

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent of Conley:

U.S. Patent No. 7,818,490

Issued: October 19, 2010

Title: PARTIAL BLOCK DATA
PROGRAMMING AND
READING OPERATIONS IN A
NON-VOLATILE MEMORY

Petition for *Inter Partes* Review

Attorney Docket No.:
337722-000080.490

Customer No.: 26379

Petitioner: Apple Inc.

Real Party in Interest: Apple Inc.

DECLARATION OF DR. VIVEK SUBRAMANIAN

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EXHIBITS

<u>Exhibit Number</u>	<u>Description</u>
1101	U.S. Patent 7,818,490 to Conley
1102	File History for U.S. Patent 7,818,490
1104	CV for Dr. Vivek Subramanian
1105	U.S. Patent No. 5,822,781 to Wells (“Wells”)
1106	U.S. Patent No. 5,457,658 to Nijima (“Nijima”)
1108	Flash Memories, edited by Cappelletti, et al (1999) (“Cappelletti”)
1109	PC Card Standard, Volumes 1 and 3 (1999) (“PC Card Standard”)
1110	PCT WO 99/35650 (“Hazen”)
1111	Designing With Flash Memory, Brian Dipert and Markus Levy (1994) (“Dipert”)

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A. Introduction

1. I, Vivek Subramanian, declare as follows:
2. I am making this Declaration at the request of Petitioner Apple Inc. regarding its Petitions for *Inter Partes* Review of U.S. Patent No. 7,818,490 (the “490 patent”).
3. I am being compensated for my work at my standard rate of \$550 per hour. My compensation does not depend on the outcome of this proceeding.
4. As part of my analysis, I reviewed the following materials:
 - Exhibit 1101 U.S. Patent 7,818,490 to Conley
 - Exhibit 1102 File History for U.S. Patent 6,818,490
 - Exhibit 1105 U.S. Patent No. 5,822,781 to Wells (“Wells”)
 - Exhibit 1106 U.S. Patent No. 5,457,658 to Nijima (“Nijima”)
 - Exhibit 1108 Flash Memories, edited by Cappelletti, et al (1999) (“Cappelletti”)
 - Exhibit 1109 PC Card Standard, Volumes 1 and 3 (1999) (“PC Card Standard”)
 - Exhibit 1110 PCT WO 99/35650 (“Hazen”)
 - Exhibit 1111 Designing With Flash Memory, Brian Dipert and Markus Levy (1994) (“Dipert”)

B. Relevant Background and Experience

5. My background and experience is summarized in my curriculum vitae, a true and correct copy of which is submitted as Exhibit 1104. Some of the relevant points are described below as well.

6. I received a B.S. in electrical engineering from Louisiana State University in 1994, an M.S. in electrical engineering from Stanford University in 1996, and a Ph.D. in electrical engineering from Stanford University in 1998.

7. In 1998, I co-founded Matrix Semiconductor, Inc. to develop high density memory technology.

8. I have been teaching in the Electrical Engineering and Computer Sciences Department at the University of California, Berkeley since 2000. I was an Assistant Professor from 2000 to 2005, an Associate Professor from 2005 to 2011, and a Professor from 2011 to the present.

9. I have been an adjunct professor at the Sunchon National University in Sunchon, Korea since 2009, leading research in printed electronics.

10. I have been an independent consultant in the semiconductor industry since 2000, focusing on memory technology, flexible electronics, and RFID technology.

11. I have published more than 200 technical papers in journals and at conferences.

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