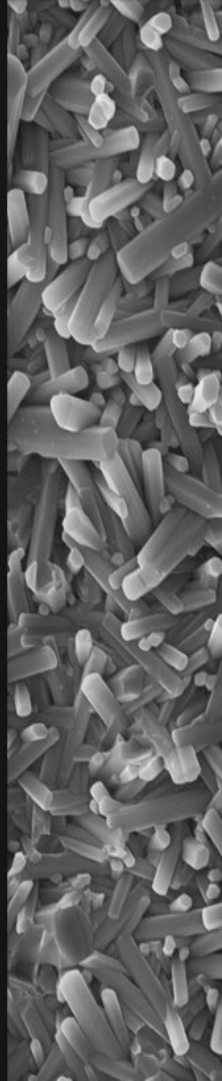




SINTX
Technologies

Corporate Overview

- ▣ September 2020



Disclaimer

Forward-Looking Statements

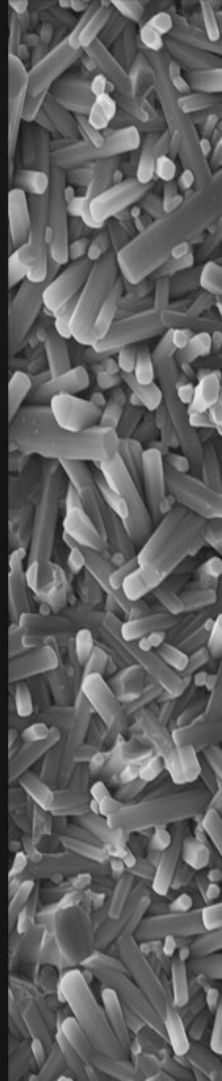
This presentation contains forward-looking statements about SINTX Technologies, Inc. (the “Company”). These forward-looking statements are made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. These forward-looking statements relate to the Company’s financial results, products, product candidates, the expected timing of the regulatory approval of our product candidates, regulatory processes and objectives, potential benefits of the Company’s product candidates, intellectual property and related matters, all of which involve known and unknown risks and uncertainties. Actual results may differ materially from the forward-looking statements discussed in this presentation.

Accordingly, the Company cautions investors not to place undue reliance on the forward-looking statements contained in, or made in connection with, this presentation. The forward-looking statements contained in this presentation are further qualified by the detailed discussion of risks and uncertainties set forth in the Company’s registration statement on Form S-1, as amended, and the documents incorporated by reference therein, all of which can be obtained on the Company’s website at www.sintx.com or on the SEC website at www.sec.gov. The forward-looking statements contained in this document represent the Company’s estimates and assumptions only as of the date of this presentation and the Company undertakes no duty or obligation to update or revise publicly any forward-looking statements contained in this presentation as a result of new information, future events or changes in the Company’s expectations.

Who is SINTX?

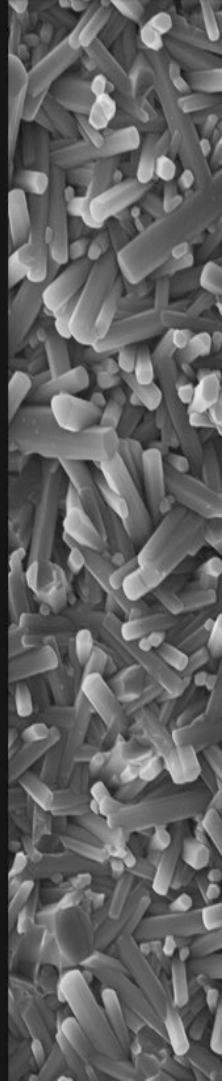
SINTX Technologies (“SINTX”) is a Utah-based advanced materials company focused on silicon nitride, a ceramic material used to make implantable medical devices and industrial components. Spinal implants made from SINTX’s FDA-registered silicon nitride have a proven track history in >35,000 spinal fusion device implantations. SINTX has investigated silicon nitride heavily, with >130 peer-reviewed scientific papers and presentations.

Our R&D has shown that silicon nitride is favorable to human cells and promotes bone fusion. The unique material also discourages bacterial adhesion on its surface; several in vitro studies and animal data attest to this antimicrobial property. New data also shows that SINTX’s silicon nitride inactivates viruses - including the SARS-CoV-2 virus.



Corporate History

- 1996 – Surgeon-Scientist collaboration → “Amedica Corporation”, Salt Lake City
- 1996 to 2005 – Development of ceramic hip system as well as biocompatibility data for spine fusion devices
- 2006 to 2008 – Series of FDA 510(k) clearances for silicon nitride VBR and spinal fusion implant
- 2008 – First silicon nitride spine fusion device implanted; >35,000 since then
- 2009 – Moved into current facility
- 2010 - Acquired US Spine to gain product breadth
- 2014 – IPO of Company; Nasdaq- AMDA (now, SINT)
- 2010 to 2018 – launched multiple new silicon nitride spinal implants – including several devices incorporating porous silicon nitride – and gained regulatory clearances in Europe, Brazil, and Australia
- 2018 – Divested retail spine to CTL-Medical (Dallas based orthopedic device company); re-named the Company “SINTX Technologies, Inc.”
- 2020 – **Discovery that SINTX’s silicon nitride inactivates SARS-CoV-2 – virus which causes COVID-19**
- Today – SINTX is a commercial ceramic company focused on identifying new opportunities for its silicon nitride technology
 - Biomedical
 - Industrial
 - **Antipathogenic**



Experienced Management Team



B. Sonny Bal, MD, JD, MBA, Ph.D

*Chairman of the Board
Chief Executive Officer*

- Orthopedic Surgeon and Attorney
- Ceramic Scientist and Investigator
- CEO since 2014, Board since 2012



Bryan J. McEntire, MBA, Ph.D

Chief Scientific Officer

- 40 years research in advanced ceramics
- Senior roles in ceramics and materials companies



David O'Brien

Chief Operating Officer

- 30 years of operations, manufacturing, and engineering experience with medical devices and ceramics



Donald Bray

Vice President Business Development

- 35 years background and experience in technical ceramics and business development
- Proven track record of securing federal, state, and local funds in support of technology development

SINTX Technologies Vision

Advanced ceramic technology, knowledge, and skills toward customer solutions

Strengths – Our People and our Technology

OEM- Spine Implants

Proven - >35,000 spine implants over 10 years

Largest body of data, including independent 30-year clinical follow-up in Australia

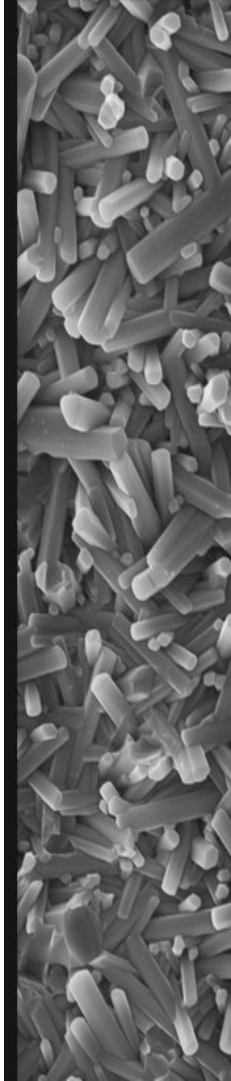
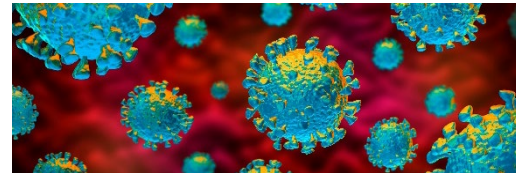
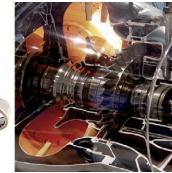
Advanced Ceramics

Develop and commercialize outside spine

Core products + Non-biomedical applications

Antipathogenic Applications

New focus on antibacterial, antiviral, antifungal applications



Why is Silicon Nitride Effective in Spinal Fusion ?

THREE advantages:

- Faster Bone Healing
 - Unique surface nanostructure and chemistry
 - Enhances cell response for faster bone fusion
- Antimicrobial Properties
 - Against bacteria, viruses and fungi
 - A multi-factorial etiology
 - Confirmed independently
- Superior Radiographic Imaging
 - Easy to see on x-ray, CT, and MRI
 - No image distortion



Several clinical studies validate the safety and efficacy of silicon nitride spinal implants – including a multi-center 6-year study of > 1,000 patients, with >2,000 implants

SINTX - leader in Silicon Nitride R&D

Over 130 peer-reviewed scientific publications, conference proceedings, or patent applications, with >85 technical and scientific presentations

Selected Publications in 2019

ACS **APPLIED MATERIALS** & INTERFACES Research Article
Cite This: *ACS Appl. Mater. Interfaces* XXXX, XXX, XXX–XXX www.acsami.org

Silicon Nitride: A Bioceramic with a Gift

Giuseppe Pezzotti*^{†,‡,§,||}

[†]Ceramic Physics Laboratory, Kyoto Institute of Technology

[‡]Department of Orthopedic Surgery, Tokyo Medical and Dental University

[§]The Center for Advanced Medical Engineering, Kyoto Institute of Technology

^{||}Department of Immunology, Graduate School of Medicine, Kyoto University, Kajicho, Kyoto 602-8566, Japan



ELSEVIER

Contents lists available at ScienceDirect

Journal of the Mechanical Behavior of Biomedical Materials

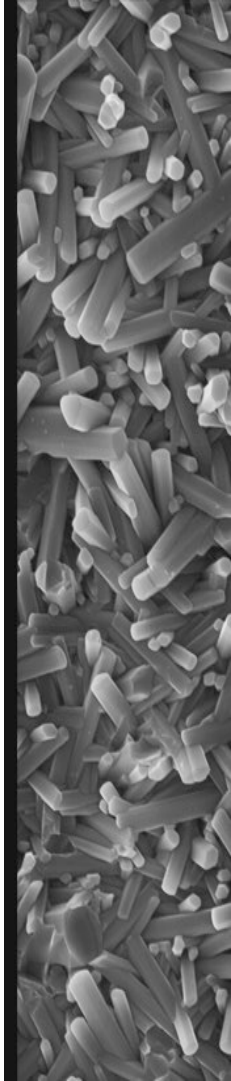
journal homepage: <http://www.elsevier.com/locate/jmbbm>



3D-additive deposition of an antibacterial and osteogenic silicon nitride coating on orthopaedic titanium substrate



Matteo Zanocco^{a,b}, Francesco Boschetto^{a,b}, Wenliang Zhu^a, Elia Marin^{a,c}, Bryan J. McEntire^d, B. Sonny Bal^d, Tetsuya Adachi^c, Toshiro Yamamoto^c, Narisato Kanamura^c, Eriko Ohgihani^b, Kengo Yamamoto^e, Osam Mazda^b, Giuseppe Pezzotti^{a,b,e,f,*}



Strong, Active IP portfolio



63 patents issued

41 patent applications

Note – SINTX presently holds 12 patents and has 38 patent applications on file. CTL Amica purchased 48 US patents, 2 foreign patents, and 3 pending patent applications in 2018 - all specific to spine devices.

Current focus is on the patent applications for the:

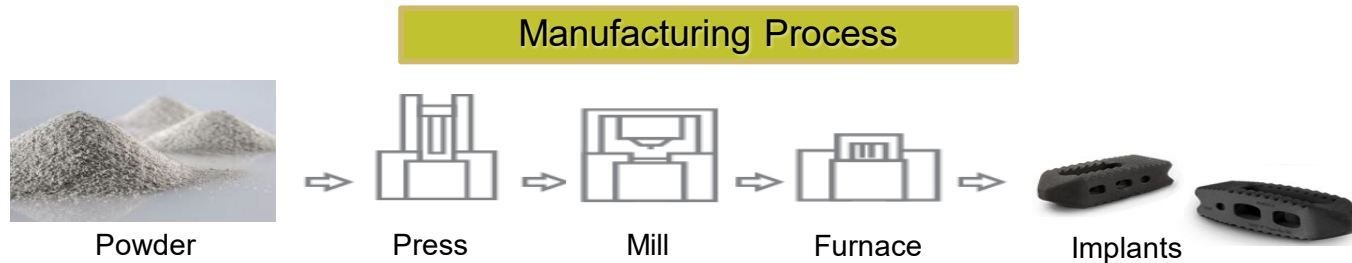
- Anti-Bacterial and Anti-Pathogenic applications for silicon nitride
- Coatings (Surface Functionalization) of silicon nitride

Our Manufacturing Expertise

- 30,000 sq. ft. manufacturing, laboratory, and administrative space in Salt Lake City
 - To our knowledge, only FDA registered & ISO 13485:2016 certified Silicon Nitride (Si_3N_4) medical device manufacturing facility
 - Powders \rightarrow Product; vertically integrated for rapid prototyping and development
 - R&D and Product Development laboratories; collaborators in Japan, U.S. and Europe
- Powder production and green-compact preparation
- **Cost-competitive complex designs and shapes**
- Rigorous quality control process for each implant

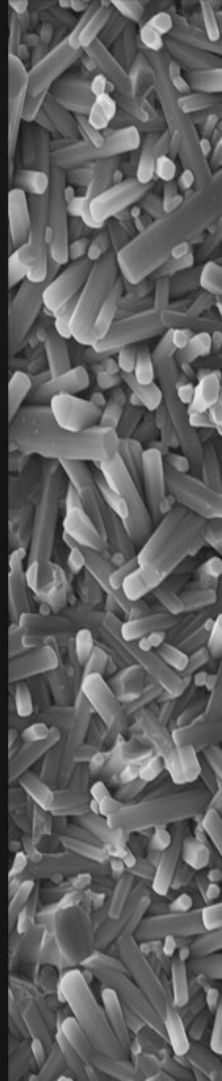


Silicon Nitride



Tight Quality and Biomedical Standards

- SINTX's Quality Management System is:
 - U.S. FDA registered
 - Certified by BSI (The British Standards Institution) to:
 - ISO 13485:2016
 - AS9100 (anticipated October 2020)
 - ANVISA (Brazil's equivalent to the US FDA) registered



Versatile Shapes, Designs, and Compositions



Solid: Nanostructured or Polished

Nanostructured promotes bone growth
Polished applies to orthopaedic bearings



Composite: Solid + CsC

Mimics the structure of bone

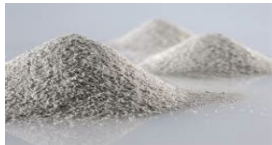
Porous: Cancellous (CsC)

Biologic substitute for bone in-growth



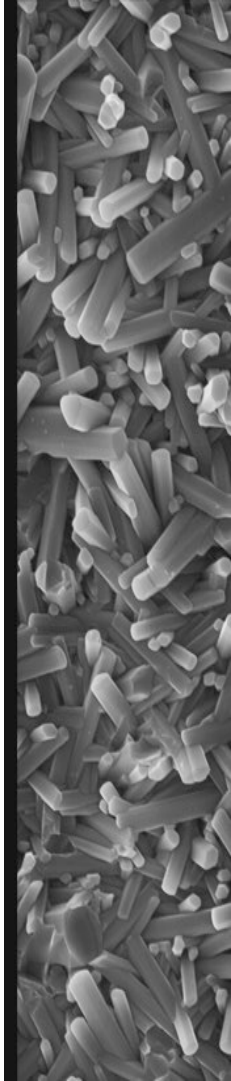
Composite: Polished + CsC

Joint arthroplasty/resurfacing applications



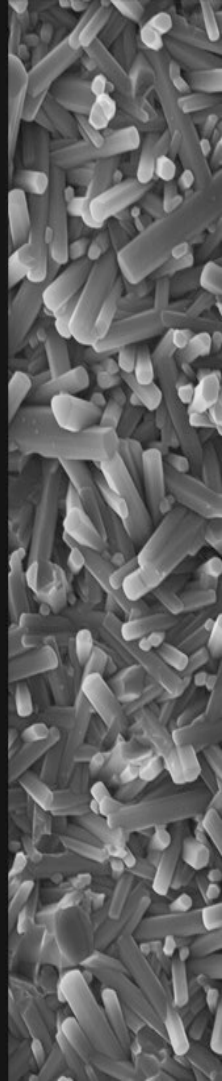
Powder: AP2

AP² (for antipathogenic powder) is a new product ready for integration into polymers, metals, feedstock for coatings, etc. SINTX believes this material will have many applications.

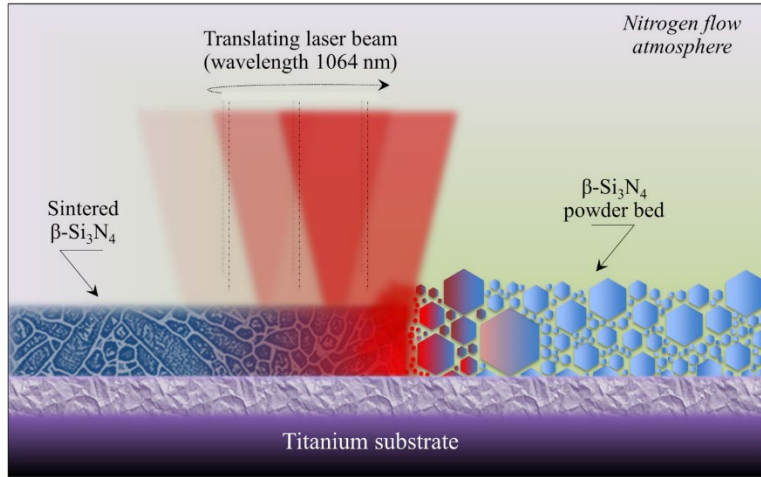


New Technologies Under Development

- Polymer/Silicon Nitride Composites
- Coatings of Silicon Nitride on other materials
- Enhanced Formulations
- Metal-Silicon Nitride Composites (Nitranium[®])
- Brazing of Metals with Silicon Nitride
- Antipathogenic powder

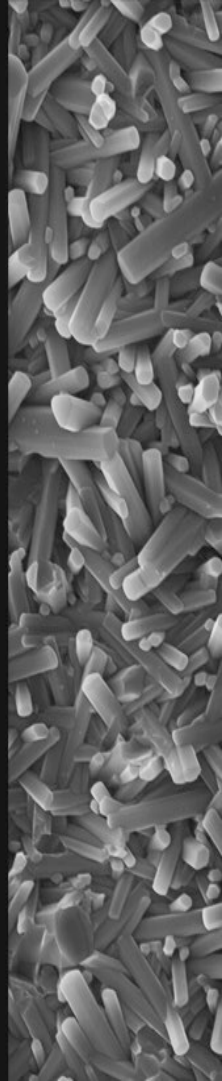
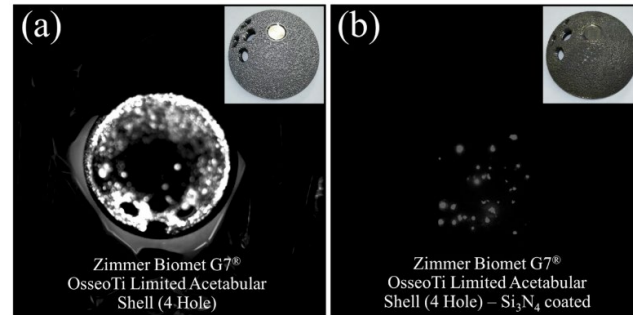
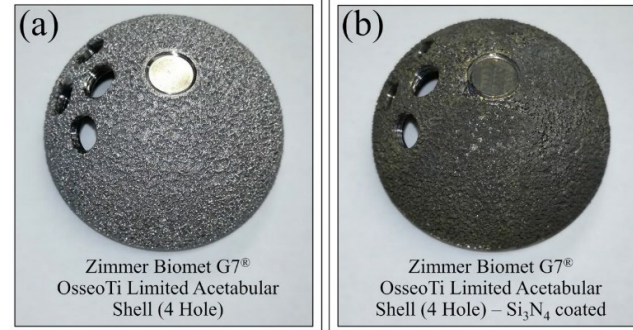


Coatings – Validated Experimentally



Potential applications include acetabular cups, dental implants, and pedicle screws.

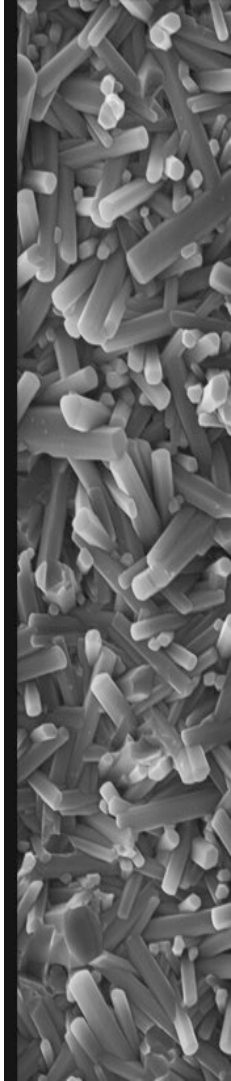
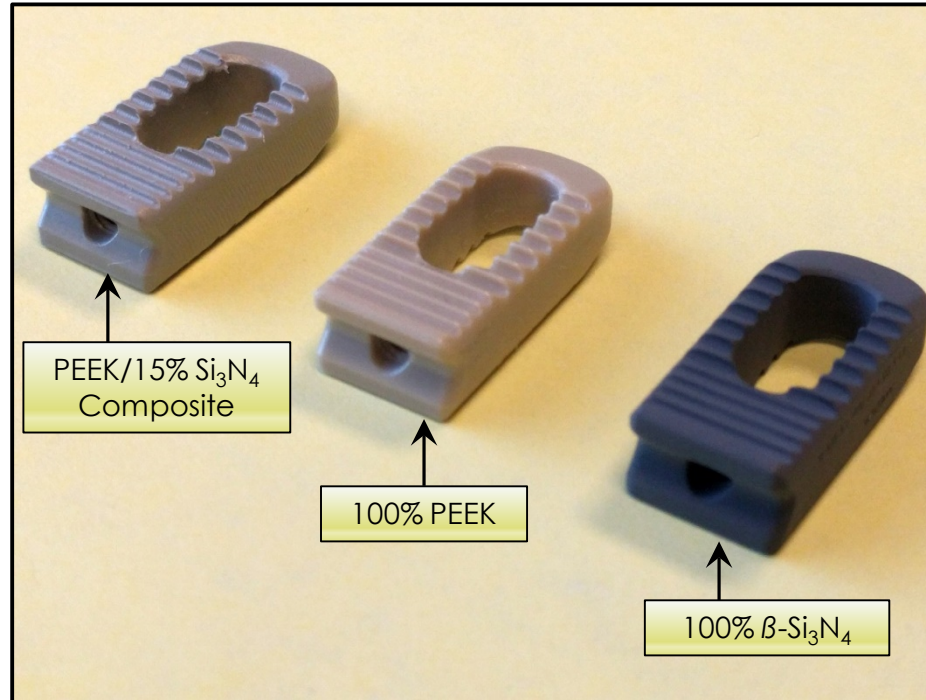
Silicon nitride coating inhibited adhesion of *E. coli* during *in vitro* testing – similar to monolithic silicon nitride.



Technology Under Development

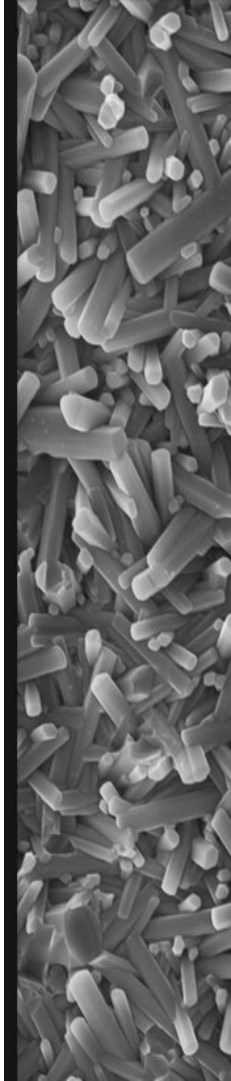
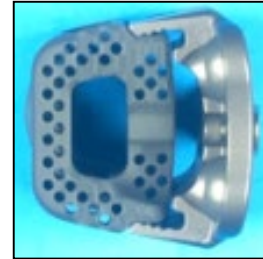
Silicon Nitride – Polyether Ether Ketone (“PEEK”) Composite

- Extruded compound of PEEK and silicon nitride
- Combines familiarity and machinability of PEEK with silicon nitride
- Anti-bacterial and osteogenic properties are mid-way between pure PEEK and pure silicon nitride
- Planning submission for FDA Master File in late 2020



Relationship with CTL Amedica

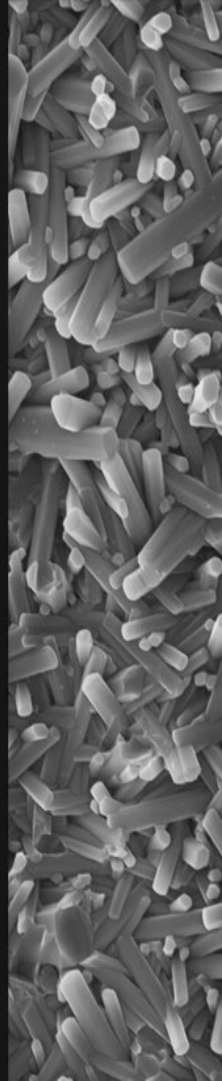
- Steady increase of sales to CTL since October 2018
 - Added manufacturing personnel in 2019 to support demand
- Collaboration to develop new spine products:
 - Porous silicon nitride implants
 - New Technologies e.g. Silicon Nitride/PEEK
- Supporting spine sales and regulatory efforts
 - Sales calls with prospective customers
 - Presentations and conferences in the US, Australia, Mexico and Taiwan
 - Authored multiple clinical review papers



Prospective Catalysts for Growth

Antipathogenic Applications

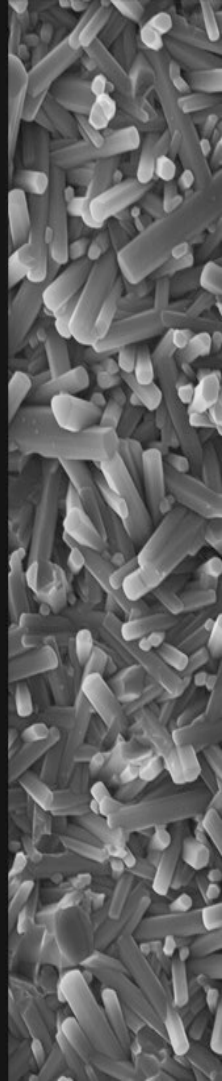
- Since 2012, SINTX's silicon nitride has been proven to kill a wide range of bacteria, fungi, and viruses; this work has been performed by SINTX and by independent researchers
- 2020: SINTX's silicon nitride inactivated the SARS-CoV-2 virus within one minute of exposure; SINTX is conducting additional research in multiple US facilities to confirm these results
- The antipathogenic properties of our material can be leveraged through a wide range of products including masks, filters, and high-use surfaces.
- SINTX has a development agreement in place with Nissin Manufacturing and is creating commercialization agreements with multiple other potential partners
- SINTX's silicon nitride is effective in discouraging grape leaf fungus



Prospective Catalysts for Growth

Medical Devices

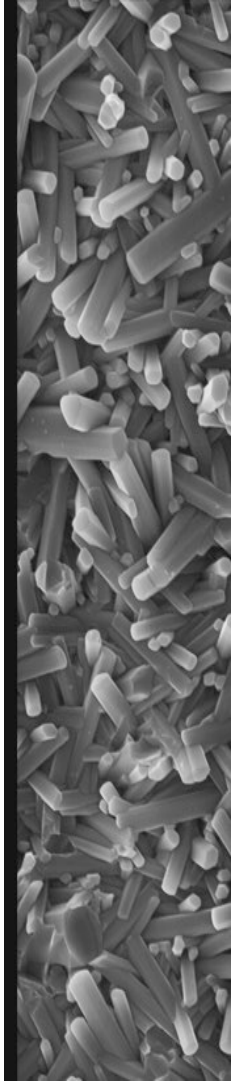
- **Spine**
 - SINTX's technologies can be used in a wide range of spinal devices.
- **Arthroplasty**
 - Material Transfer Agreement (MTA) with global medical device manufacturer to develop silicon nitride coatings of orthopedic implants, and PMMA-silicon nitride composites
- **Dental**
 - Development collaboration with global dental company to produce silicon nitride implants
- **Craniomaxillofacial**
 - \$1.6 million grant application with Texas A&M School of Dentistry – 3-D printed implants – submitted to NIH in April 2020; revision underway based on positive feedback



Prospective Catalysts for Growth

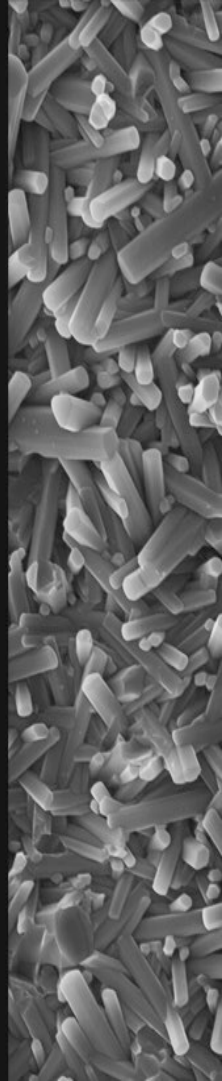
Non-medical Devices

- SINTX has some of the strongest silicon nitride in the world
- SINTX has shipped several non-medical components in 2020 – the first in the Company’s history
- SINTX has collaborative arrangements with several ceramics companies to share quoting opportunities, and to develop 3-D printed silicon nitride and other technologies
- The Company is pursuing AS9100 certification and has obtained ITAR registration in order to enter the aerospace and defense markets



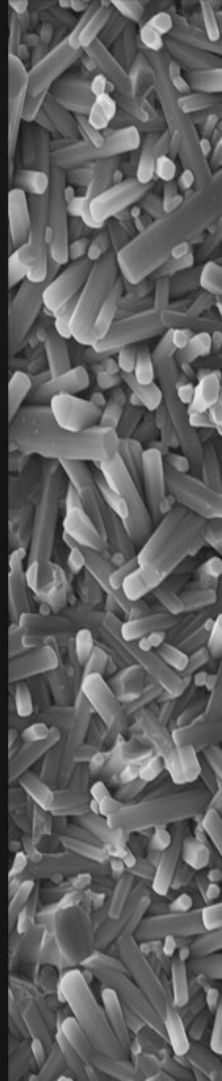
Competitive Horizon

- We believe that SINTX is the leader in biomedical silicon nitride technology
- Our work and success has attracted others to this space
- China studies (German, Czech Republic collaboration) in 2019-
 - Zhang et al- *Feasibility of SiAlON-Si3N4 Composite Ceramic as a Potential Bone Repairing Material*
 - Dai et al- *Promoting osteoblasts responses in vitro and improving osteointegration in vivo through bioactive coating of nanosilicon nitride on polyetherether ketone*
 - Wu et al- *Enhanced bacteriostatic activity, osteogenesis and osseointegration of silicon nitride/polyetherketoneketone composites with femtosecond laser induced micro/nano surface*
 - Wu et al- *Microporous Coatings of PEKK/SN Composites Integration with PEKK Exhibiting Antibacterial and Osteogenic Activity, and Promotion of Osseointegration for Bone Substitutes*
- Clearest validation of our claims (Also: Sweden, UK, USA, Brazil, Australia)
- Our strategy: Invest in R&D to maintain leadership



SINTX 2020 Key Objectives

- Develop new lines of revenue
 - New markets
 - New non-spine products
 - Pursue M&A opportunities
- Support spine partner CTL Amedica
 - Expand into Asia and Mexico
 - Collaborations in Marketing, New Products, New Technologies
- Continue robust R&D program
 - Maintain leadership, monitor competitive landscape
 - Co-develop new products with external partners



Who is SINTX?

Leader in Silicon Nitride

Innovate, Develop, Disseminate

Expanding OEM partner base

Creating diverse lines of revenue

Fiscal Discipline, No Debt

Versatile technology platform

Diversity of opportunities

