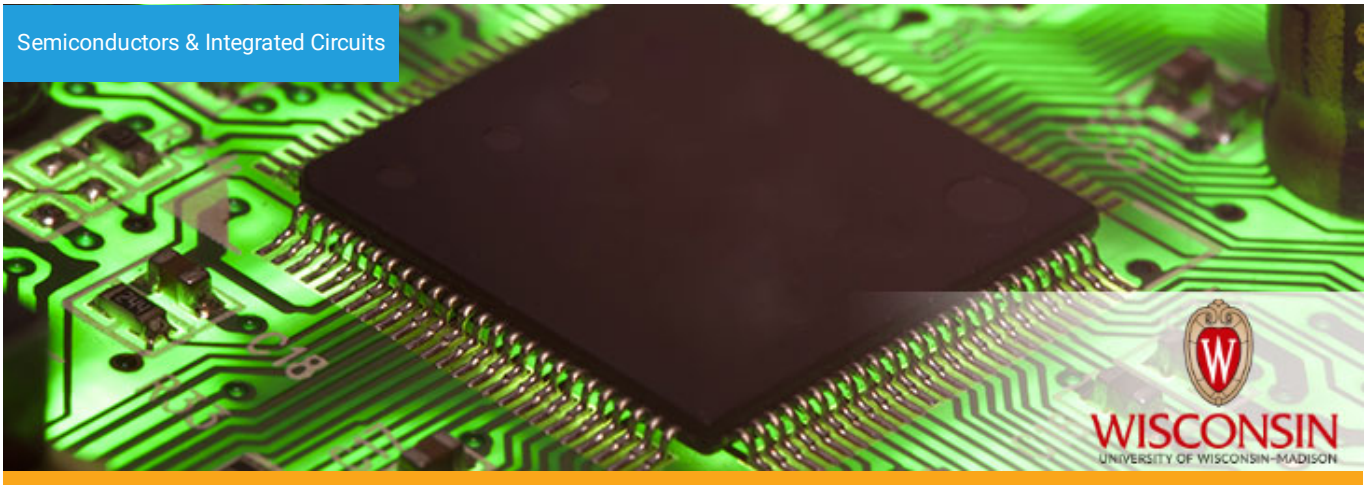

Self-Assembled Helical Slow-Wave Structures For High-Frequency Signals

View U.S. Patent No. 11,201,028 in PDF format.

WARF: P190271US01

Inventors: Max Lagally, Matthew Dwyer, Francesca Cavallo, Daniel van der Weide, Abhishek Bhat

The Invention

Traveling-wave tube amplifiers for high-frequency signals, including terahertz signals, and methods for making a slow-wave structure for the traveling-wave tube amplifiers are provided. The slow-wave structures include helical conductors that are self-assembled via the release and relaxation of strained films from a sacrificial growth substrate.

Additional Information

For More Information About the Inventors

- Max Lagally
- Daniel van der Weide

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- Prakash D. J., Dwyer M. M., Argudo M. A., Debasu M. L., Dibaji H., Lagally M. G., van der Weide D. W. and Cavallo F. 2021. Self-Winding Helices as Slow-Wave Structures for Sub-Millimeter Traveling-Wave Tubes. ACS Nano. 15, 1229-1239.
- Argudo M. A., Prakash D. J., van der Weide D. W. and Cavallo F. 2021. Modeling of Self-Winding Helices for Sub-Millimeter Traveling Wave Tube Amplifiers. UCMMT2021. 978-1-6654-3853-7/21/$31.00 ©2021 IEEE.
- Prakash D. J., Argudo M. A., van der Weide D. W. and Cavallo F. 2021. Design and Fabrication of Self-Assembled Metal Helices for Millimeter-through-THz Traveling Wave Tube Amplifiers. UCMMT2021. 978-1-6654-3853-7/21/$31.00 ©2021 IEEE.

Tech Fields

- Semiconductors & Integrated Circuits : Design & fabrication

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