Electronics, is among the top three most cited and influential original contributions in the 44-year history of the Transactions. His 2016 IEEE Power Electronics Magazine cover story on VSM is the Most Popular Technical Article and a Highly-Cited Paper in the magazine's history. His thought leadership on SYNDEM and VSM has also been widely recognized in venues such as IEEE Spectrum.

These technologies have become central to grid-forming inverters, enabling renewable energy integration while maintaining grid stability.

### From Theory to Standardization and Global Impact

Dr. Zhong's innovations have moved beyond theory into real-world deployment and standardization. He led the development of IEEE Std 2988-2024, the first international standard on Virtual Synchronous Machines, collaborating with members from key manufacturers, such as

GE, Siemens, Hitachi, Toshiba-Mitsubishi, ABB, Eaton, Schneider Electric, S&C Electric, SEL, and major utilities, such as North American Electric Reliability Corporation (NERC), ERCOT, Midcontinent Independent System Operator (MISO), Southern California Edison, and National Grid. This provides a unified technical foundation for global industry adoption.

He has been invited to deliver 200+ plenary/keynote/invited talks in 20+ countries, including a semi-plenary talk at the 2017 IFAC World Congress, the world's largest systems & control conference with 3,500+ attendees.

Through Syndem LLC, Dr. Zhong is advancing the commercialization of next-generation VSM technologies, enabling practical deployment of SYNDEM-based power systems.

### A Vision for the Future of Energy

"I am deeply honored to be elected a Fellow of AAAS," said Dr. Zhong. "This recognition affirms the holistic vision of merging synchronization principles in natural sciences with concepts of democracy in social sciences to address a fundamental global challenge in power systems, and of advancing Virtual Synchronous Machines as a foundational pathway toward grid reliability, energy equity, and energy freedom."

"Dr. Zhong's inventions are the sort of breakthrough that helps to push an industry from one era to the next," said Keith Schneider, a veteran correspondent for The New York Times, in Canary Media. "Dr. Zhong's work is [a game changer for the grid](#)."

Read the accessible IEEE Spectrum feature at <https://spectrum.ieee.org/virtual-synchronous-machines>.

For technical details about SYNDEM and VSM, read Dr. Zhong's book [Power Electronics-Enabled Autonomous Power Systems: Next Generation Smart Grids](#) (Wiley-IEEE, 2020).

For workforce development with hands-on skills, see SYNDEM Smart Grid Research and Educational Kits at <http://syndem.com/Products.html>.

### About Syndem LLC

Syndem LLC is leading the global development of next-generation smart grids based on the Synchronized-and-Democratized (SYNDEM) mechanism. By pioneering Virtual Synchronous Machine (VSM) technology and leading the development of IEEE Std 2988-2024, Syndem enables autonomous operation of power systems without relying on communication networks, improving grid stability, reliability, resilience, security, and sustainability. This advances global energy freedom for billions of people with access to low-cost clean electricity. Learn more at [www.syndem.com](http://www.syndem.com).

## About the American Association for the Advancement of Science (AAAS)

The American Association for the Advancement of Science is one of the world's largest general scientific societies and the publisher of the Science journal. Founded in 1848, AAAS serves over 250 affiliated societies and academies of science, and over 10 million members worldwide. Its mission is to advance science, engineering, and innovation for the benefit of all. AAAS fulfills this mission through initiatives in science policy, international cooperation, education, public engagement, and the dissemination of scientific knowledge.

Dr. Qing-Chang Zhong

Syndem LLC

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