

PUBLIC VERSION (NON-CONFIDENTIAL)

**PROTECTIVE ORDER MATERIAL**

**THIS DOCUMENT CONTAINS TECHNICAL DATA CONTROLLED UNDER THE INTERNATIONAL TRAFFIC IN ARMS REGULATIONS (ITAR) AND MAY NOT BE EXPORTED, REEXPORTED, TEMPORARILY IMPORTED, TRANSFERRED, OR RETRANSFERRED TO ANY NON-U.S. PERSON, COUNTRY OR ENTITY, BY ANY MEANS, WITHOUT THE APPROPRIATE APPROVAL OF THE U.S. DEPARTMENT OF STATE, DIRECTORATE OF DEFENSE TRADE CONTROLS (DDTC)**

UNITED STATES PATENT AND TRADEMARK OFFICE

---

**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

---

*SONY CORPORATION,*  
Petitioner

v.

*RAYTHEON COMPANY,*  
Patent Owner

---

**Case IPR2015-01201**

**Patent 5,591,678**

---

**PATENT OWNER'S RESPONSE**

TABLE OF CONTENTS

I. INTRODUCTION ..... 1

II. SUMMARY OF ARGUMENTS ..... 1

    A. The Challenged Claims Are Patentable Over Bertin ..... 2

    B. The Challenged Claims are Patentable over Morimoto ..... 3

III. THE '678 PATENT ..... 3

    A. Background Regarding '678 Patent and Technology ..... 3

        [REDACTED] ..... 6

    C. Level of Ordinary Skill in the Art ..... 19

IV. THE '678 PATENT IS PATENTABLE..... 20

    A. Legal Standards ..... 20

        1. Anticipation ..... 20

        2. Obviousness..... 21

        3. Invention Prior to a §102(e) Reference ..... 22

    B. The Challenged Claims Are Patentable over Bertin ..... 24

        [REDACTED] ..... 24

        [REDACTED] ..... 30

    C. The Challenged Claims are Patentable over Morimoto ..... 31

        1. Morimoto Fails to Disclose or Suggest Etching ..... 33

        2. CMP and Etching are Not Interchangeable ..... 36

            a. CMP and Etching Have Different Selectivity..... 38

            b. CMP and Etching Result in Different Roughness of Substrates ..... 39

            c. CMP and Etching Result in Different Degrees of Contamination..... 40

            d. CMP and Etching Speeds Are Different..... 40

PUBLIC VERSION (NON-CONFIDENTIAL)

e.	CMP and Etching Involve Different Uniformity of Removal Across the Wafer.....	41
3.	Morimoto Does Not Disclose an Etch-Stop Layer .....	42
4.	Ground 4: A PHOSITA Would Not Combine Morimoto with the “CMP/Etching” References .....	46
a.	Hamaguchi.....	47
b.	Yu.....	50
c.	Cote .....	51
d.	Poon.....	52
e.	Sandhu .....	53
f.	Kusunoki .....	55
g.	Miura .....	56
5.	Claim Analysis .....	57
a.	Claim 1 .....	57
b.	Dependent Claims 2, 4-5, and 10 .....	58
c.	Claim 13 .....	58
d.	Dependent Claims 14 and 16-17 .....	59
6.	A PHOSITA Would Not Combine Morimoto with Oldham .....	59
7.	A PHOSITA Would Not Combine Morimoto with the “CMP / Etching References” and Bertin.....	60
V.	CONCLUSION .....	60

**TABLE OF AUTHORITIES**

	<b>Page(s)</b>
<b>CASES</b>	
<i>Burroughs Wellcome Co. v. Barr Labs., Inc.</i> , 40 F.3d 1223 (Fed. Cir. 1994).....	23
<i>Continental Can Co. v. Monsanto Co.</i> , 948 F.2d 1264 (Fed. Cir. 1991).....	20
<i>Cooper v. Goldfarb</i> , 154 F.3d 1321 (Fed. Cir. 1998).....	22, 26
<i>Crown Operations Int'l, Ltd. v. Solutia Inc.</i> , 289 F.3d 1367 (Fed. Cir. 2002).....	20
<i>Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.</i> , 800 F.3d 1375 (Fed. Cir. 2015).....	22, 23
<i>Eli Lilly &amp; Co. v. Zenith Goldline Pharms., Inc.</i> , 471 F.3d 1369 (Fed. Cir. 2006).....	21
<i>In re Brouwer</i> , 77 F.3d 422 (Fed. Cir. 1996).....	21
<i>In re NTP, Inc.</i> , 654 F.3d 1279 (Fed. Cir. 2011).....	21
<i>In re Robertson</i> , 169 F.3d 743 (Fed. Cir. 1999).....	20
<i>In re Spiller</i> , 500 F.2d 1170 (CCPA 1974) .....	23, 30
<i>KSR Int'l Co. v. Teleflex Inc.</i> , 550 U.S. 398 (2007).....	21
<i>Mahurkar v. C.R. Bard</i> , 79 F.3d 1572 (Fed. Cir. 1996).....	passim
<i>McGinley v. Franklin Sports, Inc.</i> , 262 F.3d 1339 (Fed. Cir. 2001).....	22

PUBLIC VERSION (NON-CONFIDENTIAL)

*Panduit Corp. v. Dennison Mfg. Co.*,  
810 F.2d 1561 (Fed. Cir. 1987).....46, 60

*Ruiz v. A.B. Chance Co.*,  
234 F.3d 654 (Fed. Cir. 2000).....21

*Scripps Clinic & Research Found. v. Genentech, Inc.*,  
927 F.2d 1565 (Fed. Cir. 1991).....20

*Tech. Licensing Corp. v. Videotek, Inc.*,  
545 F.3d 1316 (Fed. Cir. 2008).....23

**STATUTES**

35 U.S.C. §102 .....22

35 U.S.C. § 102(e) .....passim

35 U.S.C. §316(e).....23

# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

## LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

## FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

## E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.