

# EXHIBIT 2110

Filed on Behalf of Valencell, Inc.

By: Sanford E. Warren Jr. (SWarren@wriplaw.com)

R. Scott Rhoades ([SRhoades@wriplaw.com](mailto:SRhoades@wriplaw.com))

Warren Rhoades LLP

1212 Corporate Drive, Suite 250

Irving, Texas 75038

Tel: 972-550-2955

Fax: 469-442-0091

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

APPLE, INC.

Petitioner

v.

VALENCELL, INC.

Patent Owner

---

Case IPR2017-00318 - U.S. Patent No. 8,886,269

Case IPR2017-00317 – U.S. Patent No. 8,989,830

---

**DECLARATION OF ALBERT H. TITUS IN SUPPORT OF  
VALENCELL'S MOTIONS TO AMEND UNDER 37 C.F.R. § 42.121**

Mail Stop PATENT BOARD  
Patent Trial and Appeal Board  
U.S. Patent & Trademark Office  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

I, Albert Titus, declare as follows:

**I. INTRODUCTION**

***A. Engagement***

1. My name is Dr. Albert H. Titus. I have been asked to submit this declaration on behalf of Valencell, Inc. (“Valencell” or “Patent Owner”) in connection with Motions to Amend for U.S. Patent Nos 8,989,830 (“the ’830 patent”) and 8,886,269 (“the ’269 patent”).
2. I have been retained as a technical expert by Warren Rhoades LLP and Valencell to study and provide my opinions on the prior art related to the claim amendments for the ’830 patent and the ’269 patent. I have also been retained by Valencell and Bragalone Conroy PC to study and provide my opinions related to the Patent Owner’s Response for the IPRs involving the ’830 patent and the ’269 patent and I hereby incorporate by reference that Declaration.
3. As part of my study, I have reviewed and am familiar with the prior art and specifications of the ’830 patent and the ’269 patent.

***B. Background and Qualifications***

4. I expect to testify regarding my background, qualifications, and experience relevant to the issues in this proceeding.

5. I am a tenured, Full Professor of Biomedical Engineering at the University at Buffalo, The State University of New York. I am also the current Department Chair. My curriculum vitae (CV), has the complete outline of my experience, publications, patents, and related work. In these paragraphs, I highlight the experiences relevant to the topic at hand.

6. I earned a Bachelor of Science (BS) in Electrical Engineering and a Master of Science (MS) in Electrical Engineering from the University at Buffalo in 1989 and 1991, respectively. My MS thesis focused on optical pulse compression. In that work, I studied methods for generating ultra-short optical pulses using a laser source and optical fibers. I attended the Georgia Institute of Technology for my Ph.D. (in Electrical Engineering) and completed my degree in 1997. My Ph.D. research was centered around silicon-based vision systems. This work combined knowledge of biological visual systems, silicon-based transistor integrated electronics, and silicon-based photodetectors (the precursors to today's CMOS cameras). I was able to develop an integrated circuit ("chip") that combined processing circuitry and CMOS photodetectors to perform depth perception processing mimicking animals' visual systems.

7. After completing my Ph.D., I was a faculty member at the Rochester Institute of Technology where I taught numerous courses in Electrical Engineering. In 2001, I moved to the University at Buffalo. I continued my research into silicon visual processing and also moved into optical sensing for chemical and biological applications. In 2008, I was asked to help lead the development of a new department, the Department of Biomedical Engineering. This department was formed and I am currently the Department Chair.
8. My research and teaching activity has moved more into the biomedical field. I have numerous publications focused on sensing, and have six patents awarded and one additional patent pending. I have consulted with small companies and had sponsored research projects from various industry and federal sources.
9. I have developed and taught courses in biomedical instrumentation. One particular course I created and have taught one time is “Advanced Biomedical Electronics.” This course focuses on developing wearable electronic sensing devices for measuring different biosignals. The primary project of this course requires that student teams develop a

# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

## LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

## FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

## E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.