IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re *Inter Partes* Review of:	)
U.S. Patent No. 9,306,635	)
Issued: Apr. 5, 2016	)
Application No.: 13/752,169	)
Filing Date: Jan. 28, 2013	)

For: **Wireless Energy Transfer with Reduced Fields**

FILED VIA E2E

DECLARATION OF DR. DAVID ARNOLD IN SUPPORT OF PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 9,306,635

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I. Introduction and Qualifications

1. I have been retained by Momentum Dynamics Corp. ("Petitioner") to provide my opinion concerning the validity of U.S. Patent No. 9,306,635 (Ex. 1001) which I will refer to as "the '635 patent." I am being compensated for my time in connection with this IPR at my standard consulting rate of $625 per hour, regardless of the outcome of this matter.

2. I am currently the George Kirkland Engineering Leadership Professor in the Dept. of Electrical and Computer Engineering at the University of Florida. I have held a tenure-track professorial position at the University of Florida since 2005. I began as an Assistant Professor in 2005, was promoted with tenure to Associate Professor in 2010, was promoted to Full Professor in 2014, and was honored with the George Kirkland Engineering Leadership Professorship in 2016.

3. I teach graduate level classes in electrical engineering and supervise and mentor masters and doctoral candidates who perform research in various areas relating to wireless power transfer, including power/energy systems, power electronics, electromechanical transducers, magnetic materials, electromagnetics, and applied physics. I have supervised and mentored 20 Ph.D. students (3 current, 17 graduated), and 8 Postdoctoral Associates.

4. The focus of my research has been electromagnetic and energy systems, including wireless power transfer systems and their components for use

in consumer, industrial, scientific, healthcare, and other industries. In connection with this research, I have researched and developed power converters, power electronics, and systems compatible with alternative energy sources.

5. I am a Senior Member of the IEEE, including its Magnetics Society and Electron Devices Society. I have co-authored 215 peer-reviewed journal articles and conference publications in areas relating to wireless power transfer and its underlying concepts and technologies. I am currently on the editorial board of two scientific journals, *Micromachines* and the *Journal of Micromechanics and Microengineering*. From 2013-2019, I was also on the editorial board of *Energy Harvesting and Systems*. I also review submitted articles for various refereed journals including *IEEE Transactions on Power Electronics*, *IEEE Transactions on Industrial Electronics*, *IEEE Transactions on Antennas and Propagation, IEEE Transactions on Magnetics, Journal of Applied Physics, Applied Physics Letters,* and others.

6. I hold two Bachelor of Science degrees, one in Electrical Engineering and another in Computer Engineering, both from the University of Florida (May 1999). I also hold a Master of Science degree in Electrical and Computer Engineering from the University of Florida (December 2001) and a Ph.D. in Electrical and Computer Engineering from the Georgia Institute of Technology (December 2004).

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