



# Naval Surface Warfare Center

*Igniter for Exothermic Torch Rod  
Patent # 7,117,796*

## *Mini Market Study*

**August 2, 2011**

**Prepared for:**

**NSWC-Crane Division**

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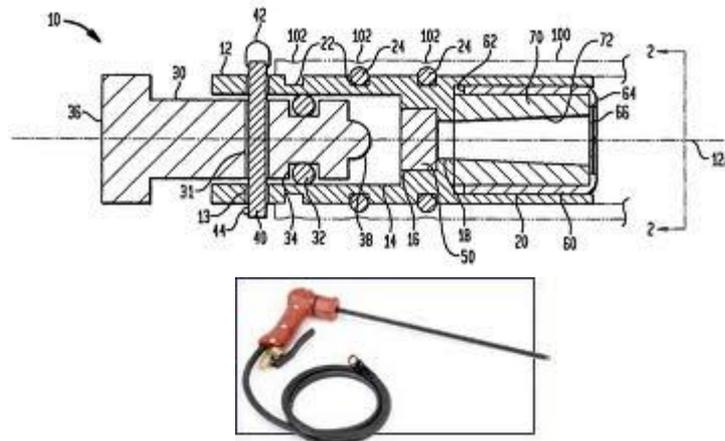
**Lina Ramos, ITTN Mentor**

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# Technology Synopsis

## Igniter for Exothermic Torch Rod

- Exothermic torch rods are used for cutting, piercing, or gouging almost any heavy metal material
- Typical Ignition methods: 12 V battery and striker plate
- This technology uses pyrotechnic material
- Complete torch rod system: \$35      Igniter alone: \$10-15
- A need for quicker, more reliable, and effective ignition methods for exothermic cutting is a burning issue that this technology can solve



# Key Competition & Competitive Advantage

## Company Product and Description/Features

### RapidFire Cutting Rod Igniter

- Near-instantaneous
- Non-electric ignition
- Can be used underwater



### Symex Hot-Rod Torch

- Requires striker plate
- Requires 12-volt battery



### Arcair Slice Cordless Striker Pack

- Uses 2 small batteries
- Striker plate is used for ignition



### X-Cut Igniter Tube

- Ignites without electrical power
- Replaces need for striker plate



### Caldo Mini Cutting Torch System

- Eliminates the need for 12-volt battery
- Requires a match / small flame for ignition



### Key Technology Benefits and Advantages:

- No 12V battery required
- **No electrical power supply needed**
- Waterproof design
- **No striker plate required**

### Uses pyrotechnic material that

- **Is very reliable and easily ignited**
- Is non-toxic
- Produces little reaction gas
- **Produces substantial amount of molten material**

# Potential Applications

**Military, FBI, & Police**  
Tactical breaching or  
demolition tasks



**Metals Manufacturing**  
Steel mills



**Demolition, Construction, & Renovation**  
Salvage work, scrap cleanup, railroads and  
shipyards, underwater contractors



**Fire & Rescue**  
Car wreck extraction,  
Heavy metal debris clearing



# Potential Targets for Licensing



## RemTechnology, Ltd.

Manufacture, export, import, and service provider servicing wide range of industrial enterprises in power engineering, ore mining, mineral processing, machine-building, shipbuilding and the ship-repairing industry among others. Product: REMTECH-2 Torch Set



## Arcair

World leader in air carbon-arc gouging products. Arcair provides a complete line of air-carbon arc products for wide-ranging gouging needs. Product: Slice Cordless Striker Pack



## C.H. Symington & Co., Inc.

Manufactures and distributes gouging equipment worldwide through 500 entities. Product: Symex Hot-Rod Torch



## Broco

Broco, Inc. is a leading developer and manufacturer of high-quality cutting systems for both land and underwater applications, underwater wet welding consumables, battery welding systems, and other cutting and welding-related technologies. Product: RapidFire Cutting Rod Igniter



## Oxylance, Inc.

Oxylance manufactures lance pipe, exothermic burning bars and related equipment for the primary metals and demolition industries. Product: Sure Cut Kit



# Recommendations & Next Steps

- Pursue existing discussions with Oxylance, Inc.
- Pinpoint businesses that have energetics experience and can legally produce the igniter
- Integrate into the torch rod product line for military & police applications
- Pursue alternative agreements with other potential licensees
- Attend the following conferences to build awareness and acquire additional potential partners:
  - The Ninth International Friction Stir Welding Symposium at the Embassy Suites Hotel - Von Braun Center in Huntsville, Alabama, USA, May 15-17, 2012.
  - International Conference on Underwater Welding
  - International Conference on Metallurgy, Welding and Qualification of Microalloyed (HSLA) Steel Weldments



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# Status to Date

| Titles   | Required Tasks   |
|--|--|
| Completed  | Draft interview agenda/questions. Obtain mentor approval prior to interviews.  |
| Completed  | Perform in person interview with inventor(s) and/or subject matter experts (SME) in accordance with a provided checklist             |
| Completed  | Develop a short succinct (1-2 paragraphs) common language description  |
| Completed  | Perform a web search for similar / competing products.   |
| Completed  | Identify potential markets for the technology including an abbreviated horizontal and vertical analysis and potential company lists. |
| <b>Potential targets for licensing<br/>Keys to Commercialization</b> | For the top 2-3 markets, contact potential companies to determine interest, issues, etc.   |



# Market Study Goals

Conduct an abbreviated market study assessment in order to:

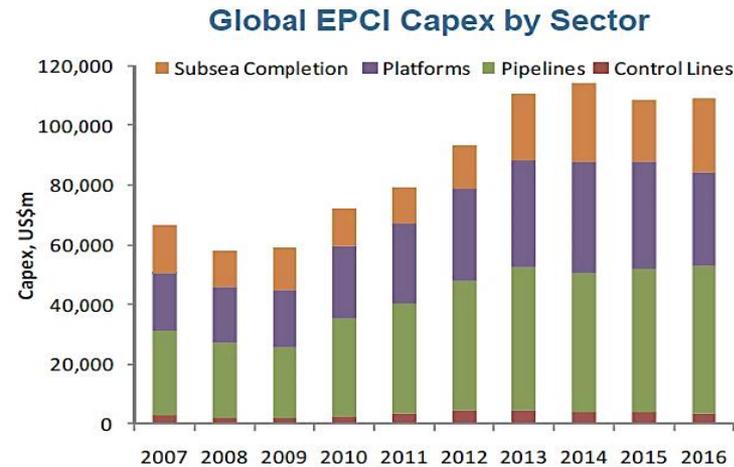
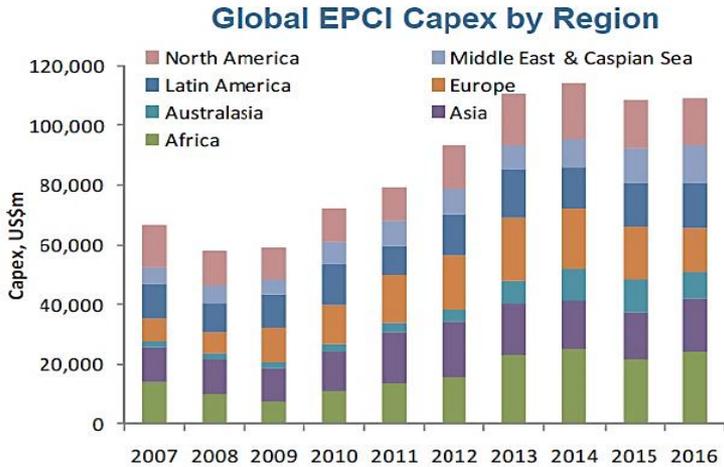
- A. Define the technology in common language as priority, commercial and military application
- B. Create collateral material for industry outreach
- C. Validate collateral material communication through primary and secondary research



# Situational Summary

- The Naval Surface Warfare Center's Crane Division has created a torch rod igniter for heavy metals and materials cutting.
- The technology has a small market and due to funding limitations by the federal government, the technology marketing strategy has been delayed.
- The igniter has been used within the Navy as well as other military factions for tactical applications, and is market ready.
- This igniter is of particular importance because it provides a quicker, more reliable method of ignition for exothermic cutting.

# Market Opportunity



- Market potential is worldwide
- Investments in engineering & construction will increase significantly
- By 2014, global market will reach almost \$120 billion
- Nearly \$450 billion is expected over the next 5 yrs.

# Naval Surface Warfare Center (NAVSEA)- Crane Division

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# Q&A



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