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PARKESBURG, PA, UNITED STATES, September 20, 2025 /EINPresswire.com/ -- Inventor Announces Breakthrough Continuation Patent filed for Graphene-Based Interconnects - Introducing a New Era of IC Transistor Chips

Independent inventor Anthony Paul Bellezza, known for his pioneering work in graphene-enabled electronics, has officially filed a new continuation patent application titled “Carbon Metal Interfaces for Electrical Connections, Electronic and Micro-Circuitry.” This breakthrough builds on his established portfolio of U.S. patents and introduces a revolutionary Integrated Circuit (IC) transistor chip architecture designed to transform the future of semiconductor design, energy systems, and high-performance computing.

A Leap Forward in Semiconductor Interconnects
Bellezza’s continuation patent introduces a graphene-carbon fusion interconnect method operating at low temperatures (as low as 200 °C), well below CMOS thermal limits. This enables:
- True metallurgical bonding of device layers
- Ultra-low electrical resistance for faster, more efficient circuits
- Superior thermal performance and ballistic conducting interfaces
- Environmentally safer, copper-free architectures

These fusion interfaces replace traditional solders, which are prone to cracking, oxidation, and failure under high current loads. The process directly integrates graphene into martensitic iron/iron-nickel substrates, forming atomic-level alloy-like bonds that withstand decades of thermal cycling without degradation.

Introducing the IC Transistor Chip using Graphene
At the core of this breakthrough is Bellezza’s new (Fusion-Added Semiconductor Transistor) chip, a graphene-based IC transistor platform using the patented fusion interconnect method.
Key advantages include:
- Substantially lower power demand and low heat generation
- Increased switching speed and density for logic and memory

• Compatibility with 3D integrated circuits and graphene field-effect transistor (GFET) architectures.
• Seamless integration with advanced quantum and edge computing systems

This chip platform could redefine the roadmap beyond traditional copper interconnects, unlocking next-generation performance for leading-edge semiconductor and computing firms.

Bellezza's U.S. Patent Portfolio

This continuation expands on Bellezza's prior issued patents:
https://thermoelectric-graphene.com/pending-applications/carbon-metal-interfaces-for-electrical-connections-electronic-and-micro-circuiry/
US 10,756,248
US 10,096,761
US 10,937,940
US 11,380,833

These patents and pending application collectively form a comprehensive IP foundation for next-generation graphene interconnects, energy devices, and semiconductor manufacturing processes.

Bellezza is now actively seeking licensees, to commercialize his graphene fusion technology and accelerate the development of the fusion transistor chip platform. Interested semiconductor companies, venture investors, and corporate R&D teams are invited to initiate discussions.

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About the inventor

Anthony Paul Bellezza is an independent U.S. inventor specializing in advanced carbon-based interconnects, thermoelectric devices, and semiconductor materials. His work focuses on sustainable, high-performance alternatives to copper-based electronics, and his inventions are positioned to drive the next wave of innovation in computing, energy, and microelectronics.

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