

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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**UNIVERSITY OF WATERLOO,**

Assignee of U.S. Patent Application No. 15/513,914

Petitioner,

v.

**SALIENT ENERGY INC.**

Assignee of U.S. Patent No. 9,780,412

Respondent.

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Case No.: \_\_\_\_\_

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**DECLARATION OF DIPAN KUNDU IN SUPPORT OF PETITION TO  
INSTITUTE DERIVATION PROCEEDING PURSUANT TO 35 U.S.C. § 135**

## Declaration of Dipan Kundu

I, Dipan Kundu, make the following declaration upon my knowledge and belief and hereby declare as follows:

### **I. PROFESSIONAL BACKGROUND**

1. I am a citizen of India and reside in Switzerland.
2. I am currently the SNSF Ambizione Group Leader in the Multifunctional Materials Laboratory, Department of Material at Eidgenössische Technische Hochschule Zürich (“ETH Zürich”). I have held this position since February of 2017.
3. In this capacity, my research focuses on the intersection of chemistry, materials science and electrochemistry, with a specific focus on materials development and their electrochemical evaluation for the advancement of safe, inexpensive, and high energy density non-aqueous and aqueous rechargeable batteries.
4. I received my PhD from ETH Zürich working on electroactive materials for lithium-ion batteries in 2012. After this, I joined the group of Dr. Linda F. Nazar at the University of Waterloo (“the Nazar Lab”) as a Postdoctoral Fellow where I focused on functional materials development toward improving the electrochemical performance characteristics of various

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rechargeable battery chemistries. I worked in the Nazar Lab from March 2013 to December 2016.

5. Below I discuss my activities as a Postdoctoral Fellow in the Nazar Lab at the University of Waterloo (“UW”) in the timeframe of 2013 through 2016. My responsibilities at the Nazar Lab included working under the supervision and direction of Dr. Nazar to design and develop novel cathode host materials for aqueous rechargeable batteries.
6. One such project related to Zn-ion battery technologies. This project resulted in the development of a low cost rechargeable Zn-ion battery based on a cathode comprised of nanostructured pillared hydrated vanadium oxides as robust materials for high rate and long term reversible  $Zn^{2+}$  ion intercalation storage at the cathode, that are coupled with a metallic Zn anode, and an aqueous electrolyte (the “Zn-Ion Battery”).

## **II. DOCUMENTS CONSIDERED**

7. I have reviewed the Exhibits listed below. Based on my work at UW, including my direct involvement in the development of the Zn-Ion Battery, I confirm that these Exhibits are true and accurate printed copies of documents retrieved, that they were kept in the course of the regularly conducted business and activity of the Nazar Lab, that they were generated and in existence on or

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about the dates indicated below or on the documents, and that I reviewed and had knowledge of each such document on or about the dates indicated.

|                 |  |
|-----------------|--|
| UW Exhibit 1009 | [REDACTED]   |
| UW Exhibit 1021 | Laboratory notebook excerpts, [REDACTED] from August 7 to September 25, 2014       |
| UW Exhibit 1022 | Laboratory notebook excerpts, [REDACTED] from September 15, 2014 to March 20, 2015 |
| UW Exhibit 1023 | Laboratory notebook excerpts from April 20 to May 30, 2015                         |

8. I have also reviewed the patents, patent applications and claims as mentioned below.

### **III. DEVELOPMENT BY UW OF THE Zn-ION BATTERY**

9. I am informed by counsel that U.S. Patent No. 9,780,412 (“the ’412 Patent”) (UW Exhibit 1001) is involved in a proceeding at the U.S. Patent Office. I am familiar with the ’412 Patent and its current claims. I understand that the ’412 Patent was originally filed as U.S. Patent Application No. 15/461,849 (“the ’849 Application”) and issued on October 3, 2017.
10. I understand that the UW Commercialization Office (“WATCO”) paid for and assisted with the filing of U.S. Provisional Patent Application No. 62/230,502 (“the Provisional Application”), which was entitled “Electrode Materials for Rechargeable Zinc Cells and Batteries Produced Therefrom.” (UW Exhibit

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1003.) I am aware that this Provisional Application was filed on June 8, 2015.

I am a named inventor on the Provisional Application.

11. I understand that a PCT Application (No. PCT/CA2016/050613) (“the PCT Application”) was filed on May 31, 2016, and was published as WO2016/197236 on December 15, 2016. (UW Exhibit 1004.) I am a named inventor on the PCT Application.
12. I understand that the PCT Application was relied on to file several subsequent U.S. Patent Applications, including the ‘849 Application and U.S. Patent Application No. 15/513,914 (“the ‘914 Application”) (UW Exhibit 1002). All of the Provisional Application, the PCT Application and the ‘914 Application were filed by agents of UW. However, the ‘849 Application was filed by agents of Salient Energy (“Salient”) without the consent of, consultation with or notice to UW.
13. I understand that I am a named inventor on the ‘914 Application (UW), the ‘849 Application (Salient), and resulting ‘412 Patent. However, I understand that Dr. Nazar was omitted as an inventor on the ‘849 Application and subsequent ‘412 Patent.
14. I understand that the claims of the ‘849 Application and resulting ‘412 Patent are the same as and encompassed in the claims of the ‘914 Application.

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