



BILLING CODE: 5001-03

DEPARTMENT OF DEFENSE

Department of the Army

Notice of Availability of Government-Owned Inventions; Available for Licensing

AGENCY: Department of the Army, DoD.

ACTION: Notice of Intent.

SUMMARY: The invention listed below is assigned to the United States Government as represented by the Secretary of the Army and is being made generally availability of exclusive, partially exclusive or non-exclusive licenses by the Department of the Army.

U.S. Army Case Number ARL 17-33 entitled “Aluminum Based Nanogalvanic Alloys for Hydrogen Generation,” and a provisional patent application filed at the U.S. Patent and Trademark Office (USPTO) on July 24, 2017 and assigned USPTO PROVISIONAL PATENT APPLICATION No. 62/536,143

In order to support a better understanding of the material, ARL has established the following website to host details on the technology and a review the process that will culminate in the granting of a patent license(s) around September 2018; www.arl.army.mil/AlNanogalvanicPowder. On this website, you can register your interest to be contacted about further developments, post general questions, learn about Inventor webex’s, and download background technical information, as well as, templates for all the require documents that will be used throughout the process.

FOR FURTHER INFORMATION CONTACT: After registering on the website above, requests for additional data, powder samples, and other inquiries can be directed to Brian

Metzger telephone: 406-994-7782, *brian.metzger@montana.edu*, TechLink, 2310 University Way Technology Blvd., Suite 2-2, Bozeman, MT 59715. TechLink is an authorized DoD partnership intermediary.

SUPPLEMENTARY INFORMATION:

Description of the Technology – Aluminum Based Nanogalvanic Alloys for Hydrogen Generation.

It has long been known that aluminum (Al) reacts with water to produce hydrogen (H₂) gas and aluminum oxide via a hydrolysis reaction. Aluminum metal oxidizes when in contact with water, rapidly producing a passivating oxide layer which prevents the hydrolysis reaction (evolution of H₂). Further, hydrolysis to evolve H₂ can only occur if the native oxide layer is actively removed. This is usually achieved by adding hazardous corrosive compounds (caustic soda, hydrochloric acid, etc.) which dissolve in water, toxic and expensive metals (such as gallium, platinum, etc.), or by forcing the reaction by additional external energy (electric current and/or superheated steam).

The U.S. Army Research Laboratory (ARL) has invented a novel nanogalvanic structured aluminum based particulate material which is capable of generating hydrogen very rapidly by hydrolysis reaction with water and any liquid that contains water (e.g. naturally scavenged water, coffee, energy drink, urine, etc.) at room temperature without chemicals, catalysts or externally supplied power. These patent pending powders produce hydrogen at a rate that currently is one of the fastest reported for Al and water reactions without the need of hazardous and costly materials or additional processes. The reaction results in the production of hydrogen and heat

with only inert residual materials. ARL has demonstrated that hydrolysis will occur with virtually any water containing liquid.

Licensing Process – The U.S. Army Research Laboratory intends to move expeditiously to license this provisional patent. The process will consist of two stages; Phase 1: Solicit Interest & Phase 2: Request for Patent License Application.

Phase 1 - Solicit Interest: Phase 1 will open on 18 JUN 2018. Companies may obtain technical information, samples, and speak with inventors for the purpose of technical due diligence.

Phase 2 - Request for Patent License Application: Phase 2 will open on 25 JUL 2018. Phase 2 will allow all interested parties to conduct an evaluation of the powder, ask the inventors questions about the non-provisional patent application, and work with TechLink to develop a National/Worldwide Commercialization Plan which will form the basis for the Patent License Application.

On or around 1 SEP 2018, the U.S. Army Research Laboratory will evaluate the Patent License Applications that have been received to date for possible granting of Patent License Agreement(s). In its decisions concerning the granting of license(s), the U.S. Army Research Laboratory will give special consideration to small business firms, and consortia involving small business firms. While the Army intends to insure that its licensed inventions are broadly commercialized throughout the United States, a PCT application is planned to be filed for the patent noted above. The Army intends that licensees interested in a license in Europe, Canada, China, and Japan will assume foreign prosecution and pay the costs of such prosecution.

(Authority: 35 U.S.C. 207, 37 CFR Part 404)

Collaborative Research Opportunity – The U.S. Army Research Laboratory is also open to engaging in negotiations with licensee(s) to establish a parallel Collaborative Research and Development Agreement to mutually continue the development of the material.

Brenda S. Bowen,
Army Federal Register Liaison Officer.
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