



Gyrotron Technology, Inc.

GYROTRON TECHNOLOGY

INC

SEPTEMBER '16

(OTC:GYTI)

These materials contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended and Section 21E of the Securities Exchange Act of 1934, as amended. All forward-looking statements are inherently uncertain as they are based on current expectations and assumptions concerning future events or future performance of GYTI. Readers are cautioned not to place undue reliance on these forward-looking statements, which are only predictions and speak only as of the date hereof. In evaluating such statements, prospective investors should review carefully various risks and uncertainties inherent herein and in publicly available information on GYTI, including information filed with the SEC. These risks and uncertainties could cause actual results to differ materially from those indicated in the forward-looking statements. GYTI is under no obligation to update this presentation. **Further, In the following slides, we discuss global market size in terms of quantity, aggregate \$ value and/or \$ value per item. In addition we discuss annual capacity per gyrotron installation. Each of these numbers are Company estimates, and should be treated as such. Also, we speak of installation fees and royalty rates. These are targets that may or may not be achieved.**

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Recent Deals Validate GYTI's IP

- ❑ **GYTI's 2014 10-K discloses license with an unnamed Tier-One glass OEM**
 - ❖ The licensed technology is being used for glass-bending applications
 - ❖ Products are currently in commercial production

- ❑ **5/12/15 announced subcontracting award & development deal with PPG**
 - ❖ PPG Industries (PPG-NYSE), a \$30B Tier-One glass and chemicals OEM, retained GYTI as a subcontractor in a US Department of Energy sponsored project related to the fabrication of highly insulating VIG windows.

- ❑ **In July '15 GYTI completed a \$58K project for a Tier-One glass OEM that successfully demonstrated through mathematical modeling the technical feasibility of its heat –tempering technology and the numerous advantages it is expected provide. See slide 17.**

Gyrotron Technology Inc. (GYTI)

COMPANY OVERVIEW

- GYTI develops & licenses industrial manufacturing solutions based on gyrotron beam heating, which, in a broad range of applications, is far superior to conventional heating methods.
- The Company also markets its **Gyrotron Laminating System (GLS)** for laminating architectural glass and encapsulating solar modules.
- Gyrotron Technology Inc. has developed numerous gyrotron-based manufacturing solutions for the semiconductor, glass, food, plastics, and solar industries.
- GYTI's Team has unique R&D experience in gyrotron-beam applications, going beyond the gyrotron's roots in high-energy physics and **developing industrial materials solutions.**

GYTI's Key Investment Highlights

- ❖ **GYTI is a pioneer in developing, licensing, and integrating gyrotron-based industrial heating applications**
- ❖ **Gyrotron heating technology is proven, while GYTI's associated technologies and solutions have been validated by Tier One megacap relationships.**
- ❖ **GYTI's applications & roadmap address very large, broad, and diverse markets**
- ❖ **The Company has garnered traction and strong interest in some large non-glass markets, with top-tier OEM's**
- ❖ **GYTI's value proposition is attractive, for its disruptive solutions: improve cost/process/efficiency for large existing applications and/or enable new ones.**
- ❖ **The Company's competitive position is strong, and is complemented by a solid and growing patent portfolio**
- ❖ **GYTI's licensing model is lean, requires low capital intensity, and possesses tremendous operating leverage**

GYTI's Intellectual Property

- ❖ GYTI has 6 US patents, 3 pending applications, & a number of provisional applications

- ❖ GYTI's 4 gyrotron-beam related patents cover developments in:
 - A. Glass: US Patent 6,408,649 - Method for rapid thermal treatment of glass & glass-like materials using microwave radiation

 - B. Semiconductors: US Patent 6,423,605 - Method and apparatus for forming ultra-shallow junction for semiconductor device

 - C. Plastics: US Patent 6,368,994 - Rapid processing of organic materials using short wavelength microwave radiation

 - D. Critical technical aspects of gyrotron processing: US Patent 6,424,090 - Modification of millimetric wavelength microwave beam power distribution

- ❖ GYTI's 2 Gyrotron Laminating System related patents for process & equipment design:
 - 7,344,613 - Method for laminating glass sheets using short wave radiation
 - 7,476,284 - Method and apparatus for laminating glass sheets

Management and Directors

- ❖ **Dr. Vlad Sklyarevich, President, Director and Founder.** Dr. Sklyarevich has conducted gyrotron related R&D for approximately 30 years, and is the principal inventor of the Company's technologies, patents and patent applications.
- ❖ **Jack N. Mayer, Director.** Mr. Mayer was formerly a hedge fund portfolio manager and analyst with Gabriel Capital Corp. and associated entities, specializing in complex bankruptcy and distressed situations. Mr. Mayer is a director of Powersafe Technology Corp. (PSFT.PK) and a co-founder of its operating subsidiary, and a co-founder and director of MET Tech, Inc.
- ❖ **Jan Loeb, Director.** Mr. Loeb is President of Leap Tide Capital Management, Inc., a capital investment firm since 2001, has served as President and CEO of Acorn Energy Inc. since January 28, 2016 and was appointed to the Board of Acorn Energy Inc. and DSIT Solutions Ltd. in August 2015. Previously, Mr. Loeb was a Managing Director of Dresdner Kleinwort and Wasserstein, Inc., formerly known as Wasserstein Perella & Co., Inc. Mr. Loeb is also a director TAT Technologies Inc. and was the lead director of American Pacific Inc. until its sale in 2014.
- ❖ **Jerome Balsam, Director and Secretary.** Mr. Balsam has been a member of the New York Bar since 1982. He clerked for two federal judges and was associated with the law firm of Willkie Farr & Gallagher. He is currently an in-house attorney at Gabriel Capital Corp.
- ❖ **Dr. Michael Shevelev, Technology Director.** Dr. Shevelev has conducted gyrotron related R&D for approximately 30 years, and is a co-inventor of the Company's technologies, patents and patent applications.

What is the Gyrotron Beam?

The Gyrotron Beam is a high-performance industrial heating source, far superior to Gas, Infrared, or Laser.



The Gyrotron heats ...

- Ultra rapidly, with heating rate of thousands degree per second - large or small objects;
- To any temperature up to over 3,000⁰C with high repeatability and accuracy better than 1%;
- With precise and controllable temperature distribution.
- Two adjoining materials at very different rates – heating one rapidly while leaving the other one relatively cool.

Target Market: Glass



- GYTI's solutions replace legacy & less-efficient heating methods, by leveraging the gyrotron's superior speed, temp-range, precision, & control.

- GYTI has already licensed to, and is dynamically engaged with, a major glass OEM

- **KEY APPLICATIONS:** architectural and residential glass, heat tempering, chemical tempering, automotive, aerospace, pharmaceutical, lighting, cover glass, melting glass, etc.;

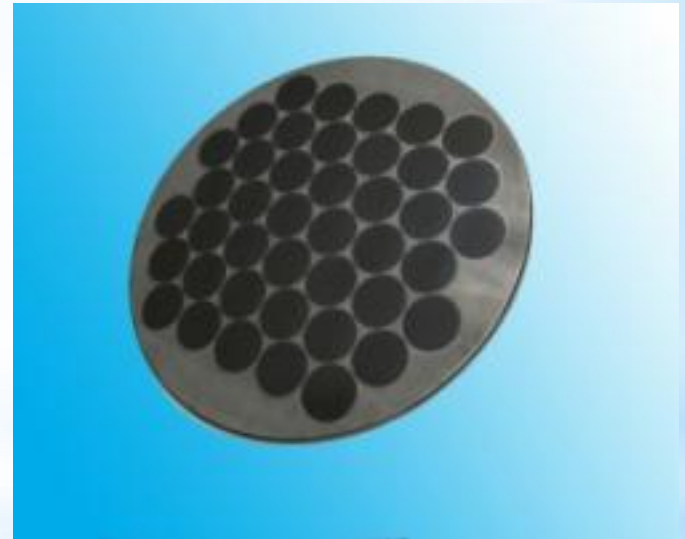


Target Market: Semiconductors

- ❖ GYTI solutions can activate boron in silicon crystals, achieving high conductivity and ultra-shallow junctions, which allows for more complex chip designs
- ❖ GYTI believes its gyrotron-based process should dramatically accelerate silicon-carbide activation, & significantly improve efficiency

SEMICONDUCTOR APPLICATIONS

- Annealing wafers
- Photovoltaic thin films (solar)
- Protective coatings
- Silicon carbide semiconductors



Target Market: Polymers & Composites

KEY APPLICATIONS

- ❖ Curing plastics and coatings
- ❖ Curing composite pipes
- ❖ Curing construction panels
- ❖ Curing car parts
- ❖ Drying paper
- ❖ Drying tiles

Target Market: Food Decontamination

- GYTI 's technologies possess attractive prospects in the massive food decontamination and safety space
- For example, meat processing plants typically deploy labor-intensive chemical decontamination methods with sub-optimal results.
- Gyrotron-based systems can achieve record decontamination (99.999%) levels & process efficiency - **improves shelf life, safety & economics**

DECONTAMINATION APPLICATIONS

- **Beef, Pork, and Poultry**
- **Solid and semisolid produce**



Target Market: Laminating Glass

- **GYTI markets its “Gyrottron Laminating System” (GLS), a patented, continuous in-line process and equipment architecture for:**
 1. lamination of architectural flat glass
 2. encapsulation of solar modules
- **The GLS has major advantages over conventional laminating systems:**
 1. Conventional systems require an autoclave for finishing
 2. the GLS reduces capital intensity and improves efficiency

LAMINATION APPLICATIONS

- Windows, doors, floors,
- Auto windshields, side windows
- Facades & decorative panels
- Bullet proof glass
- Solar panels



Some GYTI Addressable Markets

GYTI solutions target a broad range of industrial heating applications, such as:

A. Glass Shaping & Bending

- ❖ Estimated Annual Global Market for Shaped Windshields is \$4.5B

B. Glass Tempering

- ❖ Estimated Annual Global Market for Tempered Glass is \$11B

C. Glass Chemical Strengthening

- ❖ Estimated Annual Global Market for Chemically-Strengthened Glass is \$2B

D. Lamination

- ❖ Estimated Annual Global Market for Laminated Glass is \$10B

E. Silicon Wafer Diffusion

- ❖ Estimated Annual Global Silicon Wafer Annealing Market is \$8B

F. Food Decontamination

- ❖ Estimated Annual Global Beef Decontamination Costs are \$2.9B

- ❖ Estimated Annual Overall Meat and Solid Produce Decontamination Costs are a large multiple of the above.

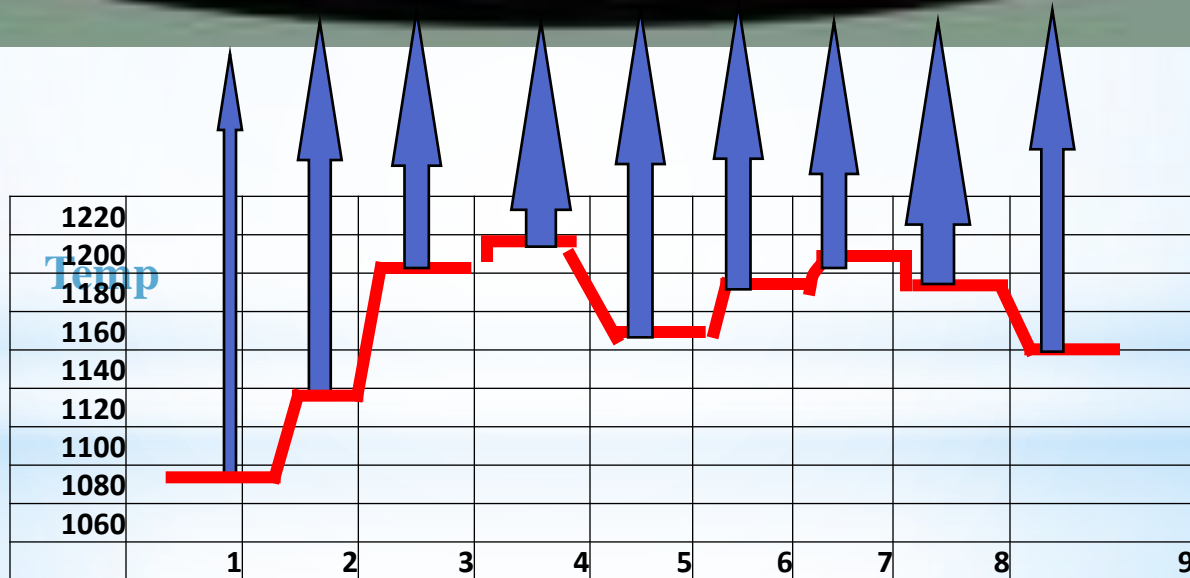
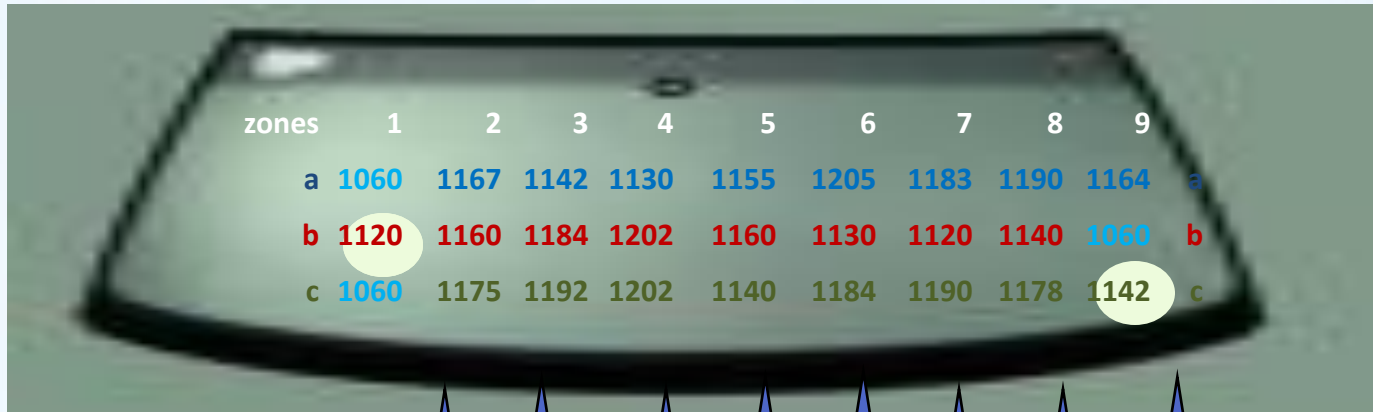
G. Forming Automotive Interior Parts

- ❖ Estimated Annual Global Market in excess of \$20B

H. And Many More

GYTI's Windshield Shaping

Any temperature distribution over the glass sheet (i.e. different curvatures require different heat levels) can be utilized by scanning the gyrotron beam.



GYTI's Glass-Shaping Benefits & SAM

Benefits of GYTI's glass shaping system VS. current lamp heater arrays

GYTI's gyrotron-based system enables OEMs to:

- Substantially lower production costs
- Improve automation and process efficiency
- Yield superior end-product, with wider shape varieties
- Improve compliance with new national distortion-testing standards

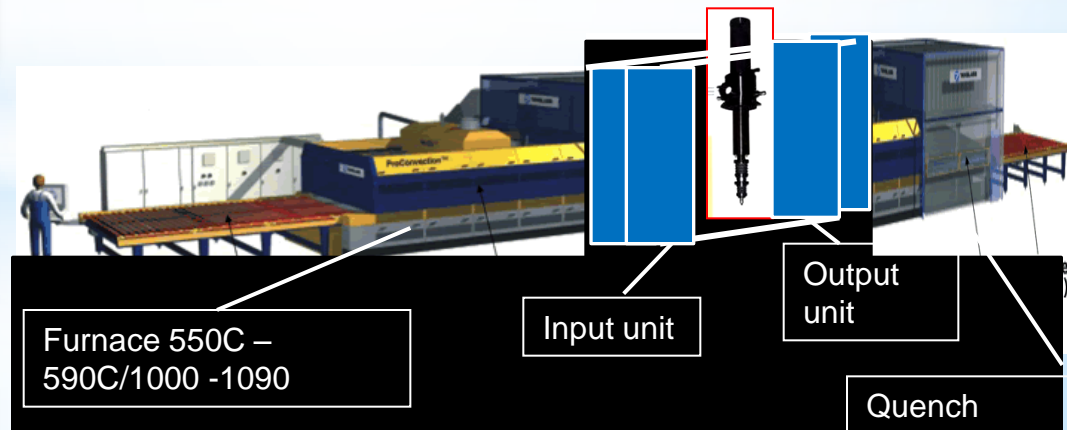
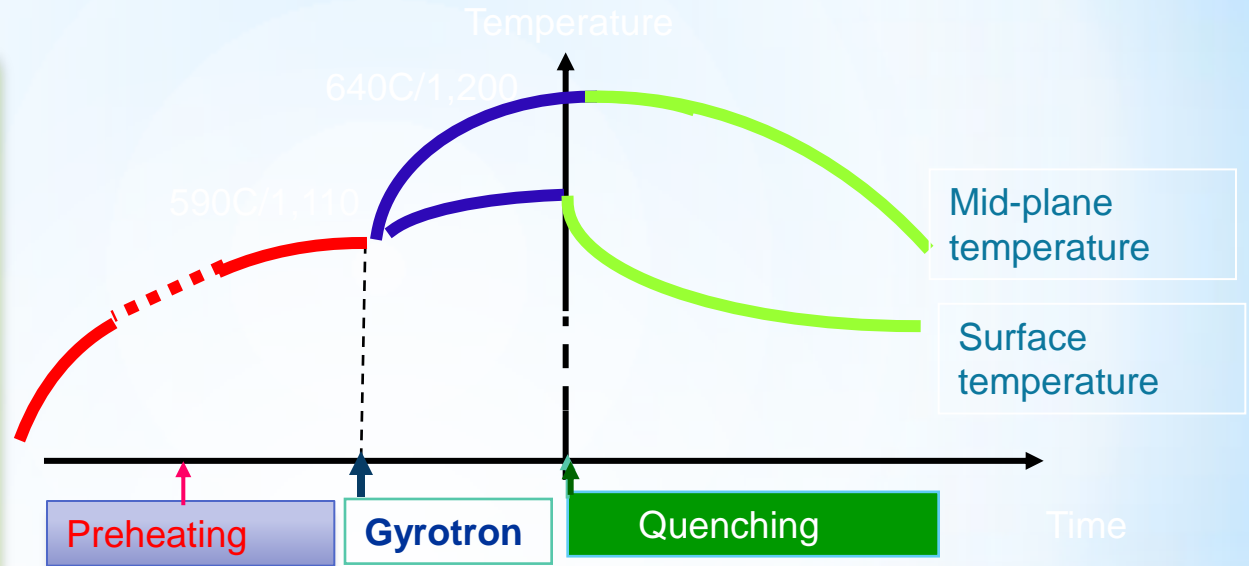
Market Opportunity for GYTI

- Approximately 100 million windshields need to be shaped annually.
- Average cost per finished windshield unit is \$45
- Capacity per GYTI gyrotron-system installation = 120K units per year
- GYTI's upfront licensing fee = \$150K per installation

Accordingly, each 1% of market share, is targeted to yield upfront licensing of \$1.2M, & annual royalties of ~\$450K, based on a \$0.45 per unit target royalty, i.e. a 1% rate.

Gyrotron Glass Tempering Concept

Instead of heating from the surface to the mid-plane, the gyrotron heats the mid-plane directly, keeping surface temperature lower thus avoiding the problems created by the high temperatures currently required at the surface of the glass.



GYTI's Glass-Tempering Solutions: Benefits & SAM

GYTI's tempering solutions should enable OEMs to manufacture:

- Glass & low-E coated product without roller marks and waviness
- Stronger product with significantly better optical quality
- With substantially reduced (up to 40%) energy requirements
- With lower production costs, less breakage and less downtime. Also
- Extensive computer modeling shows that thinner glass may be heat tempered which GYTI believes is of strong interest to the automotive glass industry.

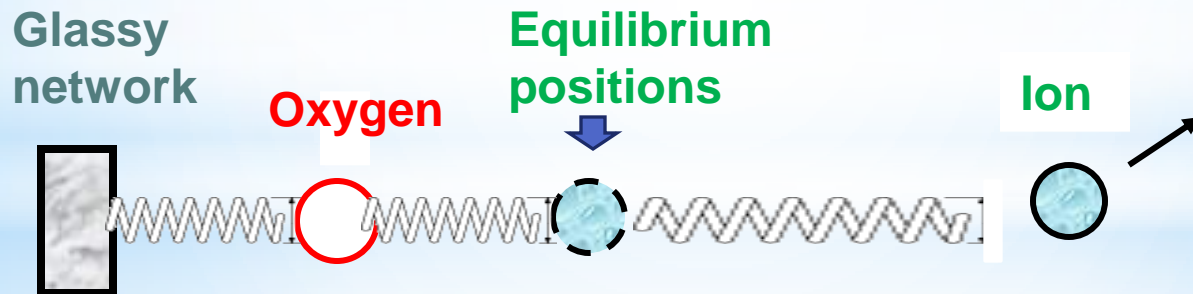
Market Opportunity for GYTI

- Annually ~200M square meters (SM) of automotive glass, plus ~300M SM of other glass types, are tempered .

Glass Chemical-Strengthening Concept

The process of chemically strengthening glass is based on replacing smaller sodium ions inside of the glass with larger potassium ions. Because of the size difference compression stress is created.

Gyrotron radiation heats primarily the sodium and potassium ions thus accelerating the ion exchange process. Glass can be strengthened in a few minutes not in hours.



GYTI's Glass Chemical-Strengthening: Benefits & Market Size

GYTI's glass chemical-strengthening solutions enable OEMs to:

- Strengthen glass in a **few minutes**, versus hours using current methods
- Significantly lower production costs, and improve process efficiency
- Thus, any glass can now be cost-effectively strengthened
- GYTI's disruptive solutions could significantly drive market growth

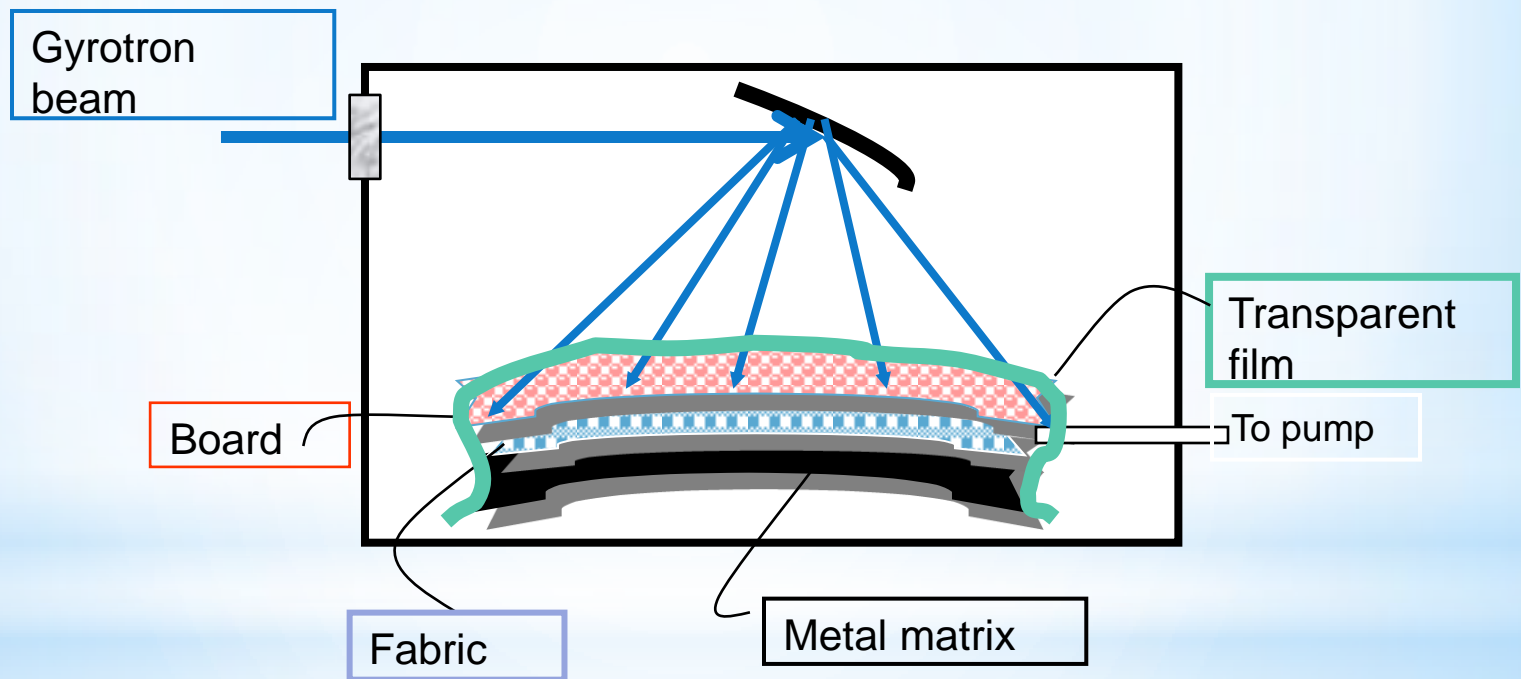
Market Opportunity for GYTI

- The chemically-strengthened glass market is ~\$2B per annum
- Average cost of ~\$80 per SM, equates to an annual size of 25M SMs
- Capacity per gyrotron installation is ~6 Square Meters per hour = 50K SM per year
- Upfront licensing fee is \$250K per installation

Accordingly, each 1% of market share is targeted to yield upfront licensing fees of \$1.25M & annual recurring royalties of \$600K (expected royalty rate is 3%).

Forming Polymer Base for Automotive Parts Concept

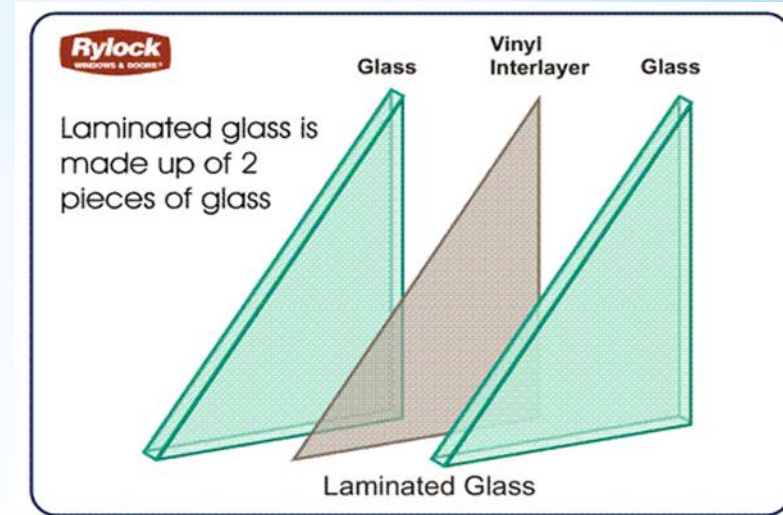
GYTI is engaged with a Tier-One automotive part manufacturer, who is looking to deploy gyrotron-based solutions to form very high volume plastic parts in a far more efficient and cost-effective manner.



Eliminates massive presses, saves energy, labor costs, and space,
decreases cycle time from 20 minutes to less than one minute

Glass Lamination

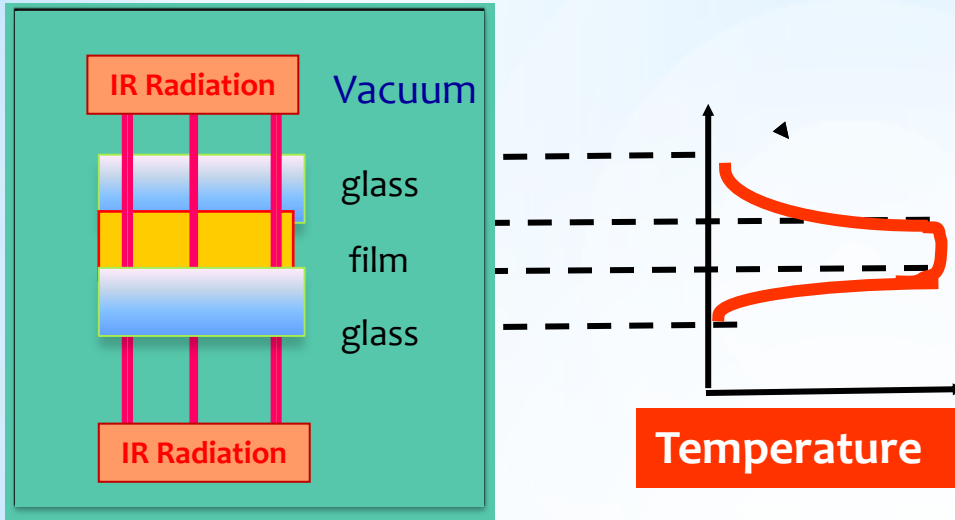
Laminated glass consists of a tough protective interlayer made of an adhesive polymer film such as PVB bonded together between two panes of glass under heat and pressure.



Laminated Glass

Applications for laminated glass include safety glass (property, security, bullet proof), windows, doors, floors, sound-proofing for hotels and airports, UV ray control, heat and cold insulation, hurricane/storm protection, display windows, facades, rails, as well as, solar cells, glazing for windshields, side windows, and other for all kind of cars, trucks, boats, trains, etc.

GTI's Glass Lamination Concept



The main concept of our process is drying film by heating an assembled product in a vacuum and using penetrating electromagnetic radiation that heats preferably the adhesive film



GYTI's Lamination Solutions: Benefits & Market Size

GYTI's Lamination solutions enable OEMs to:

- Lower operating costs due to reduced labor, energy and maintenance
- Substantially augment productivity
- Upgrade at a comparable equipment price
- Deal with films, as GYTI's process is less sensitive to moisture control
- Laminating both glass and solar modules

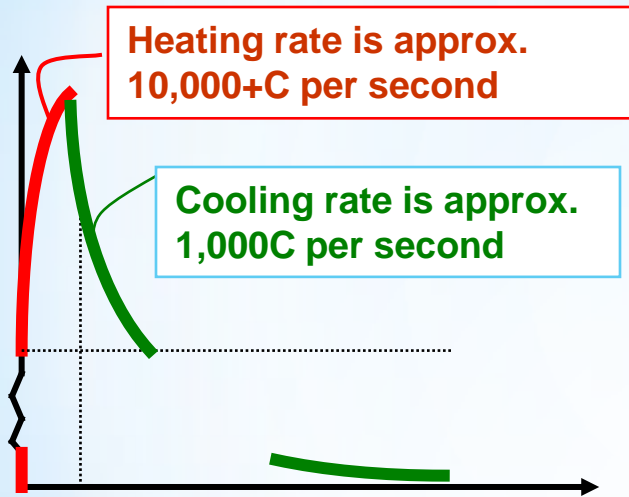
Market Opportunity for GYTI

- Flat laminated glass production is ~300M square meters annually
- Average cost is approximately \$30- \$50 per square meter
- Annual capacity per gyrotron installation = 250K SM
- Upfront license fee = \$50K per installation

Accordingly each 1% of market share is targeted to generate upfront fees of \$600K and recurring annual royalties of \$2.3M (target rate is \$0.75 per SM)

Annealing Wafers With GYTI Solutions

Benefits & Market Size



GYTI's gyrotron-based wafer annealing solutions:

- Can create **ultra shallow junctions** of less than 70 Angstroms
- Feature ultra rapid heating, which provides low diffusion of dopants
- Yield high conductivity due to high concentration of activated dopants
- Creates precondition for next-gen PCs & electronics devices

Market Opportunity for GYTI

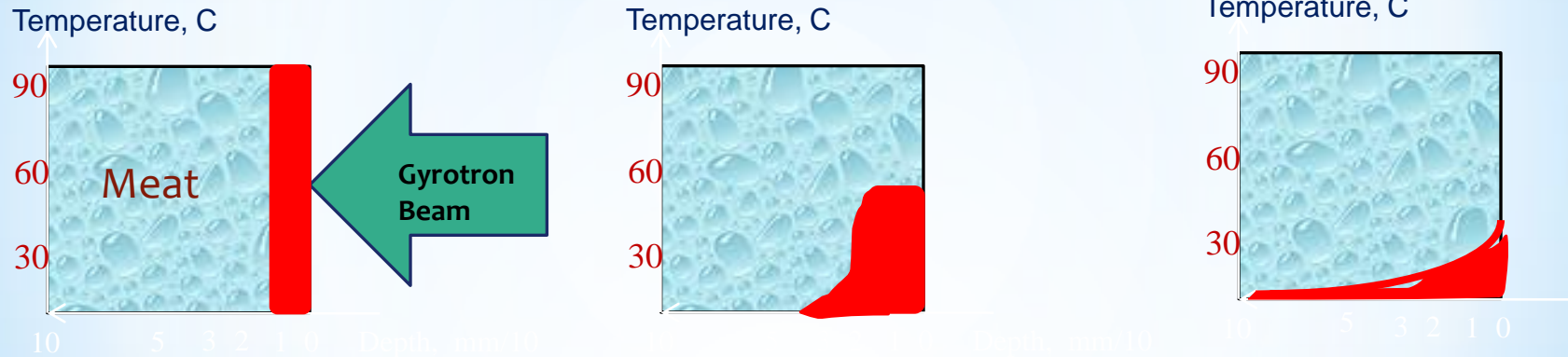
- There are ~160M wafers require activation on an annual basis
- Average cost per activated wafer is ~\$50
- Annual capacity per gyrotron installation = 1M wafers
- Upfront license fee = \$300K per installation

Accordingly each 1% of market is targeted to yield upfront licensing fees of \$500K and recurring annual royalties of \$1.6M (expected royalty rate is 2%).

Food Decontamination

- The USDA estimates foodborne pathogens are responsible for ~48M illnesses annually
- These ~48M food-contamination incidents lead to ~8,000 deaths per annum
- The estimated annual healthcare costs resulting from these cases are \$152 billion
- Thus, the ability to improve on incumbent decontamination processes, which are labor intensive and nowhere close to perfection, presents an huge opportunity for GYTI
- GYTI's target decontaminating opportunities relate to cleaning:
 - ❖ Beef, Pork, and Poultry
 - ❖ Solid and semisolid produce

GYTI's Food Decontamination Concept

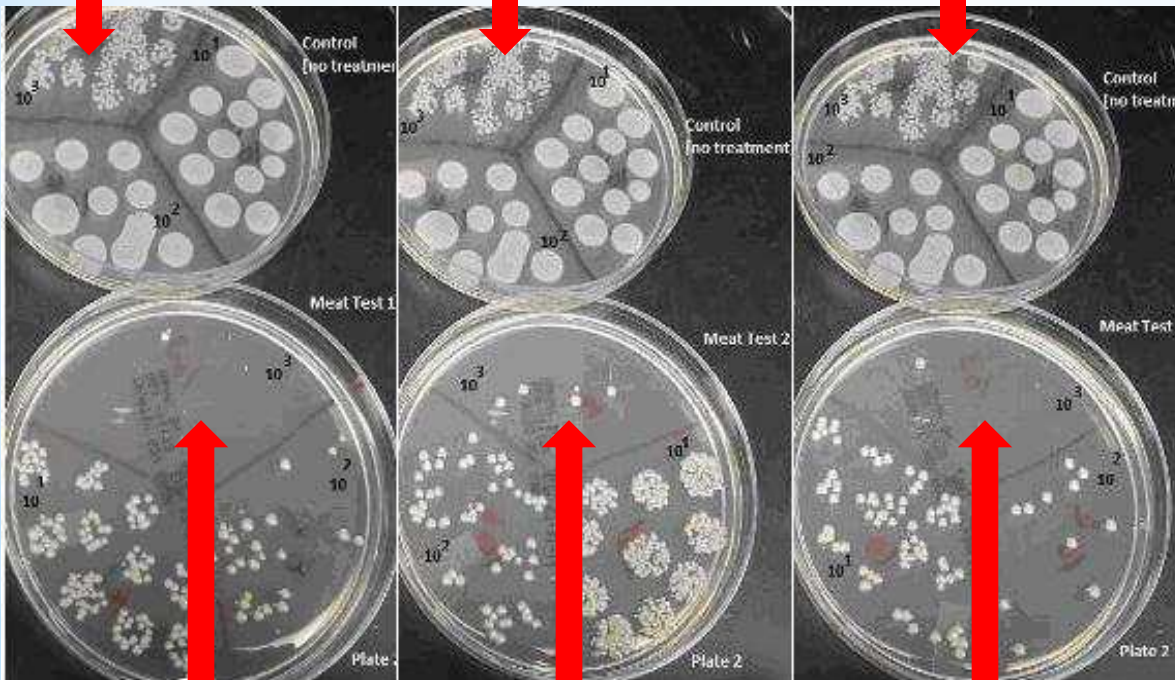


The main idea is to selectively and rapidly (in milliseconds) heat a thin surface layer to kill all pathogens on the surfaces of foodstuff without “cooking” material behind said thin layer.

GYTI's Decontamination Test Results

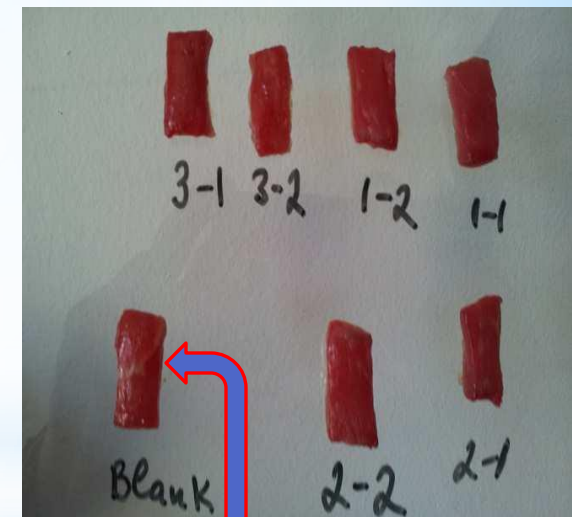
- ❖ Meat surfaces inoculated with $\sim 1 \times 10^7$ cells/surface
- ❖ Reduction of inoculated bacteria from surfaces was over **300,000 times**

Before processing



After processing

Meat appearance after processing



Not processed meat

Decontamination of Beef Carcasses

GYTI's Benefits & Market Size

GYTI's gyrotron-based food decontamination solutions can:

- Eradicate 99.999% of bacteria on meat surfaces
- This level is orders of magnitude better than any competitive process

Market Opportunity for GYTI

- ~190M beef carcasses need to be decontaminated annually
- Average cost of processing (cleaning) is approximately \$15
- The total market for carcass cleaning is \$2.9 billion.
- The targeted royalty is \$1 per carcass
- Capacity per gyrotron installation = 1M carcasses/year
- Upfront license fee = \$400K per installation

Accordingly each 1% of market share is targeted to generate upfront licensing fees of \$800K, and a recurring annual royalty of \$2M.

GYTI's Key Investment Highlights

- ❖ **GYTI is a pioneer in developing, licensing, and integrating gyrotron-based industrial heating applications**
- ❖ **Gyrotron heating technology is proven, while GYTI's associated technologies and solutions have been validated by Tier One megacap relationships.**
- ❖ **GYTI's applications & roadmap address very large, broad, and diverse markets**
- ❖ **The Company has garnered traction and strong interest in some large non-glass markets, with top-tier OEM's**
- ❖ **GYTI's value proposition is attractive, for its disruptive solutions: improve cost/process/efficiency for large existing applications and/or enable new ones.**
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- ❖ **GYTI's licensing model is lean, requires low capital intensity, and possesses tremendous operating leverage**

GYTI Capitalization

BS"D				6/30/2016	
GYTI CAPITALIZATION		Liq preference		strike/	
	Shares	per share	Liq preference	Conversion	F/D Shares
Common	14,388,454				14,388,454
Pfd A and A1	498,951	\$6	\$2,993,706	\$1.60	1,871,066
Pfd A2	1,827	\$35	\$63,945	\$0.70	91,350
Pfd B	39,959	\$50	\$1,997,950	\$0.85	2,350,529
Pfd B1	40,650	\$35	\$1,422,750	\$0.60	2,391,176
Pfd B2	1,007	\$35	\$35,245	\$0.70	50,350
Warrants Exp 12/15/16	91,225			\$1.00	91,225
Warrants Exp 10/1/18	60,000			\$0.75	60,000
Options	60,000			\$0.73	60,000
Total					21,354,151
Accrued Pfd dividends			\$2,070,256		
Assets			\$478,180		
Liabilities			\$2,192,511		