

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG DISPLAY CO., LTD.,
Petitioner,

v.

SOLAS OLED, LTD.,
Patent Owner.

Case No. IPR2020-00320
U.S. Patent No. 7,446,338

**PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 7,446,338
UNDER 35 U.S.C. §§ 311–319 AND 37 C.F.R. § 42.100 *et seq.***

LIST OF EXHIBITS

Exhibit	Description
1001	U.S. Patent No. 7,446,338 (the “338 patent”)
1002	File History for U.S. Patent No. 7,446,338
1003	U.S. Patent Application Pub. No. 2002/0158835 (“Kobayashi”)
1004	U.S. Patent Application Pub. No. 2004/0113873 (“Shirasaki”)
1005	International Publication No. WO 03/079441 (“Childs”)
1006	European Patent Application No. EP 1331666 (“Yamazaki”)
1007	U.S. Patent Application Pub. No. 2004/0165003 (“Shirasaki II”)
1008	Japanese Patent Publication No. 2004-258172
1009	U.S. Patent Application Pub. No. 2003/0151637 (“Nakamura”)
1010	International Publication No. WO 03/079442 (“Hector”)
1011	International Publication No. WO 03/079449 (“Young”)
1012	Tsujimura, Takatoshi. <i>OLED Display Fundamentals and Applications: Fundamentals and Applications</i> , John Wiley & Sons, Incorporated, 2012. (“Tsujimura”)
1013	Crawford, Gregory P. <i>Flexible flat panel display technology</i> . Vol. 3. West Sussex: Wiley, 2005. (“Crawford”)
1014	U.S. Patent Application Pub. No. 2003/0127657 (“Park”)
1015	U.S. Patent No. 7,498,733 (“Shimoda”)
1016	U.S. Patent Application Pub. No. 2002/0000576 (“Inukai”)
1017	U.S. Patent Application Pub. No. 2002/0009538 (“Arai”)
1018	Declaration of Dr. Adam Fontecchio
1019	<i>Curriculum Vitae</i> of Adam Fontecchio

Table of Contents

I.	Introduction.....	4
II.	Standing, Mandatory Notices, and Fee Authorization	9
III.	Summary of Challenge	10
IV.	Overview of the '338 Patent.....	12
	A. “Interconnections Which Are Formed to Project from a Surface of the Transistor Array Substrate”	14
	B. “Driving Transistor,” “Switch Transistor,” and “Holding Transistor”	18
	C. Prosecution History	19
V.	Level of Ordinary Skill.....	21
VI.	Claim Construction.....	21
	A. “transistor array substrate” (claim 1)	21
	B. “a plurality of interconnections which are formed to project from a surface of the transistor array substrate” (claim 1).....	23
	C. “the pixel electrodes being arrayed along the interconnections between the interconnections on the surface of the transistor array substrate” (claim 1)	25
VII.	Overview of the Prior Art.....	26
	A. Kobayashi (Ex. 1003).....	29
	B. Shirasaki (Ex. 1004)	32
	C. Childs (Ex. 1005)	34
VIII.	Application of Prior Art to the Challenged Claims	37
	A. Ground I: Claims 1–2, 5–6, and 9–11 Are Unpatentable Under 35 U.S.C. § 103 Over the Combination of Kobayashi and Shirasaki.	38

1.	Claim 1	39
2.	Claim 2	58
3.	Claim 5	58
4.	Claim 6	59
5.	Claim 9	60
6.	Claim 10	61
7.	Claim 11	62
B.	Ground II: Claims 1–3 and 5–13 Are Unpatentable Under 35 U.S.C. § 103 Over the Combination of Childs and Shirasaki.....	63
1.	Claim 1	64
2.	Claim 2	82
3.	Claim 3	84
4.	Claim 5	86
5.	Claim 6	87
6.	Claim 7	87
7.	Claim 8	88
8.	Claim 9	88
9.	Claim 10	88
10.	Claim 11	90
11.	Claim 12	91
12.	Claim 13	92
IX.	Conclusion	93

I. INTRODUCTION

Samsung Display Co., Ltd. (“Petitioner”) petitions for *inter partes* review seeking cancellation of claims 1–3 and 5–13 of U.S. Patent No. 7,446,338 (Ex. 1001, “’338 patent”), assigned to Solas OLED, Ltd. (“Patent Owner”).

The ’338 patent relates to active-matrix organic light-emitting diode (AMOLED) display panels. Ex. 1001, 1:51–65, 4:53–56, 5:51–53. The patent is directed to AMOLED displays having two purportedly distinctive features: (1) conductive “interconnections” that project from the surface of the substrate on which the OLED elements are formed, *id.*, 2:42–44, 3:63–67; and (2) a specific circuit to drive each pixel in the OLED device made up of three thin-film transistors (“TFTs”), *id.*, 6:45–7:18.

Regarding the first feature, the ’338 patent describes and claims three types of projecting “interconnections” (“feed,” “select,” and “common”):

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.