PowerSafe Technology Corporation

Innovation in Solid State Photomultipliers

AMPLIFICATION Technologies

Amplification Technologies, Inc.

Introduction-Overview

Amplification Technologies is the originator of the patented new technology

Discrete Amplification

to detect and amplify very weak signals in a semiconductor device.

Corporate Vision

This technology offers unparalleled and far-reaching benefits to industries such as medical diagnostics, scientific instrumentation, surveillance and monitoring, homeland security, and many others

Discrete Amplification (DA) Technology

The solid-state discrete-amplification (DA) technology distributes low-level signals into individual photoelectron components, amplifies the signals in separate amplification micro-channels to a precisely determined level, and then combines them into one analog output signal.

Intellectual Property

ATI owns United States patent U.S. Patent No. 6,885,827 titled “High Sensitivity, High Resolution Detection of Signals” (April 2005) and was granted a follow-up patent “High Sensitivity, High Resolution Detection of Signals,” U.S. Patent 7,085,502 in August 2006.

Current Technology

Photomultiplier Tubes ("PMT")

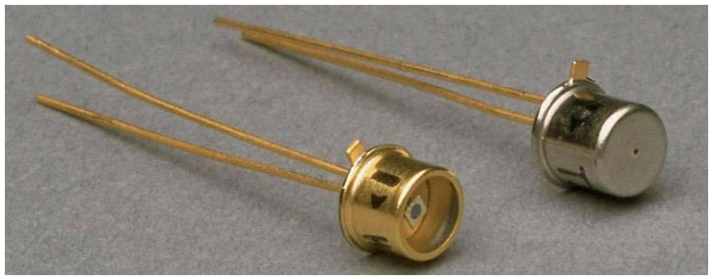
Avalanche Photodiodes ("APD")

Photomultiplier Tubes ("PMT")

- "1930's" technology
- Require high voltage
- Bulky
- Fragile
- Sensitive to magnetic fields
- Limited in certain operational areas of speed of detection and recovery.

Avalanche Photodiodes ("APD")

- Introduce excess noise (unwanted signals or distortion) in the amplification process



- Have limited abilities to increase the strength (amplitude) of the signal (gain)
- Cannot be operated continuously - Require "dead time" before they recover to sense the presence or absence of the next signal.

ATI Discrete Amplification

- Low noise
- High gain
- Low manufacturing cost
- Low voltage
- Continuous operation
- Analog / Digital outputs
- Detector arrays feasible
- Solid state -compact and rugged
- Ease of integration with electronics

DA Performance Parameters

ATI, using standard semiconductor manufacturing processes has produced microsensors that have:

- **High gain**: up to **1M times-** *Measure of the amplification*
- **Low noise-factor**: less than **2%** – *Measure of unwanted byproduct signals*
- **Fast response time**: less than 1 **nanosecond** – *Fast signal detection that allows output signal digital processing in real time*
- **DA sensors** can detect the signal of **a single photon** (the smallest unit of light) in a **visible or invisible spectrum**

Existing Markets

- Positron Emission Tomography
- Remote Sensors
- Security Devices
- Optical Network Hardware
- Image Sensors
- Microscopy
- Biosensors

Existing Markets—Size in Dollars

Market Segment	Estimated Size 2009/10	Estimated Four Year Growth Rate
Positron Emission Tomography	$450 million	11 %
Biosensors	$1.5 billion	10.5-14%
Remote Sensors	$500 million	6.5%
Security Devices	$100 million	9-10.2%
Optical Network Hardware	$1.3 billion	6%
Image Sensors	$1.7 billion	7.5-9%
Microscopy	$50 million	11-13%

Future Markets

- *LIDAR/LADAR (Light Detection and Ranging/Laser Detection and Ranging*
- *Spectroscopy*
- *Nuclear Imaging Detector / Medical Instrumentation*
- *Scientific Instrumentation*
- *Biochip Devices*
- *Chemical Lab-on-a-Chip and Analytical Instruments*

Management

Mikhail Leibov, CEO

- 1995--Founder and CEO of Corbina Telecom
- 2007--President of IDT Telecom

Competition

- Hamamatsu Photonics K.K. (Japan)

  Photomultiplier tubes, light sources, imaging tubes, opto-semiconductor, and imaging and analyzing systems

- PerkinElmer Inc. (US)

  Human Health division--genetic screening and bio-discovery devices; Environmental Health division-compound identification, analysis, and quantization

- Photonis (Netherlands)

  Night vision, industrial, scientific and medical imaging

- SensL (Ireland)

  Low light detection technology based on a silicon detector fabrication process

- ET Enterprises Limited (UK)

  Photomultiplier tubes and accessories

Recent Milestones--Highlights

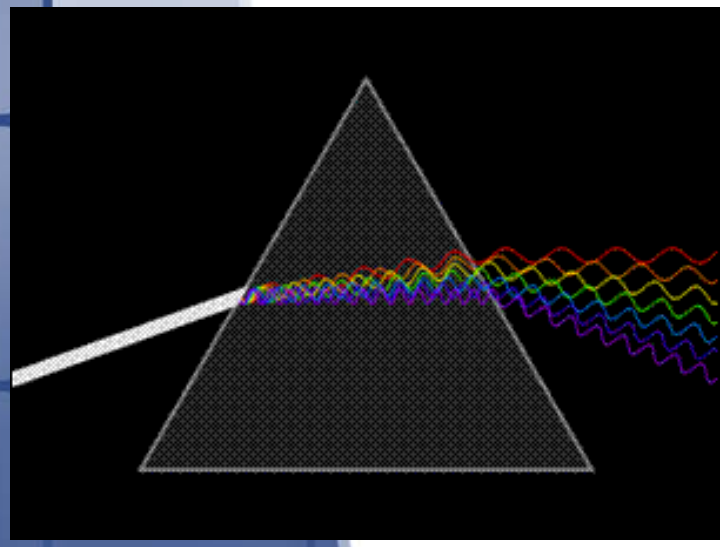
- **July, 2009--**Amplification Technologies commences shipment of new In/Ga/As solid state photomultipliers-
- **October, 2009--**Amplification Technologies announces higher performance thermoelectrically cooled single photon counting solid state photodetectors
- **November, 2009--**Selection by NASA for two Small Business Innovation Research Projects

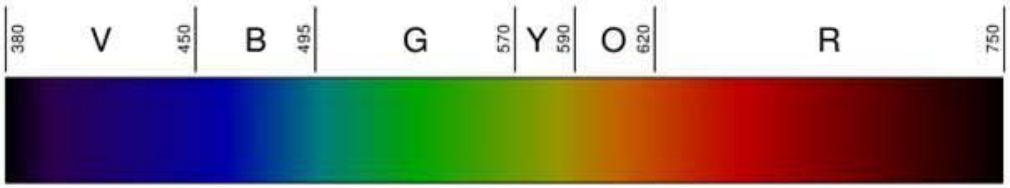
Recent Milestones-con't

- **February, 2010**-- Signing of Contracts With NASA for Two Small Business Innovation Research (SBIR) Projects
- **April 20, 2010**--Contract With Lockheed Martin
- **October, 2010**--Selection by NASA for a Phase II Small Business Innovation Research Project
- **September, 2010**--ATI Selected by US Army for SBIR Grant Related to Night Vision
- **September, 2010**-- Successful Completion of Two NASA Phase I SBIR Projects

Silicon Products

Silicon devices detect and amplify in the visible spectrum





Competitive Edge to Silicon

Select Parameters	Photomultiplier Tube (Vacuum Tube)	Avalanche Photodiode in linear mode	**Discrete Amplification Device (ATI)**
Gain	10^5-10^7	$<10^3$	**10^5-10^6**
Excess Noise Factor	1.3	5	**1.05**
Operating Voltage (V)	1500+	100-150	**50-60**
Manufacturing Cost	High $$$	Medium $$	**Low $**

InGaAs Devices

InGaAs devices detect and amplify in the Near Infrared (NIR) spectrum

Competitive Edge to InGaAs Devices

Select Parameters	Photocathode Tube (Vacuum Tube)	Avalanche Photodiode in linear mode	Discrete Amplification Photon Detector (ATI)
Gain	10^3-10^4	10-50	10^5-10^6
Excess Noise Factor	1.3	3	<1.05
Rise Time (ns)	3	0.5	0.35
Operating Voltage (V)	1500+	40-60	40-60
Manufacturing Cost	Very High $$$$	Medium $$	Low $

Short and Medium-term Targets

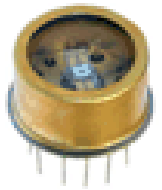
InGaAs device development for

- *Rangefinding/Lidar*
- *Imaging*
- *Instrumentation*

Long-term Goals

- ***Silicon***
- ***Biosensors***
- ***Chemical sensors***

Discrete Amplification Products

DAPD10C	**Discrete Amplification Photon Detector** Wide spectral response, high-speed photodetector designed for the analog detection of low-level light signals.	
DAPD TO-8	**Thermoelectrically Cooled DAPD** DAPD photodetector packaged in a hermetically sealed TO-8 package with a two-stage thermoelectric cooled	
DAPDNIR	**Near Infrared Discrete Amplification Photon Detector (DAPDNIR)** Near infrared spectral response high-speed self quenching photo detector designed for the single photon detection applications	
NIRDAPD TEC	**Near Infrared DAPD Thermoelectrically Cooled NIRDAPD** A photodetector packaged in a hermetically sealed TO-8 package with a two-stage thermoelectric cooler	

Research and Development

- ***Communication***
  - ***Absolutely-secure key distribution for the ultimate encryption***
  - ***Free space optical communication in photon starved application***
- ***Remote sensing***
  - ***3D imaging***
  - ***LIDAR and atmospheric sensing***
- ***Industrial and Biomedical***
  - ***Semiconductor diagnostics***
  - ***Single photon fluorescence***

Sales and Marketing

- *National Aeronautics and Space Administration (NASA)*
- *US Army*
- *Lockheed Martin*

Financials

	2011	2012	2013	2014	2015
Revenues	**1,339**	**3,855**	**8,296**	**19,265**	**70,850**
Cost of Sales	433	1,542	4148	9,055	33,000
Gross Profit	906	2,313	4148	10,210	37,850
Research and Development	1,056	1,214	1,396	2,200	4,000
Marketing & Sales Expenses	315	362	417	500	550
General & Admin. Expenses	617	709	815	950	1,100
Total Expenses	**2,421**	**3,827**	**6,776**	**12,655**	**38,900**
Net Income before Taxes	**$(1,082)**	**$28**	**$1,520**	**$6,560**	**$32,200**

Competitive Edge—Summary

- ✓ Next generation patented technology
- ✓ Photon-counting level sensitivity
- ✓ Higher Flexibility
- ✓ Expanded potential for superior operating characteristics.
- ✓ Superior detection of other kinds of low level signals
- ✓ Superior temperature and voltage stability
- ✓ Performance improvements over existing technologies
- ✓ Wider spectral range
- ✓ Higher photon detection efficiency
- ✓ Wider dynamic range
- ✓ Faster response
- ✓ Higher voltage stability
- ✓ Higher thermal stability

Investment Opportunity

- Opportunity for a strategic partner or financial investor to invest in Amplification Technologies
- Projected outside capital requirements for
  - 2011 - $ 1.25M
  - 2012 - $ 1.25M

Current Offering – PSFT Cv Pfd- Summary

Securities:	Series D-3 Preferred, cv 600:1 into common ($.0833/shr); warrants @ $0.125 expiring later of 6/30/12 or 60 days after underlying common is registered
Price:	$50.00 per unit of one share and 300 warrants.
Liquidation Pref:	$50.00 per share.
Dividend:	2% per quarter; PIK thru 12/12.
Offering size:	Minimum $1,000,000 Maximum $1,250,000
Covenants:	No borrowing for operations; Most senior pfd; issuances limited to $4MM of this and pari passu classes
Capitalization:	Approximately 128 million shares f/d including convertibles, deferred, restricted, unvested, options, warrants, to be issued etc.; no funded debt
Registration Penalty:	1/2% per month after November 1, 2011
Repurchase of Preferred:	Mandatory repurchase offer 12/31/15; Mandatory conversion of preferred if common underlying preferred is registered, trades above $ 0.14, and other conditions are met.