

Company Snapshot

Business Focus

- Manufactures micro-scale electronics cooling and energy harvesting solutions for telecommunications, semiconductor, consumer, medical, aerospace and government markets.
- Offers sophisticated thermal modeling, design, and engineering services.



History

- RTI International spun-out Nextreme in December 2004 to commercialize thin-film thermoelectric technology.

Intellectual Property

- 30 patents, pending and provisional

Technology

- Nano-engineered thin-film thermoelectrics based on the Peltier effect (cooling) and Seebeck effect (power generation).
- Only commercial thin-film thermoelectric manufacturing facility in the U.S.
- Uses fully scalable semiconductor processes to deliver new functionality at the chip, package, and system levels.

Advantages

- Ultra-thin - 0.65 mm high or less
- Ultra-small - footprints down to 2.9 mm²
- Extremely fast - <2 msec response
- Solid-state - particle free, clean-room manufacturing

Products

- OptoCooler™ Family – microscopic size and high heat pumping capability are particularly well suited for opto-electronics applications.
- Embedded thermoelectric cooler (eTEC™) - a miniature heat pump for rapid cooling and heating. Cools hot spots to improve performance, reliability, yield, and cost of high-performance CMOS ICs, RF components, HB-LEDs and other optoelectronic chips. Performs precision thermal management of temperature sensitive devices, such as photonics ICs, DNA analysis chips, and IC test systems.
- Miniature thin-film thermoelectric generator (eTEG™) - enables recycling of heat to electricity. Ideal for waste heat conversion applications, the solid state eTEG delivers power generation densities (>3 W/cm²) in excess of those achieved using bulk materials and is optimized to provide power in a form factor that can be as much as 20x thinner than bulk material alternatives.

Management Team

- John Goehrke – Chief Executive Officer
- Jim Mundell - Chief Operating Officer
- Dave Koester - VP of Engineering
- Phil Deane - VP of Product Development
- Bob Collins - VP of Business Development
- Karl von Gunten - Director of Marketing

Employees

- 26 employees; experienced start-up team and world-renowned experts in electronics, thermal management and thermal bump technology.

Financial

- Venture-backed; \$14M Series A; \$21M Series B.
- Investors include Chart Venture Partners, ITOCHU Corporation, ITOCHU Technology Ventures, Inc.; RedShift Ventures; Harris & Harris Group, Inc.; In-Q-Tel; and RTI International.

Headquarters Location

- Based just outside Research Triangle Park, North Carolina
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