RECORD AND DISCLOSURE OF INVENTION

FOR USE BY NAVY INTELLECTUAL PROPERTY OFFICE	
DATE DISCLOSURE RECEIVED	NAVY CASE NO.

INSTRUCTIONS: A Navy employee should use this form when submitting an invention disclosure to the Department of the Navy. Fill each blank with the requested information or enter "NONE" as appropriate. Original and two copies should be printed or typed and forwarded to the intellectual property office responsible for providing services to your activity. Where space on the form is inadequate, enter "see attached page," use plain pages as needed, and identify item by number. When completely executed, this form becomes an important legal document useful in proving priority of invention. This form may also be used by a contractor or grantee for disclosing an invention to the Navy.

PART 1. RECORD OF INVENTION

1. INVENTOR(S)	ADDRESS	POSITION TITLE	EMPLOYER *(Activity & Code No., or Company & address)*
(b) (6)	(b) (6)	(b) (6)	NAVAIR / NAWCAD / Air 4.3.5.1

2. DESCRIPTIVE TITLE OF INVENTION

Piezoelectricity-induced Room Temperature Superconductor

3. CONCEPTION, INITIAL RECORDS AND RESULTS OF FIRST MODEL

a. EARLIEST DATE AND PLACE INVENTION WAS CONCEIVED *(Identify persons and records to support date and place)*

February 01, 2017 – (b) (6) work on Navy Case PAX 233 at NAVAIR, NAS Patuxent River.

b. DATE AND PRESENT LOCATION OF FIRST SKETCH, DRAWING OR PHOTO AND FIRST WRITTEN DESCRIPTION *(Such as notebook entries, etc.)*

N/A

c. DATE AND PLACE OF COMPLETION OF FIRST MODEL, PROTOTYPE, PRELIMINARY SYNTHESIS, FORMULATION, ETC., AND ITS PRESENT LOCATION

N/A

d. DATE AND PLACE OF FIRST TEST OR OPERATION AND THE RESULTS *(Give name and address of witnesses, and present location of records)*

N/A

4. OTHER RECORDS *(Notebook entries, descriptions, reports, drawings, etc.)*

IDENTIFICATION	DATE OF DOCUMENT	PRESENT LOCATION
N/A		

5. OTHER INDIVIDUALS TO WHOM INVENTION WAS DISCLOSED

NAME	ACTIVITY OR COMPANY INDIVIDUAL REPRESENTS	DATE DISCLOSED	TYPE *(oral or written disclosures)*
(b) (6)	NAVAIR CTO (Air 4.0T)	05-17-2017	written
	NAVAIR Office of Counsel	05-17-2017	written
	NAVAIR TTO	05-17-2017	written
	NAVAIR / NAWCAD	05-17-2017	written
	Air 4.3.5, 4.3T	05-17-2017	written
	Air 4.3.5.1	05-17-2017	written

6. DATE AND PLACE OF OTHER TESTS OR OPERATIONS, AND THE RESULTS *(List name and address of witnesses and identify present location of records)*

N/A

7. IDENTIFY ANY PAST, PRESENT OR CONTEMPLATED USE, SALE, OR PUBLICATION OF THE INVENTION

Informed (b) (6) [redacted] ournal of the theory (for verification) behind the invention, in writing (04/2017). Plan to publish theoretical and or experimental results if NISE BAR section 219 funding is obtained in FY'19.

8. LIST ANY CLOSELY RELATED PATENTS, PATENT APPLICATIONS AND PUBLICATIONS OF YOURS OR OTHER PERSONS

Claim 2 in patent filing "High Frequency Gravitational Wave Generator" Navy case PAX 233 - filed with the United States Patent & Trademark Office Serial # 15431823 on February 14, 2017. Pulsed electromagnetic radiation is used to enable room temperature superconductivity in special composite wiring.

PART II. DISCLOSURE OF INVENTION

Attach on separate sheets of paper a full and complete description of the invention, using the outline given below.

a. PURPOSE. State the purpose of the invention.

The invention discloses a system for achieving room temperature superconductivity (RTSC) in a current-carrying special composite 'metallic' wire.

This concept enables the transmission of electrical power without any losses, which leads to the design and development of novel energy generation and harvesting devices with enormous benefits to civilization.

b. BACKGROUND. Describe the old methods, materials or apparatus used to perform the purpose of the invention and give their limitations and disadvantages.

At this point in time, room temperature superconductors (at 300 deg. Kelvin or above) do not exist, to the best of my knowledge, after extensive research.

c. DESCRIPTION AND OPERATION. Describe clearly and completely the best mode of the invention and give a detailed description of its operation and use. Sketches, prints, photos, or other illustrations should be attached. In the description, use reference characters to refer to components in attached illustrations.

RTSC may be enabled in a current carrying-special composite 'metallic' wire which is abruptly vibrated by mechanical or electrical means. The wire is composed of a bulk (core) insulator with a 'thin' coating of a 'normal' metal (such as Aluminum), of a thickness on the order of the London penetration depth (micron-size, but possibly much thicker), considering an externally applied magnetic field. The current can be steady, or pulsed for maximum effect.

Strong electron-lattice interactions physically drive room temperature superconductivity, and the coupling between the electrons and the ion lattice is strengthened to a very high degree by abrupt / accelerated wire vibration.

For the electrically-driven vibration, the wire is coated with lead zirconate titanate ('poor' metal / ceramic), or any other material in which the piezoelectric effect can be induced. Since the RTSC supercurrent may possibly be generated along the metal / insulator interface (boundary), this wire configuration can be termed an unconventional superconductor.

d. ADVANTAGES AND NEW FEATURES. State the advantages of the invention over the old methods, materials or apparatus described in paragraph b. above, and the features believed to be new.

By using the Piezoelectric effect-based vibration in the lead zirconate titanate coated - insulator core composite wire, we can obtain much higher magnetic flux values with which to expel any externally applied magnetic fields, thus enabling the Meissner effect to a much higher degree than by using electromagnetic radiation to pulse the wire, as mentioned in item 8, above. This results in much higher chances of RTSC enablement.

e. ALTERNATIVES. Indicate any alternative methods, materials, or apparatus of the invention.

No alternatives in existence. At this point in time, room temperature superconductors (at 300 deg. Kelvin or above) do not exist, to my knowledge.

f. CONTRIBUTIONS BY INVENTORS. If this is a joint invention, indicate what contribution was made by each inventor.

Not Applicable – I am the sole inventor.

PART III. CERTIFICATION OF INVENTORS

I certify that the invention disclosed herein and in the attached documents is the ■ sole ☐ joint invention of the undersigned and that the statements and answers are true to my best knowledge and belief.

Date	Signature
05/18/2017	(b) (6) [redacted]

PART IV. CERTIFICATION OF WITNESSES

I certify that the invention described herein and in the attached documents has been disclosed to and understood by me.

Date	Signature	Business Address
5/18/17	(b) (6) [redacted]	[illegible]
Date	Signature	Business Address

NAVONR 5870/35 (6-96) (Reverse)