

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LG ELECTRONICS, INC. and
LG ELECTRONICS U.S.A., INC.
Petitioners

v.

TOSHIBA SAMSUNG STORAGE TECHNOLOGY KOREA CORPORATION
Patent Owner

Patent No. RE43,106

DECLARATION OF MASUD MANSURIPUR, PH.D.

LG Electronics, Inc. et al.

EXHIBIT 1012

IPR Petition for

U.S. Patent No. RE43,106

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i.	<i>“An objective lens to form beam spots of different sizes using corresponding first and second light beams of respectively different wavelengths”</i>	44
ii.	<i>“an inner region including an optical center of the objective lens which has an optical property optimized to focus the first light beam onto a first optical recording medium of a first thicknesses and to focus the second light beam onto a second optical recording medium of a second thickness other than the first thickness”</i>	47
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1. My name is Masud Mansuripur. I am a Professor of Optical Sciences and Chair of Optical Data Storage in the College of Optical Sciences at the University of Arizona. I understand that my declaration is being submitted in connection with a Petition for *Inter Partes* Review of U.S. Patent No. RE43,106 (the “106 patent”) (Ex. 1001).

I. Qualifications, Background, and Experience

2. I received a Bachelor of Science degree in Electrical Engineering from Arya Mehr University (Iran) in 1977, a Master of Science degree in Electrical Engineering from Stanford University in 1978, a Master of Science degree in Mathematics from Stanford University in 1980, and a Ph.D. in Electrical Engineering from Stanford University in 1981.

3. I have authored four scientific and technical books and authored or co-authored over 250 scientific and technical journal articles; I am listed as an inventor on eight U.S. patents, of which six are directed to optical data storage, and I have over 30 years of experience with the optical data storage industry.

4. While a graduate student at Stanford University from 1978 to 1981, I worked as a consultant for Xerox Palo Alto Research Center (PARC) and also worked at Xerox Research Centre of Canada as a member of research staff. At Xerox, I was involved with developing a rewritable optical disc for massive storage of digital information. After receiving my Ph.D. degree from Stanford, I

joined the College of Engineering at Boston University, where I established a research program in Optical Data Storage. In 1988, the College of Optical Sciences at the University of Arizona invited me to join their newly-established Optical Data Storage Center, which was funded by IBM, Kodak, Philips-Dupont, Siemens, and the State of Arizona. Since 1988, I have worked as a Professor of Optical Sciences at the University of Arizona, devoting my time to teaching and research in optics, optical data storage, optical communication, and several other areas of modern science and technology.

5. I have been a technical advisory board member of Quinta Co., San Jose, California (1995-2000), DataPlay Co., Boulder, Colorado (1998-2002), Toptica Photonics, Munich, Germany (1999-present), NanoChip Co., San Jose, California (2003-07), and Polarizonics Co., Los Angeles, California (2005-06). I am also a member of the International advisory committee of the Instrument Technology Research Center (National Applied Research Laboratory), Taiwan (2008-present). These companies and organizations engage (or were engaged) in developing advanced optical data storage media and drives.

6. I am the Founder and President of MM Research, Inc. (www.mmresearch.com), Tucson, Arizona (founded in 1995), which develops and markets simulation software for the optical data storage industry. I was the Chief Optical Scientist at Capella Corp. from 2001-02, while on a 50% leave of absence

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