

# **Guidebook of IP/Technology Transfer**

# **Track 1**

## **Entry-level Tech Transfer Professional**

### **Topic 1.9.2**

## **The Technology Brief**

# Technology Marketing:

## The “Right” information

- Initially, less-is-more
- Define the technical innovation/ invention
  - What is it precisely? How does it work?
  - its benefits over existing technologies; DATA!
- IP and tangible property status
- Stage of development (technical, market, business)
- Types of deals to be considered
- Formats and media
  - “Tech Briefs”
  - Hard copy; Electronic
  - Web-based; links, photos, drawings, video

# The Technology Brief

**The “Tech Brief” is:**

- Short, easy to read quickly
- Suitable for technical and business reader  
(VP-level, business development, technical, innovation)
- Non-confidential
- Pictures and/or diagrams are valuable

# The Technology Brief

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## RESPONSIVE MATERIAL FOR SEPARATION OF ORGANICS FROM WATER AND METHODS THEREOF

### Categories for this Invention

Energy

• Biofuels (Energy)

Life Sciences

• Synthetic Biology

Biofuels (Synthetic Biology)

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### Applications

An application for this technology is in removal of low-molecular weight alcohols from water.

### Problem Addressed

An issue with the current technology is its limited production rate.

### Technology

The invention develops in-situ continuous separation systems which use stimuli-responsive polymers for low-molecular weight alcohol removal by using the polymers to

### TECHNOLOGY #13534

### Inventors

Alan Hatton

Department of Chemical Engineering, MIT

Group Link

Read more

Lev Bromberg

Department of Chemical

[Request Information](#)

## Electrocaloric Cooling With Electrostatic Actuation

Tech ID: 29763 / UC Case 2017-646-0

### SUMMARY

A collaboration between researchers in the UCLA Department of Materials Science and Engineering and SRI International has developed a novel solid-state cooling system that allows for efficient heat transfer for small, mobile devices.

### BACKGROUND

With the development of modern technologies, the need for efficient heat transfer and cooling systems to maintain stable temperatures has become increasingly necessary. The most common cooling systems consist of vapor-compression refrigeration systems which typically have a reported coefficient of performance (COP) of 2-4. However, the main disadvantages of these systems are that they are bulky and have circulating liquids/parts, which make them undesirable for small, mobile devices. To address these issues, there has been increased interest in developing efficient solid-state cooling systems, which are typically smaller, but are costlier and less efficient. Currently developed solid state cooling systems based on the Peltier effect, the conversion of temperature differences to voltage, report COPs that are much lower than the vapor-compression refrigeration systems. Improvements in the solid-state cooling systems are necessary to be applied to rapidly advancing technology.



## Degradation of Environmental Toxins by a Filamentous Bacterium

UW Ref# 049458

### Introduction

Environments contaminated with the chlorinated solvents trichloroethylene (TCE) and dichloroethylene (DCE) are major cleanup problems. TCE is a common ground-water contaminant in the United States as a result of solvent spills and dry-cleaning chemical disposal. Cis-1,2-dichloroethylene (DCE) is also a common ground-water contaminant that originates from anaerobic dehalogenation of TCE in the environment. These compounds are potential carcinogens and cannot be removed effectively from ground water using conventional water purification processes. For many sites, bioremediation is the only practical approach for cleanup, but the use of previously known solvent-metabolizing microorganism has often been hindered by their extreme sensitivity to the toxic effects of intermediates produced as the result of these bacteria's degradation of TCE and related compounds, and by their sensitivity of high concentrations of TCE itself.

### Technology description

Researchers at the University of Washington have developed a new method using substantially purified cultures of new phenol-oxidizing bacteria that are capable of the cometabolic degradation of TCE and DCE and that are resistant to the toxic effects of metabolic intermediates produced by this degradation. The invention provides a straightforward method for obtaining the filamentous bacteria in enrichment cultures inoculated with environmental samples such as groundwater.

### Business opportunity

The invention provides a method of bioremediation to cleanup environments contaminated with chlorinated aliphatic compounds.

### Stage of development

Initial data and working prototypes exist for this technology.

### Intellectual property position

The UW has US patent on file.

### For more information on this technology contact:

Bolong Cao, Ph.D., MBA  
Technology Manager, Invention Licensing  
bolongc@u.washington.edu  
206-543-3970



## TECHNOLOGY BRIEF

### d-CEL™: Flexible, Impact-Absorbing Padding Design/Material

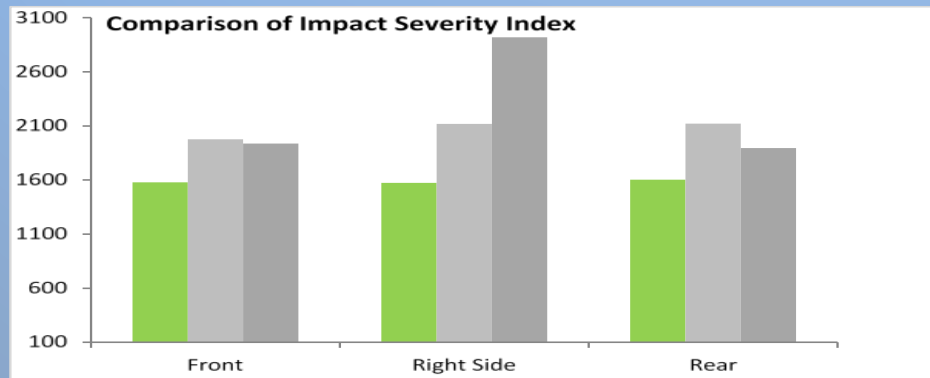
#### **Description**

A customizable padding material and design that provides significantly enhanced impact absorption.

#### **Technical Features & Benefits**

Impact protection and shock absorbance is a critical need in numerous applications, including head protection; body protection; repetitive stress relief; structural padding; ballistic protection; and more. Of the many materials and designs developed to absorb impacts, none exhibit as much impact-absorbing capability as this flexible, thin design. The key inventive feature of this technology utilizes a unique shock-absorbing design that is highly effective in impact energy dissipation. Prototype designs indicate it is easily manufactured. Independent third-party testing has demonstrated that this design and material combine to provide the same energy absorption as hard-shell type devices. The technology can be implemented in many different material configurations and designs tailored for particular applications.

This technology has been tested in headband form in a third party laboratory setting according to ASTM Standard F 1446. The tested headband was impacted numerous times under varying conditions (dry, wet and doubled over) and at varying locations (front, right side, and rear). When compared to currently manufactured competitors in the non-helmeted sports industry, the prototype reduced the severity index inflicted on the headform to a measurably greater extent (see graphic). Further testing, at Sheffield Hallam University, used a drop rig outfitted with a simulated cricket ball accelerometer. Results indicate the technology protects in a graduated manner with increasing impact energies. These results suggest the technology has the capacity to protect over range of applied forces.



3rd Party Laboratory Testing (Gray – Competitor, Green – Our Technology)

#### **Applications**

The technology applies to a broad range of industries with both human and non-human uses. In the human sector, the thin/flexible design is suitable for sports and recreation, industrial equipment, and military armor/protection—all sectors could use the technology in both hard and soft head/body protection, and padding for limbs and extremities. The technology also has medical relevance, with potential for

prosthetic padding, bed sore prevention and wheelchair seating. Non-human applications include packaging and shipping, ergonomics for work and recreation, and protective structures such as padded walls, goal posts, floor mats and ballistic blankets. The market potential for this technology is considerable: the U.S. market for sports protective equipment was nearly \$2.0 billion in 2013 and is estimated to grow to \$2.1 billion in 2018. The market for military protective gear was roughly \$1.07 billion. Beyond human applications, the technology applies to high-value item markets, including the \$1 billion musical instrument sector, the \$164 + billion U.S. dollar laptop market, and transport of fragile/sensitive instruments and art pieces.

**Intellectual Property Status:** PCT Patent Application US14/36753 filed on 05 May 2014

# Tech Brief Titles

*Ultrasonic transducers Impart Energy to Mixed Fluids*

or

*Ultrasonic Mixing Method & Apparatus Produces  
Batters without Additives*

*Colorimetric Water Activity Sensor Using Metal  
Hydrate-Doped Inorganic Organic Hybrid Polymer  
Thin Films*

or

*Simple Colorimetric Test for Water Activity*



Published on *Office of Technology Transfer* (<http://www.ott.arizona.edu>)

[Home](#) > Compact Snapshot Polarimetry Camera

## Compact Snapshot Polarimetry Camera

### Compact Snapshot Polarimetry Camera

Non-Confidential Summary

**Background:** Polarization data can provide valuable information about an object, such as distribution of internal stresses or whether the object is natural or man-made. With an expanding range of applications, polarization imaging devices are increasingly deployed outside of controlled environments, where factors such as compactness and mechanical ruggedness become important. Therefore, there is a need to develop polarization imaging devices that are simple, robust, and feature a small form factor.

**Summary:** Researchers at The University of Arizona have developed a novel device that answers these challenges. By manipulating quasi-monochromatic light from a scene in the object space, this device produces a map of the Stokes parameters, completely characterizing distribution of polarization states across the scene. Furthermore, it accomplishes this in a small form factor, without moving parts, and no extra power. Information about the entire scene is captured at once, yielding fast, snapshot operation.

**Lead investigator:** Michael W. Kudenov.

**Stage of development:** A laboratory prototype has been constructed and tested, validating principles of its operation and design.

#### Applications:

- Industrial process monitoring
- Environmental monitoring
- Defense and security

#### Advantages:

- Monochromatic operation allows customization for a specific use
- Lack of moving parts greatly reduces sensitivity to vibration and mechanical stress
- Snapshot operation captures information about the entire scene at once

**Status:** A U.S. utility patent application has been filed. Currently seeking commercial partner for licensing.

# Tech Brief Titles

*Synthetic process produces liquid tin(II) alkoxides for use as lactide catalysts and initiators of cyclic ester polymerization of*

or

*Improved Synthesis of Liquid Tin Alkoxides  
Simplifies/Reduces Cost of Biodegradable  
Polyester Manufacture*

*Spring-cable counter-balancing system for pitch-yaw compound joint mechanism*

or

*Improved Articulation Joint enhances Mechanical  
Performance of Robotic Arms, Camera Tracking  
Systems, and Similar Devices*

# Tech Brief Titles

*Polyolefin masterbatch containing modified microfibrillated cellulose and preparation process thereof*

or

*Novel biodegradable plastics offer numerous product and packaging benefits*

*Carbon Nanotube - Cement Composite Composition for Catalysis on Counter Electrodes of Dye Sensitized Solar Cells*

or

*Carbon Nanotube/Cement Composites Effectively Replace Platinum Electrodes in Solar Cells*

# Tech Brief Descriptions

A high intensity ultrasonic treatment method and apparatus for use with existing commercial dough/batter mixer to enhance rheological, aeration and textural properties of bakery products which improves overall quality via processing method.

A transparent conducting electrode (TCE) made from a composite of graphene and fluorine-doped metal oxide, for use in solar cells.



# Tech Brief Descriptionss

A plant biostimulant from seaweed, contains essential nutrients and hormones for plants.

An fruit picker with elliptical frame ring, a catching net, a picker blade, and a v-shaped blade holder which is connected to the tractor cable for triggering device for the trigger type picker. It can be attached to a stainless steel collapsible pole which is expandable.

# The Technology Brief

Your goal should be to have  
a Tech Brief for  
every technology which you pursue  
(by patent filing)

# Technology Brief (template)

**Title**

**Technology description:** [1 or 2 sentences]

**Technical qualities and advantages:** [2 or 3 sentences]

**Market applications and commercial opportunities:** [1-3 paragraphs]

**IP and tangible property status:** [1 or 2 sentences]

**Development status:** [1 or 2 sentences]

**Types of deals sought:** [< 1 sentence]

**Contact details:** [< 1 sentence]

**3 Key Diagrams or Images:**

# **A word about the TTP's vision for an invention**

- An essential value the TTP brings to the entire tech transfer/commercialization process
- It taps into both sides of the TTP mind: analytical (left) and creative (right)
- The best TTPs develop their vision for the technology in their own way, in their own time
- Suggested: don't over-analyze; collect the “dots”, be patient for the inspiration, “live” with the invention
- It is fun, exciting, and puts the TTP in a key role;  
Inventors will love you
- Use your vision to write/develop the Tech Brief

# **Track 1**

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### **Topic 1.9.2**

## **The Technology Brief**

**Thank you**