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LAM Research Corp.  
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8 UNITED STATES PATENT AND TRADEMARK OFFICE  
9 BEFORE THE PATENT TRIAL AND APPEAL BOARD  
10

11 LAM RESEARCH CORP.,	)	U.S. Patent No. 6,017,221
	)	Issued: January 5, 2000
12 Petitioner,	)	Named Inventor: Daniel L. Flamm
	)	Title: Process Depending On Plasma
13 v.	)	Discharges Sustained By Inductive
	)	Coupling
14 Daniel L. Flamm,	)	
	)	
15 Patent Owner.	)	
16 _____	)	
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19  
20 **DECLARATION OF MIYOKO TSUBAMOTO**  
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1 I, Miyoko Tsubamoto, declare as follows:

2 1. I am employed as a communications specialist and senior designer print/web  
3 at the Electrical Engineering and Computer Sciences ("EECS") department of the  
4 University of California at Berkeley ("UCB"). If called upon as a witness, I could  
5 competently testify to the truth of each statement herein.

6 2. Attached as Exhibit A hereto is is a true and correct copy of the following  
7 article:

- 8 • Michael A. Lieberman and Richard A. Gottscho, *Design of High-Density*  
9 *Plasma Sources for Materials Processing*, UNIVERSITY OF CALIFORNIA,  
10 BERKELEY TECHNICAL REPORT NO. UCB/ERL M93/3 (JANUARY 11, 1993).

11 3. The technical report in Exhibit A exists in the UCB EECS database of  
12 technical reports and is publicly available through UCB library services.

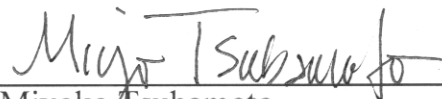
13 4. The article's catalog number, M93/3, indicates that the article was published  
14 and made publicly available by UCB library services as a technical report in 1993.

15 5. The date of January 11, 1993 shown on the cover of the report shows the  
16 date of the article that was made publicly available in 1993.

17 Executed August 10, 2015, at Berkeley, California.

18 I declare under penalty of perjury under the laws of the United States of America  
19 that the foregoing is true and correct to the best of my knowledge.

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# EXHIBIT A

44925.1

**DESIGN OF HIGH DENSITY PLASMA SOURCES  
FOR MATERIALS PROCESSING**

by

Michael A. Lieberman and Richard A. Gottscho

Memorandum No. UCB/ERL M93/3

11 January 1993

**ELECTRONICS RESEARCH LABORATORY**

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## **DESIGN OF HIGH DENSITY PLASMA SOURCES FOR MATERIALS PROCESSING**

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### **ABSTRACT**

**In this review article, we focus on recent advances in plasma source technology for materials processing applications. The motivation behind new source development is discussed along with the limitations of conventional radio frequency diode systems. Then the fundamental principles underlying electron heating in electron cyclotron resonance, helicon wave, inductively coupled, helical resonator, and surface wave plasmas are discussed with some attention to design issues. The transport of ions to device wafers and its influence on etching anisotropy is discussed for all sources. Similarly, we examine the benefits of using high density sources for minimizing plasma process induced damage and discuss in particular, the effects of plasma uniformity on charging damage.**

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