

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD.,
SAMSUNG ELECTRONICS AMERICA, INC.,
Petitioners,

v.

NANOCO TECHNOLOGIES LTD.,
Patent Owner.

Case No. IPR2021-00186
U.S. Patent No. 8,524,365

PATENT OWNER'S SUR-REPLY

TABLE OF CONTENTS

I. INTRODUCTION 1

II. PETITIONER HAS NOT PROVED THAT THE CHALLENGED CLAIMS ARE UNPATENTABLE2

 A. Grounds 1 and 2: No Claims Are Anticipated or Rendered Obvious by Banin.....2

 1. All Issues Identified for Trial Resolve in Patent Owner’s Favor2

 2. Banin’s SLS Gold Catalyst Is Not a MCC4

 a. Banin’s polydisperse gold catalysts are not further size-selected.....5

 b. It is improper to ignore that Banin uses Hutchison’s process.....9

 c. Petitioner’s remaining critiques are unavailing.....10

 B. Ground 3: No Claims Are Rendered Obvious by Banin in View of Herron16

 C. Ground 4: Claims 13 and 14 Are Not Rendered Obvious by Banin in View of Treadway20

 D. Ground 5: No Claims Are Rendered Obvious by Zaban in View of Farneth and Yu.....21

 E. Grounds 6 and 7: No Claims Are Rendered Obvious by Lucey in View of Ahrenkiel.....24

III. CONCLUSION.....26

TABLE OF AUTHORITIES

	Page(s)
Cases	
<i>Amgen Inc. v. Hoechst Marion Roussel</i> , 314 F.3d 1313 (Fed. Cir. 2003)	9
<i>Apotex Inc. v. Wyeth LLC</i> , 657 Fed. Appx. 998 (Fed. Cir. 2016).....	17
<i>FanDuel, Inc. v. Interactive Games LLC</i> , 966 F.3d 1334 (Fed. Cir. 2020)	4
<i>Husky Injection Molding Sys. v. Athena Automation Ltd.</i> , 838 F.3d 1236 (Fed. Cir. 2016)	9
<i>In re Magnum Oil Tools Int'l, Ltd.</i> , 829 F.3d 1364 (Fed. Cir. 2016)	4
<i>In re Vaeck</i> , 947 F.2d 488 (Fed. Cir. 1991)	17
<i>In re Warsaw Orthopedic, Inc.</i> , 832 F.3d 1327 (Fed. Cir. 2016)	9
<i>Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.</i> , 821 F.3d 1359 (Fed. Cir. 2016)	5, 17, 24
<i>Kinetic Concepts, Inc. v. Smith & Nephew, Inc.</i> , 688 F.3d 1342 (Fed. Cir. 2012)	19
<i>Plant Genetic Sys. v. DeKalb Genetics Corp.</i> , 315 F.3d 1335 (Fed. Cir. 2003)	19
<i>Samsung Elecs. Co. v. Elm 3DS Innovations, LLC</i> , 925 F.3d 1373 (Fed. Cir. 2019)	17, 24
<i>Samsung Elecs. Co. v. Infobridge Pte. Ltd.</i> , IPR2017-00099, 2020 Pat. App. Lexis 12824, (PTAB Nov. 13, 2020)	5

Trivascular, Inc. v. Samuels,
812 F.3d 1056 (Fed. Cir. 2016)20

Statutes

35 U.S.C. § 316(e)4

Other Authorities

37 CFR § 42.24(d)27

TABLE OF EXHIBITS

Exhibit	Description
2001	Declaration of Michael C. Newman
2002	Declaration of Thomas H. Wintner
2003	Declaration of Matthew S. Galica
2004	Periodic table of the elements, Encyclopaedia Britannica, Inc., <i>available at</i> https://www.britannica.com/science/periodic-table (last visited Feb. 18, 2021)
2005	Samsung Global Newsroom. Quantum Dot Artisan: Dr. Eunjoo Jang, Samsung Fellow, November 30, 2017
2006	ACS Energy Lett. 2020, 5, 1316-1327. “Environmentally Friendly InP-Based Quantum Dots for Efficient Wide Color Gamut Displays”
2007	Wang, F., Dong, A. and Buhro, W.E., <i>Solution–liquid–solid synthesis, properties, and applications of one-dimensional colloidal semiconductor nanorods and nanowires</i> . Chemical Reviews, 116(18):10888-10933 (2016).
2008	Wang, F., et al., <i>Solution– liquid– solid growth of semiconductor nanowires</i> . Inorganic chemistry, 45(19):7511-7521 (2006).
2009	Madkour, L.H., <i>Synthesis Methods For 2D Nanostructured Materials, Nanoparticles (NPs), Nanotubes (NTs) and Nanowires (NWs)</i> . In <i>Nanoelectronic Materials</i> (pp. 393-456). Springer, Cham. (2019)
2010	Mushonga, P., et al., <i>Indium phosphide-based semiconductor nanocrystals and their applications</i> . Journal of Nanomaterials, 1-11 (2012).
2011	Luo, H., <i>Understanding and controlling defects in quantum confined semiconductor systems</i> , Doctoral dissertation, Kansas State University (2016).
2012	Sinatra, L., et al. <i>Methods of synthesizing monodisperse colloidal quantum dots</i> . Material Matters, 12:3-7 (2017)
2013	Pu, Y., et al., <i>Colloidal synthesis of semiconductor quantum dots toward large-scale production: a review</i> . Industrial & Engineering Chemistry Research, 57(6):1790-1802 (2018).
2014	Rao, C. N. R.; Gopalakrishnan, J., <i>Chapter 3: Preparative Strategies from New Directions in Solid State Chemistry</i> ; Cambridge University Press: Cambridge, UK (1986).

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.