

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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SAMSUNG ELECTRONICS CO., LTD.,  
Petitioner,

v.

DANIEL L. FLAMM,  
Patent Owner.

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Case IPR2016-01512  
Patent RE40,264 E

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

ZECHER, *Administrative Patent Judge*.

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

## I. INTRODUCTION

Petitioner, Samsung Electronics Co., Ltd. (“Samsung”), filed a Petition requesting an *inter partes* review of claims 27, 31, 32, 34, 37, 40, 41, 44, 47, 48, and 50 (“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 establishes that there is a reasonable likelihood that Samsung would prevail in challenging claims 27, 31, 32, 34, 37, 40, 41, 44, 47, 48, and 50 of the ’264 patent as unpatentable under 35 U.S.C. § 103(a). Pursuant to § 314, we hereby institute an *inter partes* review as to these claims of the ’264 patent.

### A. Related Matters

The parties represent that the ’264 patent is at issue in a district court case captioned *Flamm v. Samsung Electronics Co.*, No. 1:15-cv-613-LY (W.D. Tex.), which was transferred to the Northern District of California on April 27, 2016 and re-captioned No. 5:16-cv-2252-BLF (N.D. Cal.). Pet. 1; Paper 4, 2. Samsung further represents that the ’264 patent was at issue in a number of *inter partes* review proceedings filed by a different petitioner; however, the Board only granted institution in two proceedings, each of

which has since terminated following settlement. *See* Pet. 1 n.1. In addition to this Petition, Samsung filed another petition challenging the patentability of claims 13–26, 64, and 65 of the '264 patent in Case IPR2016-01510. *Id.* at 1.

### 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.” *Id.* at Abstract. The apparatus used in the method is shown in Figure 1, reproduced below.

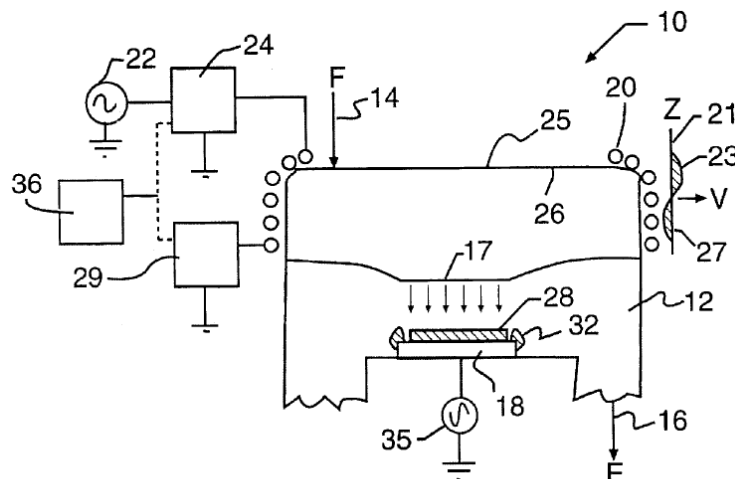


FIG. 1

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.

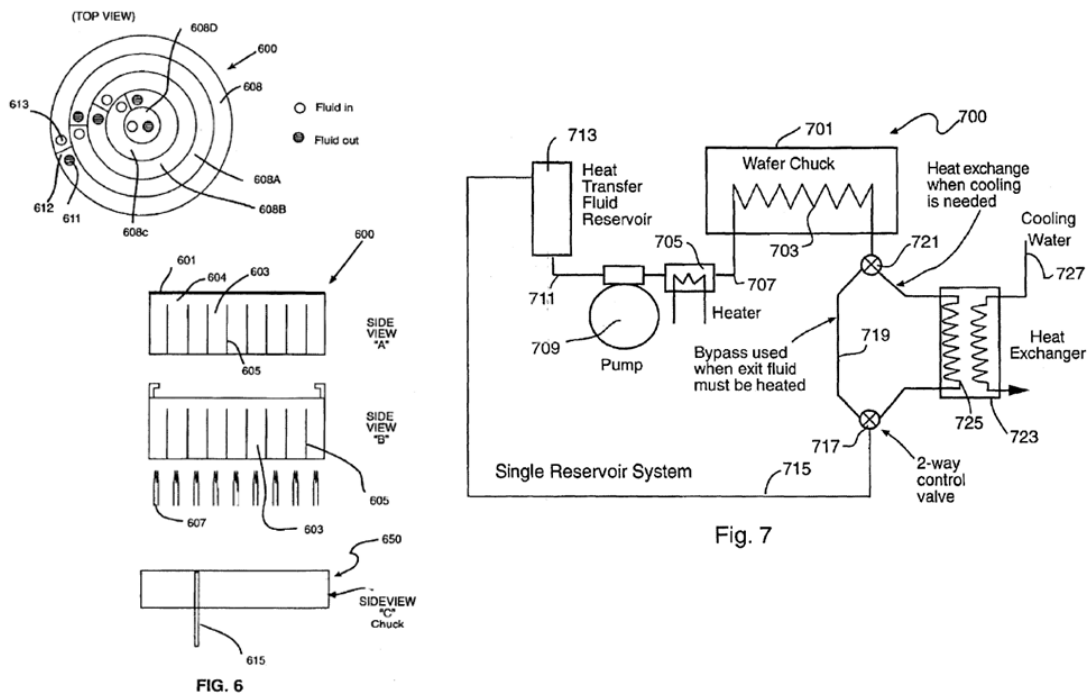


Fig. 7

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.

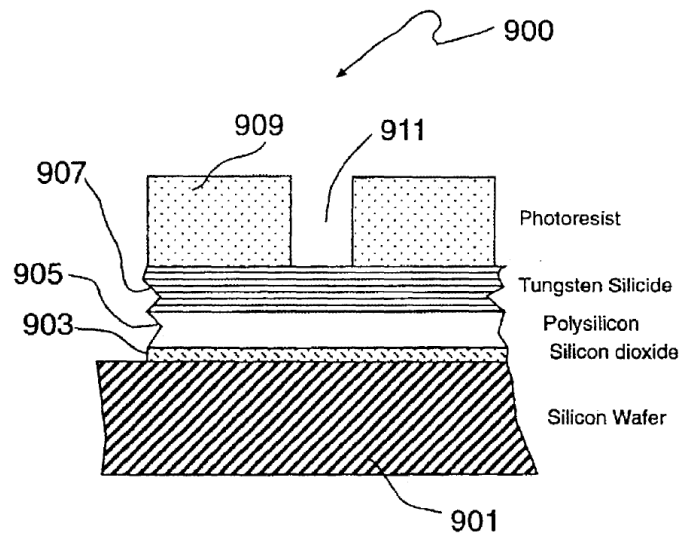


Figure 9 depicts substrate 901 having a stack of layers including oxide layer 903, polysilicon layer 905, tungsten silicide layer 907, and photoresist masking layer 909 with opening 911, from the treatment method shown in Figure 10, reproduced below. Ex. 1001, 17:58–18:57.

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