Niowave, Inc.

Dr. Terry Grimm
President & Senior Scientist

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Outline

NIOWAVE
www.niowaveinc.com

- Superconducting Particle Accelerator Expertise
- Competitive Advantage
- Expansion Plans
- SBIR/STTR Commercialization

Niowave, Inc.

NIOWAVE
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- Privately Owned
- Over 50 employees
- 45,000 square feet
  - Engineering & design
  - Machine shop
  - Fabrication & welding
  - Chemistry/BCP
  - Class 100 Cleanroom
  - Cryo test lab
  - Accelerator test facility

Lansing, Michigan Headquarters

Products for Superconducting Particle Accelerators

NIOWAVE
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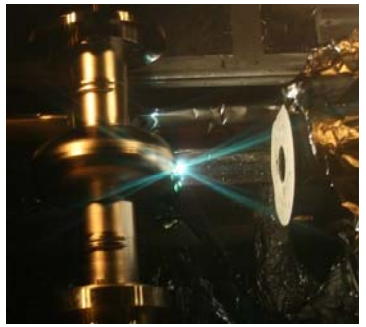
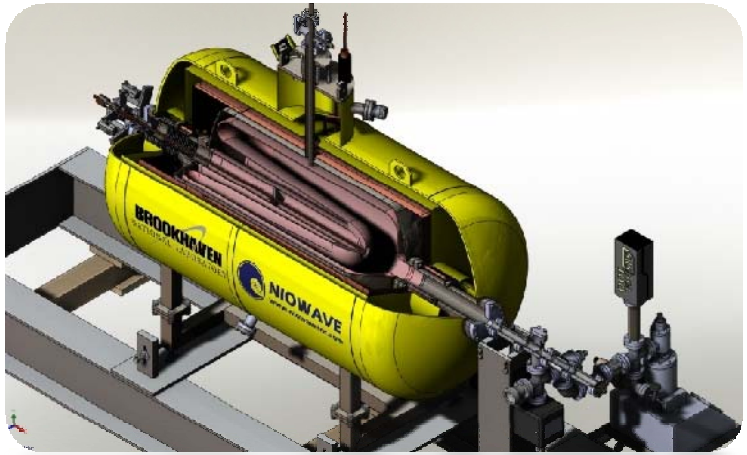
- Niobium (In Stock)



- Niobium Cavities



- Electron Guns & Injectors

- Cryomodules & Turn-key Accelerators

Uses of Superconducting Particle Accelerators

NIOWAVE
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- Large accelerators
  - Existing: JLAB, SNS, LHC
  - Future: FRIB, RHIC, XFEL, ILC & many more
- X-rays
  - Bremsstrahlung, Compton & Synchrotron
- Free electron lasers
  - THz, IR, UV & x-ray
- Radioisotope production

Competitive Advantage

NIOWAVE
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- Only company worldwide capable of building and testing superconducting linear accelerators
  - License from State of Michigan & NRC
- Michigan Manufacturing Heritage
  - Manufacturing expertise & capacity
  - Facility & equipment availability
  - Highly skilled and available workforce
- Mid-Michigan Region
  - MSU Cyclotron Lab (NSCL/FRIB)
  - UMich and MSU partnerships
  - Lansing Community College
  - State capital
- Low cost of doing business

GM

NSCL

FRIB

MICHIGAN STATE UNIVERSITY

UNIVERSITY OF MICHIGAN

Expansion Plans

NIOWAVE
www.niowaveinc.com

- High-tech Research Hub **"Autos to Accelerators"**
  - Capitalize on scientific critical mass at Niowave & MSU
  - Utilize superconducting accelerator facilities
  - Utilize manufacturing capacity and expertise
- Increase staff to >100 by mid-2012
- Additional research building (100,000 SF)
  - Cryomodule assembly area
  - High-power accelerator test facility
  - Expanded manufacturing capabilities

SBIR/STTR Commercialization

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- Low Frequency Electron Gun

  NP SBIR 2007-2010

  – DOD/Navy 500 MHz electron gun
  – UWisconsin 200 MHz electron gun
  – MIT Cubix 176 MHz electron gun
  – HZB/Bessy Superconducting solenoid and gun design
  – BNL 56 MHz quarter wave cavity

- Multi-Spoke Cavities for Electron Linacs

  NP SBIR 2008-2011

  – First spoke for electron linacs
    - Expect to be first group to accelerate beam with a spoke cavity
  – DOD/Navy FEL linac
  – MIT, ODU Compton x-ray sources