

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

EVERLIGHT ELECTRONICS CO. LTD
Petitioner

v.

DOCUMENT SECURITY SYSTEMS, INC.
Patent Owner

U.S. Patent No. 7,256,486

DECLARATION OF ERIC BRETSCHNEIDER PH.D
REGARDING U. S. PATENT NO. 7,256,486

I. INTRODUCTION

1. I, Eric Bretschneider, of 2622 Westwind Drive, Corinth, TX 76210 have been retained by Sughrue Mion, PLLC on behalf of Everlight Electronics Co. Ltd. to analyze U.S. Patent No. 7,256,486 (“the ’486 patent”) as well as certain prior art references, and what a person of ordinary skill in the art related to packaging for semiconductor based light emitting devices would have understood at the time the earliest application underlying the ’486 Patent was filed.

2. I am being compensated at my normal consulting rate of \$400 per hour. My compensation is in no way contingent on the outcome of this case, or on the conclusions I reach. I have no financial interest in any of the above parties.

3. I was asked to review and opine on the documents filed and positions taken in IPR2018-00333 filed by Seoul Semiconductor Co. Ltd et al., (“the SSC IPR”), including the Declaration of Michael Pecht Ph.D. and the exhibits cited therein.

4. This report summarizes the opinions I have formed to date. In general, as set forth below, I agree with most of the analysis and conclusions of Dr. Pecht.

5. For the sake of efficiency, I have incorporated parts of Dr. Pecht's analysis with which I agree, into this Declaration.

6. I reserve the right to modify my opinions, if necessary, based on further review and analysis of information that I receive subsequent to the filing of this report, including in response to positions taken by Document Security Systems, Inc. or its experts that I have not yet seen.

II. MY EXPERIENCE AND QUALIFICATIONS

7. I have over 25 years of experience with lighting and LEDs, including a comprehensive background on the full range of LED production technologies including MOCVD hardware/process design, LED chip fabrication, optical/thermal/mechanical design of LED packages, phosphor conversion, and testing/reliability of LED packages and LED fixtures.

8. I am currently the Chief Technology Officer at EB Designs & Technology. In that capacity, I am (among other things) responsible for the design and development of solid-state lighting technologies for clients ranging from startups to fortune 100 companies.

9. I am also current a member and Chair of the University of Florida Department of Chemical Engineering Advisory Board. I was the inaugural Conference Chair for LED Measurements and Standards. I am

also a member of a number of professional societies, including SPIE, Materials Research Society, Illuminating Engineering Society. Inside the Illuminating Engineering Society I am one of six members of the Science Advisory Panel and I am the current Chair of Subcommittee S which is responsible for all test and measurement standards related to solid-state lighting.

10. Prior to my position at EB Designs & Technology, I served as the Director of Engineering at HeathCo, LLC. In that capacity, I was responsible for advanced technology/product development related to solid-state lighting, sensors, notifications and control products.

11. Prior to my position as Director of Engineering at HeathCo, I was positioned at the Elec-Tech International Co., Ltd., a multi-billion dollar solid-state lighting startup company headquartered in mainland China. There I held the concurrent positions of Chief Engineer, ETi Lighting Research Institute and VP of Research and Development, ETi Solid State Lighting. In this capacity, my responsibilities included developing all technology and product roadmaps for markets in North America, China, Europe, and Japan.

12. In this role, I led and trained a staff of over 100 engineers, technicians and designers in the methods and procedures for designing

solid-state lighting products. This included determining spectral content, LED package reliability, thermal management, optical design, control integration and electrical drive circuits. I also had technical responsibility for LED die, package and light engine design for products intended for the domestic Chinese market as well as markets in Japan, North America and Europe.

13. Between 2004 and 2008, I was positioned at Toyoda Gosei North America, where I was a sales manager and was the sole technical support for Toyoda Gosei LED die and packages in the Western Hemisphere. My responsibilities included managing and developing LED die and package sales accounts in North America and Europe.

14. In my role as technical support for the Western Hemisphere, I provided knowledge and experience necessary for customers to use LED die and packages. With respect for LED die, this included aiding and supporting customers with optical and thermal design of LED packages as well as phosphor conversion materials and techniques. For LED packages, my responsibilities included testing protocols, reliability evaluation, as well as thermal and optical design of LED light engines and fixtures

15. Between 2003 and 2004, I was positioned at Beeman

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