

Declaration of Ming H. Wu, Ph.D.

**PETITIONER EDWARDS' EXHIBIT NO. 1002**

**DECLARATION OF MING H. WU, Ph.D.**

**PURSUANT TO 37 C.F.R. §§ 1.68, 42.63, AND 42.65**

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## I. BACKGROUND

1. I am over the age of 18 and a citizen of United States of America. My permanent residence is 1462 Voyager Drive, Tustin, California.

2. I have been asked by the law firm of Meunier Carlin & Curfman, LLC, on behalf of Edwards Lifesciences Corporation (“Edwards”), to provide my technical analysis and opinions regarding prior art references and technology relevant to U.S. Patent No. 6,306,141 to Jervis (“the ’141 Patent”).

3. More specifically, I have been asked to explain the physical and inherent properties of shape memory alloys (SMAs), including Nitinol, and to describe the state of technology with regard to Nitinol in the late 1970’s and early 1980’s. I have also been asked to determine whether references and patents publicly available at the time the priority application to the ’141 Patent was filed on October 14, 1983 disclose all of the limitations of Claims 1-22 of the ’141 Patent. Finally, I have been asked to review U.S. Patent No. 5,597,378 to Jervis (“the ’378 Patent”) to determine whether the claims of the ’141 Patent are distinguishable over the claims in that patent.

4. I am not receiving hourly compensation for my time spent working on this matter, nor have I received any additional compensation for the preparation of this report. I have no interest or stake in the outcome of this case aside from being

an Edwards' employee. Further, my compensation paid by to me by Edwards is completely unrelated to the outcome of this matter.

## II. MATERIALS REVIEWED

5. As part of my work on this declaration, I have reviewed documents provided to me by Meunier Carlin & Curfman in addition to publicly available documents and information. The documents that I have relied on to support my analysis and opinions contained in this declaration are cited herein.

## III. QUALIFICATIONS

6. My curriculum *vitae* is attached as **Exhibit 1003**. This is my first time serving as an expert witness, and I have never testified or provided a written report in any prior patent-related cases or proceedings.

7. I have been employed by Edwards since 2006 and am currently Vice President of Engineering. In that role, I manage both the Advanced Materials Technology and the Advanced Packaging Technology organizations. I provide both technical and managerial leaderships to the Advanced Materials Technology in early product concept development and prototyping, material testing and computational modeling to support Edwards' product innovation. The Advanced Packaging Technology organization engages in packaging design, testing and technology innovation to support Edwards' new product development and

sustaining operation. In my capacity at Edwards, I deal extensively with superelastic Nitinol shape memory alloys.

8. In 1977, I received my Bachelor of Science degree in Materials Science and Engineering from the National Tsing Hua University in Taiwan; in 1983, I received a Master of Science degree in Materials Science and Engineering from the University of Illinois at Urbana-Champaign; and in 1986, I received a Doctorate of Philosophy degree in Materials Science and Engineering from the University of Illinois at Urbana-Champaign. My focus during both my Masters and Doctorate studies related to phase transformations and the properties and characteristics of shape memory alloys.

9. After receiving my doctoral degree, I was an adjunct research professor at the Naval Postgraduate School at Monterey, California from 1985 to 1986. My postgraduate and postdoctoral research projects included studies of phase transformations in silver and copper based shape memory alloys as well as those in manganese-copper high damping alloys. These phase transformations were related to the shape memory properties and the acoustic damping effect of the materials.

10. I was employed by Memry Corporation from 1986 to 2006 in various positions of increasing responsibilities. From 1986 to 1996, I was Chief Metallurgist. In that role, I was responsible for developing fabrication and heat

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