

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LAM RESEARCH CORP.,
Petitioner,

v.

DANIEL L. FLAMM,
Patent Owner.

Case IPR2016-00470
Patent RE40,264 E

Before MICHAEL R. ZECHER, CHRISTOPHER L. CRUMBLEY, and
JO-ANNE M. KOKOSKI, *Administrative Patent Judges*.

ZECHER, *Administrative Patent Judge*.

DECISION

Denying Institution of *Inter Partes* Review
35 U.S.C. § 314(a) and 37 C.F.R. § 42.108

I. INTRODUCTION

Petitioner, Lam Research Corporation (“Lam”), filed a Petition requesting an *inter partes* review of claims 27–50, 66, and 67 (“the challenged claims”) of U.S. Patent No. RE40,264 E (Ex. 1001, “the ’264 patent”). Paper 1 (“Pet.”). Patent Owner, Daniel L. Flamm (“Flamm”), filed a Preliminary Response. Paper 5 (“Prelim. Resp.”).

Under 35 U.S.C. § 314(a), an *inter partes* review may not be instituted unless the information presented in the Petition shows “there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” Taking into account the arguments presented in Flamm’s Preliminary Response, we conclude that the information presented in the Petition does not establish that there is a reasonable likelihood that Lam would prevail in challenging any of claims 27–50, 66, and 67 of the ’264 patent as unpatentable under 35 U.S.C. § 103(a). We, therefore, *deny* the Petition.

A. Related Matters

The parties represent that the ’264 patent is presently at issue in a declaratory judgment action captioned *Lam Research Corp. v. Daniel L. Flamm*, No. 5:15-cv-01277-BLF (N.D. Cal.), and in an infringement action captioned *Daniel L. Flamm v. Samsung Electronics Co.*, No. 1:15-cv-00613-LY (W.D. Tex.). Pet. 2; Paper 4, 1.

In addition to this Petition, Lam also filed other petitions challenging the patentability of certain subsets of claims of the ’264 patent in the following cases: (1) Case IPR2015-01759; (2) Case IPR2015-01764; (3) Case IPR2015-01766; (4) Case IPR2015-01768; (5) Case IPR2016-00468;

and (6) Case IPR2016-00469. Pet. 2. To date, another panel of the Board has entered a Decision Denying Institution in each of Cases IPR2015-01759 and IPR2015-01766, and a Decision Granting Institution in each of Cases IPR2015-01764 and IPR2015-01768.

B. The '264 Patent

The '264 patent, titled "Multi-Temperature Processing," reissued April 29, 2008, from U.S. Patent Application No. 10/439,245 ("the '245 application"), filed on May 14, 2003. Ex. 1001, at [54], [45], [21], [22]. The '264 patent is a reissue of U.S. Patent No. 6,231,776 B1 ("the '776 patent"), which issued May 15, 2001, from U.S. Patent Application No. 09/151,163 ("the '163 application"), filed September 10, 1998. *Id.* at [64]. The '264 patent is directed to a method "for etching a substrate in the manufacture of a device," where the method "provide[s] different processing temperatures during an etching process or the like." Ex. 1001, Abstract. The apparatus used in the method is shown in Figure 1, reproduced below.

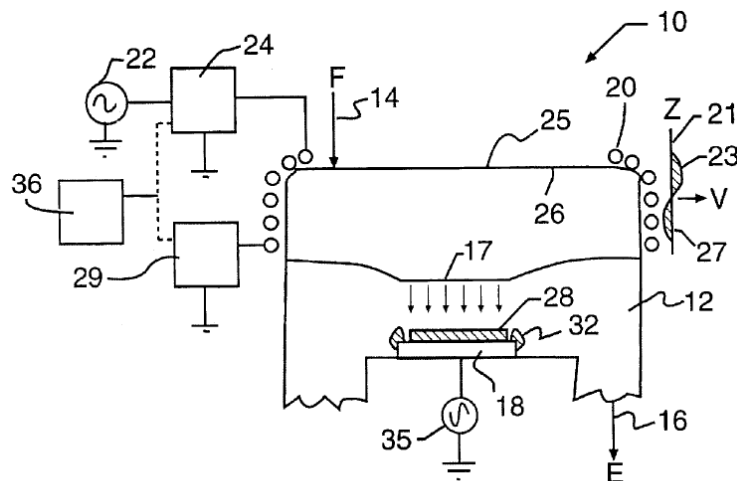
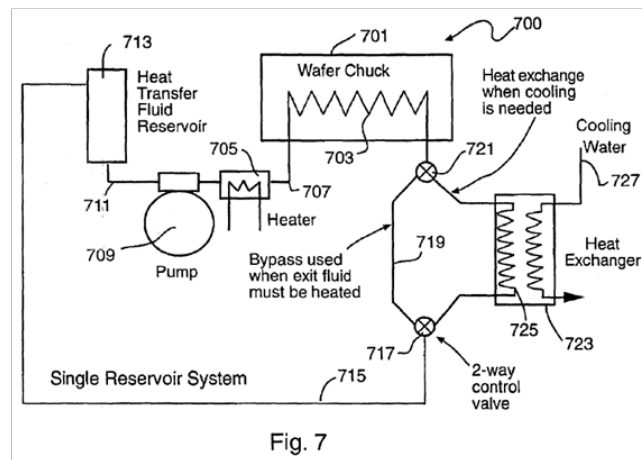
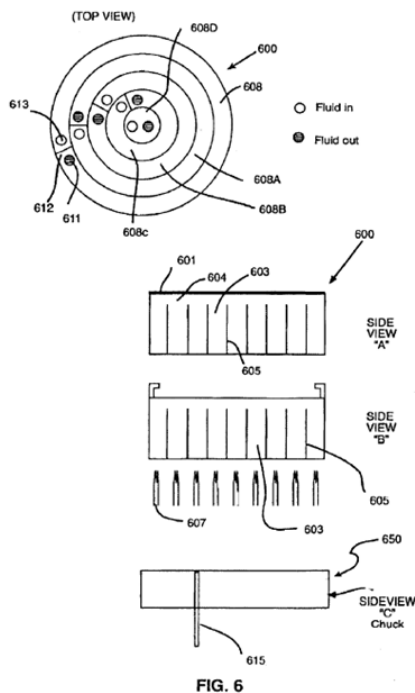


FIG. 1

Figure 1 depicts a substrate (product 28, such as a wafer to be etched) on a substrate holder (product support chuck or pedestal 18) in a chamber

(chamber 12 of plasma etch apparatus 10). *Id.* at 3:24–25, 3:32–33, 3:40–41.

Figures 6 and 7, reproduced below, depict a temperature-controlled substrate holder and temperature control systems.



Figures 6 and 7 depict temperature-controlled fluid flowing through substrate holder (600, 701), guided by baffles 605, where “[t]he fluid [is] used to heat or cool the upper surface of the substrate holder.” Ex. 1001, 14:28–63, 16:5–67. Figure 6 also depicts heating elements 607 underneath the substrate holder, where “[t]he heating elements can selectively heat one or more zones in a desirable manner.” *Id.* at 15:10–26. Referring to Figure 7, the operation of the temperature control system is described as follows:

The desired fluid temperature is determined by comparing the desired wafer or wafer chuck set point temperature to a measured wafer or wafer chuck temperature The heat exchanger, fluid flow rate, coolant-side fluid temperature, heater power, chuck, etc. should be designed using conventional means to permit the

heater to bring the fluid to a setpoint temperature and bring the temperature of the chuck and wafer to predetermined temperatures within specified time intervals and within specified uniformity limits.

Id. at 16:36–39, 16:50–67.

An example of a semiconductor substrate to be patterned is shown in Figure 9, reproduced below.

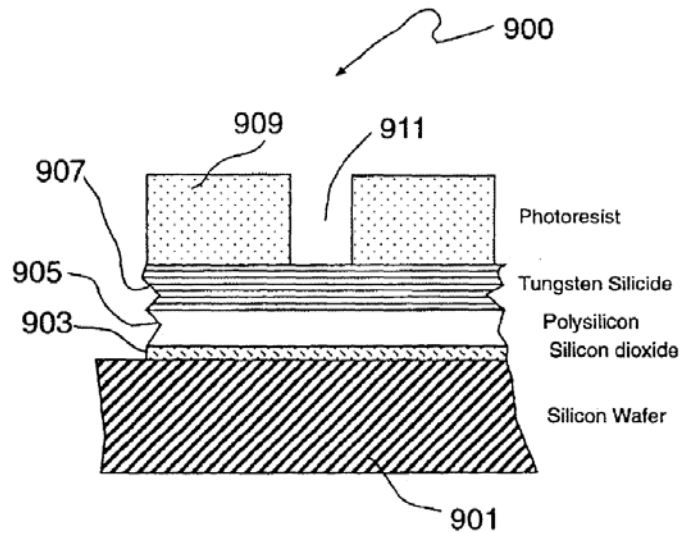


Figure 9 depicts substrate 901 having a stack of layers including oxide layer 903, polysilicon layer 905, tungsten silicide layer 907, and photoresist masking layer 909 with opening 911, from the treatment method shown in Figure 10, reproduced below. Ex. 1001, 17:58–18:57.

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