

UNIVERSITY OF NORTHERN IOWA

TECHNOLOGIES AVAILABLE FOR LICENSING 10/17

Bio-based and Humic Foundry Binders and Industrial Polymers (US Patent 8,815,976 B2)

- Derived from crop plants
- Derived from abundant, organic mineral
- Replace petroleum-based binders
- Estimated per-pound cost savings >40% over petroleum based
- Abundant, easily processed raw material sources
- Clean to use—depending on application, cut volatile organic compounds (VOCs) or other Hazardous Air Pollutants (HAPs) by 50% to 100% (zero emissions) in the casting process

“Virtual” Technologies for Teaching the Most Efficient Techniques for Laser-aimed Spray Painting and Coating (Virtual Paint “Accumulation Mode” US Patent 7839461)

- Commercial, industrial, and military applications
- Reduces waste and pollution
- Increases productivity
- Lowers costs and increases profitability

Laser-optimized Devices for Coating and Coating-removal Applications (“Laser Touch,” “Laser Paint,” “Laser Blast” US Patent 7839461)

- Optical Spray Paint Optimization System & Method (US Patents 5,598,972; 5,575,498 and others)
- Targeting and positioning system for paint or coating removal (US Patent 7,270,593)

Variable Potential Ion Guide (US Patent 6,657,190 B2) and Multipass Reflectron

- Inherent accuracy 10X to 100X better than current technologies, thereby reducing need for expensive corrective software computer hardware
- Particularly useful for proteomics applications (protein particle characterization and synthesis for pharmaceutical research, genomics, etc.)
- Compact design

Ion Trap Mass Analyzer Apparatus Utilizing MPIG Electrodes (US Patents 8,933,397 B1, 9,190,254 B1, and new disclosures)

- Miniaturization of an array detector as a component of a mass spectrometer allowing for significant reduction in overall spectrometer size
- Semi-conductor-based quadrupole mass analyzer
- Allows for increased portability

Bio-Security (US Patent 7,374,874 B2)

- Rapid, phage-based bacterial pathogen detection system
 - Patented, host-specific, predatory viruses (bacteriophages) attack only anthrax spores and anthrax bacteria
 - Systematized for detection or environmental remediation
 - Military, industrial, governmental facility, public health and other applications

Certified Native Plant Species

- Local ecotype certified prairie seeds
 - Opportunity to license regional ecotype certified native Iowa seed

Process for Manufacturing Greases Using Microwave Technology (US Patent 8,962,542 B2)

- Reduces the oxidation breakdown of vegetable oils by reducing the amount of time it takes to heat the oil
- Uniform type of heating that does not result in hot spots, eliminating the need to stir
- Can improve energy efficiency of the heating process by as much as 50%

Ramps and Pathways: A Constructivist Approach to Teaching Physical Science – Open Source

- Improves children's science achievement through movement of objects along ramps and pathways that leads to knowledge about concepts of forces and motion.

Functional Special Tests Synthetic Knee Model (Provisional filed)

- A synthetic knee model that allows student practitioners to visualize, palpate, and test for different degrees and types of ligament and meniscus injuries.

Juniperus Virginiana Extract as Preservative and Anti-microbial (Patent under consideration)

- Compounds used as alternatives for the synthetic compounds used in soaps as antimicrobials (Triclosan) and in personal care products for preservatives (Parabens).

A Novel Low-complexity, High-accuracy Technology to Identify Multiple Targets from Video Signals for Video-based Indoor Positioning and Tracking Systems (New Disclosure)

- Video-based indoor positioning and tracking systems utilizing programmed LEDs increasing the reliability of target identification.

Dilatometer: Cold Box Core Release Agent Sensor (CBRAS)

- Used for the cold box process
- Accurately determines when the release agent needs to be applied
- Removes the judgment necessary by the operator
- Able to discriminate the signals of the initial core removal and end of stroke on the core removal air cylinder

Lignite Coating for Time Release Applications

- Environmentally friendly coating for fertilizer and other products where timed release is desired

A Mineral Additive for Casting Defect Reduction and Surface Quality Improvement (Provisional Patent 62/409504)

- This additive improves the quality of sand castings and is based on 10 years of research.

Direct Three-dimensional Printing of Investment Casting Molds (New Disclosure)

- 3-D direct printing of investment casting molds without the need for expendable patterns.

Refractory Coatings for Silica Sand Molds to Allow for the Casting of Titanium (New Disclosure)

- The coating allows for the casting of reactive metal in silica sand molds.