

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

EPAS ID: PAT6866356

<b>SUBMISSION TYPE:</b>	RESUBMISSION
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>RESUBMIT DOCUMENT ID:</b>	506629395
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
E.I. DU PONT DE NEMOURS AND COMPANY	04/11/2019
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	LG CHEM, LTD.
<b>Street Address:</b>	128, YEOUI-DAERO
<b>Internal Address:</b>	YEONGDEUNGPO-GU
<b>City:</b>	SEOUL
<b>State/Country:</b>	KOREA, REPUBLIC OF
<b>Postal Code:</b>	07336
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
Application Number:	16277331
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(908)654-7866
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>	
<b>Phone:</b>	(908) 654-5000
<b>Email:</b>	assignment@lerner david.com
<b>Correspondent Name:</b>	LERNER, DAVID, LITTENBERG, KRUMHOLZ & MENTLIK, LLP
<b>Address Line 1:</b>	20 COMMERCE DR.
<b>Address Line 4:</b>	CRANFORD, NEW JERSEY 07016
<b>ATTORNEY DOCKET NUMBER:</b>	LGCHEM 3.0F-1869 CON
<b>NAME OF SUBMITTER:</b>	KATHLEEN REYNOLDS
<b>SIGNATURE:</b>	/Kathleen Reynolds/
<b>DATE SIGNED:</b>	08/16/2021
<b>Total Attachments: 58</b>	
source=Assignment Between Dupont and LGCHEM (Corrected)#page1.tif	
source=Assignment Between Dupont and LGCHEM (Corrected)#page2.tif	
source=Assignment Between Dupont and LGCHEM (Corrected)#page3.tif	
source=Assignment Between Dupont and LGCHEM (Corrected)#page4.tif	



source=Assignment Between Dupont and LGCHEM (Corrected)#page53.tif

source=Assignment Between Dupont and LGCHEM (Corrected)#page54.tif

source=Assignment Between Dupont and LGCHEM (Corrected)#page55.tif

source=Assignment Between Dupont and LGCHEM (Corrected)#page56.tif

source=Assignment Between Dupont and LGCHEM (Corrected)#page57.tif

source=Assignment Between Dupont and LGCHEM (Corrected)#page58.tif

### FORM OF PATENT ASSIGNMENT

This PATENT ASSIGNMENT (this "Assignment") is made as of the 11<sup>th</sup> day of April, 2011, by and between E. I. du Pont de Nemours and Company, a Delaware corporation having a place of business at Chestnut Run Plaza, 974 Centre Road, P.O. Box 2915, Wilmington, Delaware, 19805, USA, and DuPont Displays, Inc., a California corporation having a place of business at Chestnut Run Plaza, 974 Centre Road, Wilmington, Delaware, 19805, USA (each, an "Assignor" and collectively, the "Assignors") and LG Chem, Ltd., a corporation organized and existing under the laws of Korea and having a place of business at LG Twin Towers, 128 Yeou-daero Yeongdeungpo-gu, Seoul 07336, Korea ("Assignee"), each of DuPont, DuPont Subsidiary and Buyer are currently active and duly existing.

FOR GOOD AND VALUABLE CONSIDERATION, THE RECEIPT AND SUFFICIENCY OF WHICH ARE HEREBY ACKNOWLEDGED, each Assignor hereby assigns, transfers and conveys unto Assignee, its successors and permitted assigns, such Assignor's entire and exclusive right, title and interest in and to the issued patents and patent applications (and any Letters Patent that may issue there upon) listed on Exhibit A attached hereto (the "Transferred Patents") and in and to any continuations, continuations-in-part, renewals, reexaminations, reissues, divisionals, substitutions, extensions, PCT and foreign counterparts thereof, and all priority rights pursuant to any international agreement, including the International Convention for the Protection of Industrial Property, as amended, the Paris Convention, and the Patent Cooperation Treaty, for the Transferred Patents, together with the right to sue for past, present or future infringements thereof and to recover damages and obtain all other remedies in respect to any such infringements thereof. This Assignment may be recorded with any governmental body in order to perfect the ownership interest of Assignee.

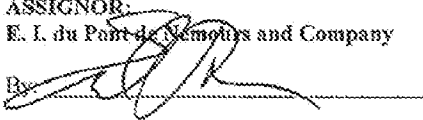
Each Assignor agrees, without further consideration, to execute all oaths, assignments, powers of attorney, applications and other papers reasonably necessary in secure to Assignee the right, title and interest conveyed herein, and to take such further actions as may be reasonably requested by Assignee in order to carry out the provisions and purposes of this Assignment including, without limitation, to execute one or more further assignments covering the Transferred Patents in a form acceptable for recordation in both the United States Patent and Trademark Office and in foreign patent offices. Further, each Assignor agrees that the Assignee shall alone attend to the recording of this assignment with the foreign patent offices including Korean, Japanese, Chinese, European and US patent offices.

Assignee hereby accepts all of the foregoing assignments, transfers and conveyances.

*[Signature Pages Follow]*

IN WITNESS WHEREOF, Assignors and Assignee have executed and delivered this Assignment as of the date first above written.

ASSIGNOR:  
E. I. du Pont de Nemours and Company

By: 

Name: Erik T. Hoover

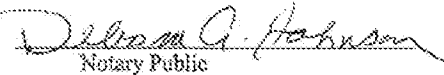
Title: Secretary

NOTARIAL ACKNOWLEDGEMENT

STATE OF DELAWARE )  
  ) ss.:  
COUNTY OF NEW CASTLE )



On the 11th day of April 2019, before me, the undersigned Notary Public, personally appeared Erik T. Hoover, personally known to me (or proved to me on the basis of satisfactory evidence) to be the individual whose name is subscribed to the foregoing instrument, and he/she acknowledged to me that he/she executed the same in his/her capacity specified beneath his/her signature and that by his/her signature on the foregoing instrument, the entity upon behalf of which such individual acted, executed the instrument.

  
Notary Public

ASSIGNOR:  
DuPont Displays, Inc.

By: Michael E. Schu

Name: Michael E. Schu

Title: Secretary

NOTARIAL ACKNOWLEDGEMENT

STATE OF Delaware )  
  ) ss.:  
COUNTY OF New Castle )

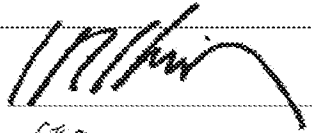


On the 11th day of April, 2019, before me, the undersigned Notary Public, personally appeared Michael E. Schu, personally known to me (or proved to me on the basis of satisfactory evidence) to be the individual whose name is subscribed to the foregoing instrument, and he/she acknowledged to me that he/she executed the same in his/her capacity specified beneath his/her signature and that by his/her signature on the foregoing instrument, the entity upon behalf of which such individual acted, executed the instrument.

Delora G. Johnson  
Notary Public

ASSIGNEE:  
LG Chem, Ltd.

By: \_\_\_\_\_

Name:  Hakcheol Shin

Title: CEO

EXHIBIT A

TRANSFERRED PATENTS

[Note: The filing dates are the actual dates of filing of an application as reported to Sellers by Sellers' patent agents and do not necessarily reflect the priority date to which a given application is entitled.]

Patents Assigned to DuPont Displays, Inc.

Country	Filing Date	Filing Number	Publication Number	Current Status	Grant Number
United States of America	25 Oct 2000	09/697381		Grant	6563262
South Korea / Republic of Korea	12 Oct 1999	10-2001-7004644		Grant	10-591636

Patents Jointly Assigned to DuPont Displays, Inc. and E. I. du Pont de Nemours and Company

Country	Filing Date	Filing Number	Publication Number	Current Status	Grant Number
United States of America	13 Jul 2004	10/890360		Grant	7235420



Patents Assigned to E.I. du Pont de Nemours and Company

Country	Filing Date	Filing Number	PCT Application Number	Publication Number	Current Status	Grant Number
South Korea / Republic of Korea	27 Jun 2001	10-2002-7017946			Grant	10-0838010
South Korea / Republic of Korea	26 Dec 2001	10-2003-7013148			Grant	10-0879595
South Korea / Republic of Korea	24 Sep 2003	10-2005-7004948			Grant	10-1021749
South Korea / Republic of Korea	22 Apr 2004	10-2005-7019986			Grant	10-1075264
South Korea / Republic of Korea	04 Nov 2002	10-2011-7020302			Grant	10-1106874
South Korea / Republic of Korea	17 Feb 2005	10-2006-7019221			Grant	10-1135745
South Korea / Republic of Korea	04 Nov 2002	10-2011-7005913			Grant	10-1138095
South Korea / Republic of Korea	24 Mar 2005	10-2006-7022500			Grant	10-1138137

South Korea / Republic of Korea	24 Sep 2003	10-2005-7004940		Grant	10-1148285
South Korea / Republic of Korea	16 Mar 2005	10-2006-7021421		Grant	10-1175815
South Korea / Republic of Korea	16 Mar 2005	10-2006-7021442		Grant	10-1176716
South Korea / Republic of Korea	29 Dec 2005	10-2007-7017318	10-2007- 108163	Grant	10-1185658
South Korea / Republic of Korea	16 Mar 2005	10-2006-7021437		Grant	10-1189857
South Korea / Republic of Korea	17 Feb 2005	10-2006-7019117		Grant	10-1197802
South Korea / Republic of Korea	16 Mar 2005	10-2006-7021609		Grant	10-1210217
South Korea / Republic of Korea	08 Jun 2005	10-2012-7010762		Grant	10-1233855
South Korea / Republic of Korea	28 Jun 2006	10-2008-7002161		Grant	10-1279209
South Korea / Republic of Korea	28 Jun 2006	10-2008-7002159		Grant	10-1279226
South Korea / Republic of Korea	18 Apr 2005	10-2008-7028000		Grant	10-1279315

South Korea / Republic of Korea	27 Dec 2006	10-2008-7018368		Grant	10-1295484
South Korea / Republic of Korea	24 Aug 2007	10-2007-85320		Grant	10-1332519
South Korea / Republic of Korea	28 Jun 2006	10-2008-7002158		Grant	10-1356296
South Korea / Republic of Korea	22 Dec 2009	10-2011-7017050		Grant	10-1368116
South Korea / Republic of Korea	27 Dec 2006	10-2008-7018524		Grant	10-1387213
South Korea / Republic of Korea	29 Jun 2007	10-2009-7001831		Grant	10-1387894
South Korea / Republic of Korea	01 Jun 2007	10-2009-7000027		Grant	10-1398780
South Korea / Republic of Korea	28 Dec 2007	10-2009-7015823		Grant	10-1413396
South Korea / Republic of Korea	01 Mar 2010	10-2011-7022470		Grant	10-1427457
South Korea / Republic of Korea	29 Dec 2005	10-2007-7017390		Grant	10-1433944
Germany	04 Nov 2002	02786555.7	1442094	Grant	1442094

European Procedure (Patents)	04 Nov 2002	02786655.7	1442094	Grant	1442094
France	04 Nov 2002	02786655.7	1442094	Grant	1442094
United Kingdom	04 Nov 2002	02786655.7	1442094	Grant	1442094
South Korea / Republic of Korea	02 Feb 2007	10-2008-7021509		Grant	10-1456720
South Korea / Republic of Korea	15 May 2009	10-2010-7029057		Grant	10-1491877
South Korea / Republic of Korea	19 Nov 2009	10-2011-7013948		Grant	10-1495396
South Korea / Republic of Korea	24 Aug 2007	10-2007-85319		Grant	10-1516813
South Korea / Republic of Korea	09 Dec 2009	10-2011-7015796		Grant	10-1517651
Germany	24 Sep 2003	03759472.8	1546237	Grant	1546237
European Procedure (Patents)	24 Sep 2003	03759472.8	1546237	Opposition	1546237
France	24 Sep 2003	03759472.8	1546237	Grant	1546237

United Kingdom	24 Sep 2003	03759472.8	1546237	Grant	1546237
European Procedure (Patents)	24 Sep 2003	03770522.5	1546283	Opposition	1546283
France	24 Sep 2003	03770522.5	1546283	Grant	1546283
United Kingdom	24 Sep 2003	03770522.5	1546283	Grant	1546283
European Procedure (Patents)	22 Apr 2004	04750548.2	1615971	Grant	1615971
United Kingdom	22 Apr 2004	04750548.2	1615971	Grant	1615971
European Procedure (Patents)	17 Feb 2005	05723475.9	1723214	Grant	1723214
United Kingdom	17 Feb 2005	05723475.9	1723214	Grant	1723214
European Procedure (Patents)	16 Mar 2005	05725620.8	1725601	Grant	1725601
United Kingdom	16 Mar 2005	05725620.8	1725601	Grant	1725601
European Procedure (Patents)	17 Feb 2005	05713928.9	1725629	Grant	1725629

Exhibit A -- Page 6

United Kingdom	17 Feb 2005	05713928.9	1725629	Grant	1725629
European Procedure (Patents)	16 Mar 2005	05725616.6	1726051	Opposition	1726051
France	16 Mar 2005	05725616.6	1726051	Grant	1726051
United Kingdom	16 Mar 2005	05725616.6	1726051	Grant	1726051
European Procedure (Patents)	16 Mar 2005	05725741.2	1730211	Grant	1730211
France	16 Mar 2005	05725741.2	1730211	Grant	1730211
United Kingdom	16 Mar 2005	05725741.2	1730211	Grant	1730211
European Procedure (Patents)	16 Mar 2005	05725742.0	1730212	Grant	1730212
United Kingdom	16 Mar 2005	05725742.0	1730212	Grant	1730212
European Procedure (Patents)	24 Mar 2005	05856583.9	1756219	Grant	1756219
United Kingdom	24 Mar 2005	05856583.9	1756219	Grant	1756219

Exhibit A -- Page 7

China	27 Jun 2001	01814861.1	PCT/US2001/020539	1449640	Grant	01814861.1
China	26 Dec 2001	01823216.7	PCT/US2001/049522		Grant	01823216.7
European Procedure (Patents)	13 Oct 2008	08017886.6		2034000	Grant	2034000
France	13 Oct 2008	08017886.6		2034000	Grant	2034000
United Kingdom	13 Oct 2008	08017886.6		2034000	Grant	2034000
European Procedure (Patents)	28 Dec 2007	07868143.4		2111429	Grant	2111429
France	28 Dec 2007	07868143.4		2111429	Grant	2111429
United Kingdom	28 Dec 2007	07868143.4		2111429	Grant	2111429
European Procedure (Patents)	29 May 2008	08769790.0		2150524	Grant	2150524
European Procedure (Patents)	18 Nov 2008	08851156.3		2217674	Grant	2217674
France	18 Nov 2008	08851156.3		2217674	Grant	2217674

Exhibit A -- Page 8

United Kingdom	18 Nov 2008	08851156.2		2217674	Grant	2217674
European Procedure (Patents)	27 Sep 2010	10010702.8		2261299	Grant	2261299
United Kingdom	27 Sep 2010	10010702.8		2261299	Grant	2261299
European Procedure (Patents)	01 Dec 2009	09830951.1		2352801	Grant	2352801
European Procedure (Patents)	01 Mar 2010	10746974.4		2401341	Grant	2401341
France	01 Mar 2010	10746974.4		2401341	Grant	2401341
United Kingdom	01 Mar 2010	10746974.4		2401341	Grant	2401341
China	24 Sep 2003	03822425.9	PCT/US2003/030512	CN1681869	Grant	03822425.9
China	24 Sep 2003	03822523.9	PCT/US2003/030509	CN1685013	Grant	03822523.9
China	24 Sep 2003	03822701.0	PCT/US2003/030026	CN1688633A	Grant	03822701.0
Japan	26 Dec 2001	2003-563272		2005-516040	Grant	4299144



Japan	24 Sep 2003	2004-540019	2006-502254	Grant	4464277
Japan	10 Aug 2009	2009-185739	2009-270117	Grant	4829328
Japan	22 Apr 2004	2006-513254	2006-527277	Grant	4851323
Japan	16 Mar 2005	2007-504026	2007-531802	Grant	4851442
Japan	28 Jan 2005	2006-551605	2007-524239	Grant	4918265
Japan	26 May 2007	2007-141160	2007-270155	Grant	4971034
Japan	27 Jun 2001	2002-507959	2004-503059	Grant	5174310
Japan	24 Mar 2005	2007-506513	2007-531807	Grant	5185615
Japan	27 Dec 2006	2008-548700	2009-521591	Grant	5189990
Japan	12 Apr 2005	2007-508482	2007-532359	Grant	5199562
Japan	16 Mar 2005	2007-504066	2007-529610	Grant	5216320

Japan	06 Nov 2009	2009-254984	2010-100854	Grant	5222828
Japan	29 Jun 2007	2009-518326	2010-509405	Grant	5264723
Japan	15 Mar 2005	2007-504065	2007-529609	Grant	5324089
Japan	29 May 2008	2010-510475	2010-529030	Grant	5453249
Japan	28 Jun 2006	2008-519509	2008-547165	Grant	5489458
Japan	28 Dec 2007	2009-544121	2010-514904	Grant	5519292
Japan	07 Jun 2012	2012-130171	2012-176981	Grant	5536830
Japan	02 May 2011	2011-102939	2011-190452	Grant	5562899
Japan	21 Dec 2009	2012-503409	2012-522781	Grant	5567656
Japan	21 Dec 2009	2012-509779	2012-526108	Grant	5567660
Japan	21 Dec 2009	2012-524689	2013-501783	Grant	5567675

Japan	24 Aug 2007	2007-218775	2008-098615	Grant	5571278
Japan	21 Dec 2009	2011-542529	2012-512912	Grant	5571690
Japan	07 Jun 2012	2012-130173	2012-176982	Grant	5576431
Japan	15 May 2009	2011-509729	2011-521416	Grant	5596020
Japan	22 Mar 2012	2012-065874	2012-157859	Grant	5602173
Japan	21 Dec 2009	2012-535184	2013-508360	Grant	5662461
Japan	19 May 2010	2012-511981	2012-527468	Grant	5676579
Japan	21 Dec 2010	2012-546170	2013-515380	Grant	5688098
Japan	09 Mar 2010	2011-554123	2012-519981	Grant	5701782
Japan	18 Nov 2008	2010-535021	2011-506626	Grant	5702147
Japan	21 Dec 2009	2012-527856	2013-503860	Grant	5714014

Japan	21 Dec 2009	2012-532061	2013-505902	Grant	5715142
Japan	23 Aug 2010	2012-526873	2013-502740	Grant	5726877
Japan	19 Dec 2011	2013-545207	2014-509067	Grant	5727038
Japan	21 Dec 2009	2012-522796	2013-500575	Grant	5727478
Japan	19 Jun 2014	2014-126366	2014-212333	Grant	5731693
Japan	24 Dec 2013	2013-265744	2014-090195	Grant	5757989
Japan	09 Apr 2012	2014-504063	2014-515188	Grant	5758045
Japan	23 Aug 2010	2012-526884	2013-502744	Grant	5779581
Japan	21 Dec 2009	2012-536700	2013-509406	Grant	5784621
Japan	21 Dec 2010	2012-546171	2013-515157	Grant	5788901
Japan	14 Feb 2012	2013-554543	2014-511568	Grant	5806336

Japan	27 May 2014	2014-109486	2014-212325	Grant	5836430
Japan	12 Dec 2011	2013-544641	2014-506246	Grant	5837611
Japan	19 Dec 2011	2013-546282	2014-509012	Grant	5844820
Japan	24 Aug 2011	2013-526112	2013-538453	Grant	5886858
Japan	16 Jun 2011	2013-515502	2013-531658	Grant	5893011
Japan	20 Dec 2011	2013-546346	2014-507403	Grant	5926286
Japan	13 Dec 2011	2013-544695	2014-511340	Grant	6110307
Japan	21 Mar 2013	2015-501895	2015-519296	Grant	6114375
Japan	12 Mar 2015	2015-049659	2015-147776	Grant	6148271
Japan	21 Mar 2013	2015-501897	2015-515463	Grant	6204453
United States Of America	21 Jul 1998	09/120253		Grant	6208006

United States Of America	30 Sep 1998	09/163715		Grant	6430910
United States Of America	10 Jun 1997	08/872657		Grant	6452218
United States Of America	14 Aug 1996	09/485535		Grant	6483099
United States Of America	20 Dec 2001	10/027421	US-2002- 0190250-A1	Grant	6670645
United States Of America	13 May 2002	10/145404	US-2002- 0130312-A1	Grant	6707060
United States Of America	26 Feb 2003	10/374611	US-2003- 0164497-A1	Grant	6720203
United States Of America	09 Oct 2001	09/974113	US-2003- 0148142-A1	Grant	6859693
United States Of America	03 Feb 2003	10/356813	US-2003- 0173896-A1	Grant	6919139
United States Of America	15 Jul 2002	10/195942	US-2003- 0129450-A1	Grant	6924047
United States Of America	29 Oct 2003	10/695003	US-2004- 0108507-A1	Grant	6946688

United States Of America	22 Jul 2003	10/625112	US-2005- 0019977-A1	Grant	6953705
United States Of America	24 Feb 2003	10/372351	US-2003- 0222250-A1	Grant	6955773
United States Of America	02 Jul 2003	10/612493	US-2004- 0068115-A1	Grant	6962995
United States Of America	31 Jul 2003	10/631432	US-2004- 0068132-A1	Grant	6963005
United States Of America	12 Jun 2003	10/459946	US-2005- 0165235-A1	Grant	6979739
United States Of America	03 Aug 2004	10/910495	US-2006- 0027800-A1	Grant	6992326
United States Of America	22 Jul 2003	10/625037	US-2005- 0017626-A1	Grant	7002292
United States Of America	28 May 2004	10/656512	US-2004- 0217348-A1	Grant	7005798
United States Of America	20 Feb 2004	10/763132	US-2005- 0186495-A1	Grant	7011671
United States Of America	19 Jul 2005	11/184936	US-2005- 0263781-A1	Grant	7038375
United States Of America	03 Feb 2004	10/771045		Grant	7049392

United States Of America	29 Dec 2004	11/025424		Grant	7050597
United States Of America	22 Apr 2004	10/629610	US-2005- 0236514-A1	Grant	7067841
United States Of America	22 Jul 2003	10/625096	US-2004- 0072018-A1	Grant	7090929
United States Of America	18 Aug 2003	10/643255	US-2004- 0094768-A1	Grant	7098060
United States Of America	10 Oct 2003	10/683829	US-2005- 0077815-A1	Grant	7109530
United States Of America	29 Oct 2003	10/696057	US-2006- 0192198-A1	Grant	7119899
United States Of America	17 Jun 2005	11/155068	US-2005- 0236880--A1	Grant	7119304
United States Of America	29 Oct 2003	10/696060	US-2004- 0188673 A1	Grant	7128518
United States Of America	24 Nov 2003	10/720967	US-2004- 0075096-A1	Grant	7132681
United States Of America	10 Oct 2003	10/683828	US-2005- 0077801-A1	Grant	7135357



United States Of America	07 May 2004	10/840981	US-2005- 0248260-A1	Grant	7151342
United States Of America	24 Nov 2003	10/720954	US-2004- 0116696-A1	Grant	7161172
United States Of America	20 May 2005	11/134100	US-2006- 0145143-A1	Grant	7166860
United States Of America	01 Apr 2004	10/816153	US-2004- 0219391 A1	Grant	7183365
United States Of America	14 Sep 2004	10/940566	US-2005- 0049388-A1	Grant	7183366
United States Of America	20 May 2005	11/134166	US-2006- 0136947-A1	Grant	7187123
United States Of America	25 Sep 2003	10/670670	US-2005- 0070654-A1	Grant	7189771
United States Of America	29 Dec 2004	11/025110	US-2006- 0138401-A1	Grant	7189991
United States Of America	08 Apr 2005	11/101700	US-2006- 0055000-A1	Grant	7193244
United States Of America	28 Aug 2003	10/650323	US-2005- 0048312-A1	Grant	7198730
United States Of America	30 Oct 2003	10/699411	US-2004- 0094759-A1	Grant	7199392

United States Of America	25 Mar 2003	10/396181	US-2003- 0225234-A1	Grant	7205366
United States Of America	25 Mar 2004	10/809169	US-2004- 0181020 A1	Grant	7211643
United States Of America	25 Mar 2004	10/809657	US-2004- 0181021 A1	Grant	7214783
United States Of America	25 Mar 2004	10/809142	US-2004- 0181019 A1	Grant	7220820
United States Of America	19 Aug 2005	11/207978	US-2005- 0283517-A1	Grant	7226799
United States Of America	10 Aug 2004	10/914871	US-2005- 0034051-A1	Grant	7233493
United States Of America	17 Mar 2004	10/803114	US-2005- 0209388-A1	Grant	7250461
United States Of America	31 Oct 2002	10/284593	US-2003- 0096138-A1	Grant	7250512
United States Of America	23 Mar 2005	11/088164	US-2005- 0248261-A1	Grant	7250632
United States Of America	01 Apr 2004	10/816160	US-2004- 0186255-A1	Grant	7259229

United States Of America	02 Jul 2003	10/612482	US-2004- 0066135-A1	Grant	7265378
United States Of America	30 Dec 2004	11/026732	US-2006- 0145167-A1	Grant	7268006
United States Of America	10 Aug 2004	10/915578	US-2006- 0035469-A1	Grant	7276453
United States Of America	29 Oct 2003	10/696349	US-2004- 0089867-A1	Grant	7276726
United States Of America	10 Aug 2004	10/914813	US-2006- 0034050-A1	Grant	7286347
United States Of America	10 Aug 2004	10/914873	US-2006- 0032528-A1	Grant	7300731
United States Of America	19 Mar 2004	10/604503	US-2004- 0206942-A1	Grant	7317047
United States Of America	16 Jul 2004	10/893211	US-2006- 0012310-A1	Grant	7317433
United States Of America	03 Dec 2004	11/003172	US-2006- 0119549-A1	Grant	7317434
United States Of America	14 Dec 2004	11/012036	US-2005- 0196637-A1	Grant	7320835
United States Of America	17 Mar 2004	10/602138	US-2005- 0208328-A1	Grant	7338620

Exhibit A -- Page 20

United States Of America	20 Feb 2004	10/783304	US-2005- 0184287-A1	Grant	7365230
United States Of America	17 Mar 2004	10/803113		Grant	7371356
United States Of America	17 Mar 2004	10/802704	US-2004- 0254297-A1	Grant	7390438
United States Of America	24 Sep 2003	10/669494	US-2004- 0102577-A1	Grant	7431866
United States Of America	31 Mar 2004	10/815054	US-2005- 0224765-A1	Grant	7455793
United States Of America	24 Sep 2003	10/669577	US-2004- 0127637-A1	Grant	7462298
United States Of America	17 Oct 2007	11/873644	US-2009- 0032097-A1	Grant	7547842
United States Of America	29 Dec 2005	11/321976		Grant	7554112
United States Of America	29 Dec 2005	11/321813		Grant	7563392
United States Of America	30 Jul 2007	11/830530	US-2007- 0269917-A1	Grant	7572655
United States Of America	15 Jun 2005	11/153108	US-2005- 0233232-A1	Grant	7575816

United States Of America	06 Sep 2006	11/516400	US-2008- 0058517-A1	Grant	7582757
United States Of America	30 Dec 2004	11/026265	US-2006- 0144277-A1	Grant	7584701
United States Of America	29 Dec 2004	11/025265	US-2005- 0230678-A1	Grant	7586171
United States Of America	16 Dec 2005	11/303905		Grant	7586622
United States Of America	29 Oct 2003	10/696048	US-2009- 0206326-A1	Grant	7595501
United States Of America	29 Dec 2004	11/025122	US-2006- 0139275-A1	Grant	7612368
United States Of America	27 Jun 2006	11/475710	US-2007- 0069184-A1	Grant	7638072
United States Of America	29 Dec 2005	11/321784		Grant	7670506
United States Of America	24 Sep 2003	10/669403	US-2005- 0062021-A1	Grant	7686978
United States Of America	28 Dec 2005	11/319859	US-2007- 0159086-A1	Grant	7719499
United States Of America	27 Jun 2006	11/475702	US-2007- 0066755-A1	Grant	7722785

United States Of America	20 Dec 2005	11/312854		Grant	7736540
United States Of America	28 Jan 2005	11/045192	US-2005- 0191927-A1	Grant	7749037
United States Of America	28 Jun 2006	11/476979	US-2010- 0127222-A1	Grant	7749407
United States Of America	14 Dec 2005	11/302776		Grant	7781550
United States Of America	16 Dec 2005	11/303708		Grant	7781588
United States Of America	22 Dec 2006	11/644751	US-2007- 0181944-A1	Grant	7795653
United States Of America	02 Mar 2005	11/070070	US-2006- 0144694-A1	Grant	7803254
United States Of America	22 Dec 2006	11/644491	US-2007- 0145360-A1	Grant	7807992
United States Of America	22 Dec 2005	11/315741		Grant	7816016
United States Of America	27 Jun 2006	11/475715	US-2007- 0069185-A1	Grant	7837901
United States Of America	11 Jan 2008	11/972784	US-2008- 0105867-A1	Grant	7837902

United States Of America	07 Jun 2007	11/759286	US-2008- 0003523-A1	Grant	7838195
United States Of America	21 Dec 2006	11/643293	US-2007- 0232782-A1	Grant	7838627
United States Of America	29 Dec 2004	11/025749	US-2006- 0138402-A1	Grant	7887876
United States Of America	05 Jun 2007	11/758335	US-2008- 0067924-A1	Grant	7911134
United States Of America	23 May 2008	12/126061	US-2008- 0227981-A1	Grant	7914756
United States Of America	19 Dec 2007	11/960351	US-2008- 0160270-A1	Grant	7915806
United States Of America	30 Jul 2010	12/846979	US-2010- 0291721-A1	Grant	7923276
United States Of America	26 Nov 2008	12/323642	US-2011- 0061735-A1	Grant	7947536
United States Of America	19 Feb 2004	10/782357	US-2005- 0187411-A1	Grant	7960587
United States Of America	22 Dec 2006	11/644440	US-2007- 0181648-A1	Grant	7960717
United States Of America	29 Dec 2005	11/721732	US-2006- 0257473-A1	Grant	8002939

United States Of America	23 Dec 2005	11/721589	US-2008- 0317644-A1	Grant	8017223
United States Of America	11 Dec 2008	12/332519	US-2009- 0155723-A1	Grant	8040048
United States Of America	29 Jun 2007	11/770822	US-2008- 0023676-A1	Grant	8057708
United States Of America	17 Nov 2008	12/272210	US-2011- 0085289-A1	Grant	8063399
United States Of America	20 Dec 2005	11/313131		Grant	8063551
United States Of America	17 Dec 2008	12/337028	US-2011- 0095270-A1	Grant	8067764
United States Of America	21 Dec 2005	11/721500		Grant	8067887
United States Of America	07 Aug 2007	11/835047	US-2009- 0121617-A1	Grant	8071975
United States Of America	09 Dec 2008	12/330677	US-2011- 0049477-A1	Grant	8115200
United States Of America	10 Apr 2006	11/401151	US-2007- 0218582-A1	Grant	8124172
United States Of America	09 Dec 2009	12/633903	US-2011- 0049431-A1	Grant	8142686



United States Of America	26 Dec 2008	12/344309	US-2010- 0237347-A1	Grant	8154700
United States Of America	30 May 2008	12/129760	US-2008- 0306303-A1	Grant	8158831
United States Of America	10 Mar 2011	13/045254	US-2011- 0163271-A1	Grant	8173047
United States Of America	20 Dec 2006	11/642158	US-2007- 0176173-A1	Grant	8173995
United States Of America	17 Dec 2008	12/336801	US-2010- 0237769-A1	Grant	8174185
United States Of America	08 Jan 2009	12/350338	US-2010- 0244665-A1	Grant	8192848
United States Of America	31 Jan 2007	11/700455	US-2008- 0003449-A1	Grant	8215680
United States Of America	04 Jun 2010	12/793899		Grant	8217181
United States Of America	07 Apr 2009	12/419810	US-2009- 0200933-A1	Grant	8236990
United States Of America	15 May 2008	12/121121	US-2009- 0114884-A1	Grant	8241526
United States Of America	30 May 2008	12/129765	US-2008- 0297040-A1	Grant	8241752

United States Of America	22 Aug 2007	11/843029	US-2008- 0071049-A1	Grant	8242223
United States Of America	17 Feb 2012	13/398914	US-2012- 0146013-A1	Grant	8247810
United States Of America	22 Sep 2006	11/525660		Grant	8247824
United States Of America	20 Dec 2007	11/961369	US-2008- 0165595-A1	Grant	8257836
United States Of America	18 Dec 2009	12/642116	US-2010- 0187508-A1	Grant	8263973
United States Of America	13 Apr 2011	13/085574	US-2011- 0186836-A1	Grant	8273468
United States Of America	21 Dec 2009	12/643555	US-2011- 0147719-A1	Grant	8282851
United States Of America	21 May 2012	13/476499	US-2012- 0228593-A1	Grant	8324619
United States Of America	28 Dec 2007	11/955911	US-2008- 0135809-A1	Grant	8338512
United States Of America	18 May 2009	12/467531		Grant	8343381
United States Of America	08 Jun 2012	13/491682	US-2012- 0241683-A1	Grant	8362275

United States Of America	30 Mar 2011	13/075404	US-2011- 0175039-A1	Grant	8409476
United States Of America	03 Dec 2009	12/630361	US-2010- 0187507-A1	Grant	8420232
United States Of America	21 Dec 2009	12/643567	US-2011- 0095273-A1	Grant	8431245
United States Of America	21 Dec 2006	11/643156	US-2007- 0228364-A1	Grant	8440324
United States Of America	22 Feb 2012	13/402345	US-2012- 0146015-A1	Grant	8445119
United States Of America	10 Mar 2011	13/045207	US-2011- 0155966-A1	Grant	8455865
United States Of America	08 Mar 2010	13/202235	US-2011- 0298863-A1	Grant	8459776
United States Of America	16 Dec 2009	12/642093	US-2010- 0187982-A1	Grant	8461758
United States Of America	20 Dec 2007	11/960869	US-2008- 0160349-A1	Grant	8465848
United States Of America	05 Apr 2011	13/080317	US-2011- 0180761-A1	Grant	8465850
United States Of America	02 Dec 2011	13/310186	US-2012- 0074396-A1	Grant	8470960

United States Of America	30 Aug 2012	13/599614	US-2012- 0319571-A1	Grant	8471251
United States Of America	23 Aug 2010	12/861154	US-2011- 0204339-A1	Grant	8476620
United States Of America	30 Aug 2006	11/794604		Grant	8481104
United States Of America	05 Dec 2011	13/310886	US-2012- 0077955-A1	Grant	8487055
United States Of America	25 Mar 2011	13/072423	US-2011- 0168952-A1	Grant	8491819
United States Of America	21 Dec 2009	12/643466	US-2010- 0252819-A1	Grant	8497495
United States Of America	14 Sep 2012	13/617717	US-2013- 0009142-A1	Grant	8529796
United States Of America	21 Dec 2009	12/643511	US-2010- 0187983-A1	Grant	8531100
United States Of America	26 Jun 2009	12/993259	US-2011- 0073853-A1	Grant	8546844
United States Of America	01 Dec 2009	12/628503	US-2010- 0213825-A1	Grant	8551624
United States Of America	09 Nov 2005	11/270153	US-2006- 0276096-A1	Grant	8563331

United States Of America	23 Mar 2011	13/070200	US-2011- 0186835-A1	Grant	8563856
United States Of America	20 May 2013	13/897573	US-2013- 0248838-A1	Grant	8563972
United States Of America	15 Oct 2010	12/905673	US-2011- 0031441-A1	Grant	8568616
United States Of America	29 Jul 2008	12/181609	US-2008- 0286536-A1	Grant	8585931
United States Of America	21 Dec 2009	12/643403	US-2011- 0017980-A1	Grant	8592239
United States Of America	26 May 2011	13/116208	US-2011- 0220885-A1	Grant	8604247
United States Of America	10 Dec 2008	12/746984	US-2011- 0026045-A1	Grant	8616666
United States Of America	21 Dec 2009	12/643381	US-2011- 0147718-A1	Grant	8617720
United States Of America	03 Jun 2010	13/318563	US-2012- 0044512-A1	Grant	8619326
United States Of America	13 May 2008	12/119771	US-2008- 0248314-A1	Grant	8641926
United States Of America	18 Nov 2009	12/621023	US-2010- 0181556-A1	Grant	8643000

United States Of America	19 Oct 2010	12/907058	US-2011- 0253985-A1	Grant	8648333
United States Of America	23 Sep 2011	13/241580	US-2012- 0065432-A1	Grant	8652655
United States Of America	04 Apr 2012	13/439202	US-2012- 0193595-A1	Grant	8658061
United States Of America	28 Dec 2009	12/647818	US-2010- 0188459-A1	Grant	8702202
United States Of America	21 Dec 2009	12/643420	US-2011- 0037057-A1	Grant	8759818
United States Of America	16 Jan 2013	13/742596	US-2013- 0126790-A1	Grant	8765022
United States Of America	29 Nov 2011	13/306473	US-2012- 0068166-A1	Grant	8766242
United States Of America	08 Mar 2010	13/203270	US-2011- 0309350-A1	Grant	8778708
United States Of America	15 May 2009	12/937569	US-2011- 0095300-A1	Grant	8778795
United States Of America	06 Mar 2013	13/786800	US-2013- 0193381-A1	Grant	8784692
United States Of America	21 Apr 2010	13/265000	US-2012- 0181485-A1	Grant	8845933

United States Of America	23 May 2012	13/478592	US-2012- 0331577-A1	Grant	8846441
United States Of America	23 Sep 2011	13/241542	US-2012- 0013245-A1	Grant	8889259
United States Of America	06 Mar 2013	13/786769	US-2013- 0181201-A1	Grant	6890131
United States Of America	18 Jul 2013	13/945284	US-2013- 0299800-A1	Grant	8907353
United States Of America	18 Dec 2009	12/642051	US-2010- 0187981-A1	Grant	8932733
United States Of America	19 Oct 2010	12/907067	US-2011- 0253986-A1	Grant	8937300
United States Of America	12 Mar 2010	13/202204	US-2012- 0175596-A1	Grant	8945426
United States Of America	23 Apr 2010	13/265002	US-2012- 0145966-A1	Grant	8945427
United States Of America	20 Dec 2005	11/312857		Grant	8950328
United States Of America	21 Dec 2009	12/643487	US-2011- 0037381-A1	Grant	8968883
United States Of America	13 May 2013	13/892468	US-2013- 0248833-A1	Grant	8992800

United States Of America	03 Jun 2010	13/266322	US-2012- 0045568-A1	Grant	9011967
United States Of America	30 May 2008	12/129729	US-2008- 0303427-A1	Grant	9012037
United States Of America	05 Mar 2014	14/197841	US-2014- 0253616-A1	Grant	9033480
United States Of America	22 May 2013	13/899853	US-2013- 0327422-A1	Grant	9062993
United States Of America	01 Dec 2009	12/628491	US-2010- 0187506-A1	Grant	9099653
United States Of America	30 Jun 2010	13/379807	US-2012- 0146008-A1	Grant	9133095
United States Of America	16 Nov 2010	13/992992	US-2011- 0086164-A1	Grant	9138771
United States Of America	06 May 2014	14/270753	US-2014- 0326333-A1	Grant	9149630
United States Of America	12 Mar 2013	13/797076	US-2013- 0193423-A1	Grant	9159927
United States Of America	18 Jul 2013	13/945381	US-2013- 0299801-A1	Grant	9166174
United States Of America	09 Mar 2010	13/202416	US-2011- 0300657-A1	Grant	9209397



United States Of America	09 Mar 2010	13/203279	US-2011- 0305824-A1	Grant	9209398
United States Of America	04 Feb 2014	14/172132	US-2015- 0217304-A1	Grant	9227205
United States Of America	19 Oct 2012	14/349354	US-2014- 0239285-A1	Grant	9236580
United States Of America	19 May 2010	13/255025	US-2012- 0037898-A1	Grant	9260657
United States Of America	12 Dec 2011	13/989295	US-2013- 0240866-A1	Grant	9269909
United States Of America	13 Dec 2011	13/989253	US-2013- 0240865-A1	Grant	9276217
United States Of America	19 Dec 2011	13/990832	US-2013- 0248849-A1	Grant	9293716
United States Of America	20 Dec 2012	14/367425	US-2014- 0349431-A1	Grant	9293739
United States Of America	14 Oct 2013	14/053120	US-2014- 0034941-A1	Grant	9306185
United States Of America	09 Dec 2013	14/652304	US-2015- 0318476-A1	Grant	9312485
United States Of America	21 May 2014	14/284089	US-2015- 0340829-A1	Grant	9318715

United States Of America	26 Feb 2014	14/190455	US-2015- 0243909-A1	Grant	9478757
United States Of America	24 Jan 2013	13/748883	US-2013- 0140544-A1	Grant	9496506
United States Of America	06 Nov 2014	14/534299	US-2016- 0130194-A1	Grant	9505667
United States Of America	16 Jun 2011	13/703997	US-2013- 0062251-A1	Grant	9515257
United States Of America	11 Aug 2015	14/823310		Grant	9525134
United States Of America	19 Nov 2012	13/680164	US-2013- 0150536-A1	Grant	9574084
United States Of America	06 Oct 2014	14/509757	US-2015- 0021586-A1	Grant	9577199
United States Of America	02 Apr 2013	14/383138	US-2015- 0014675-A1	Grant	9593085
United States Of America	03 Apr 2015	14/678240	US-2016- 0286526-A1	Grant	9662918
United States Of America	04 Feb 2016	15/015469	US-2016- 0164005-A1	Grant	9680111
United States Of America	19 Dec 2011	13/990800	US-2013- 0248847-A1	Grant	9685613

United States Of America	19 Apr 2013	14/391720	US-2015- 0076465-A1	Grant	9685618
United States Of America	20 Oct 2014	15/030920	US-2016- 0254450-A1	Grant	9711731
United States Of America	14 Oct 2014	15/031031	US-2016- 0268514-A1	Grant	9716233
United States Of America	21 Mar 2013	14/386107	US-2015- 0048340-A1	Grant	9735375
United States Of America	24 Nov 2015	14/950769	US-2016- 0149136-A1	Grant	9746776
United States Of America	20 Feb 2014	14/768100	US-2015- 0380564-A1	Grant	9748497
United States Of America	16 Nov 2015	14/942362	US-2017- 0141171-A1	Grant	9768238
United States Of America	21 Mar 2013	14/386137	US-2015- 0028321-A1	Grant	9793497
United States Of America	18 Aug 2014	14/462053	US-2016- 0049598-A1	Grant	9843001
United States Of America	20 May 2013	13/897598	US-2013- 0248839-A1	Grant	9871211
United States Of America	29 Mar 2017	15/472660	US-2017- 0200900-A1	Grant	9876174

Germany	13 Oct 2006	08017886.6		2034000	Grant	60247173.7
Germany	24 Sep 2003	03770522.5		1546283	Grant	60341358.7
China	21 Dec 2009	200980161995.7	PCT/US2009/068924	CN102574753A	Grant	102574753
China	22 Apr 2004	200480010798.2	PCT/US2004/012564	CN1777648A	Grant	200480010798.2
China	16 Mar 2005	200580008486.2	PCT/US2005/008763	CN1934159A	Grant	200580008486.2
China	16 Mar 2005	200580008627.0	PCT/US2005/008561	CN1934225A	Grant	200580008627.0
China	16 Mar 2005	200580008646.3	PCT/US2005/008764	CN1972979A	Grant	200580008646.3
China	30 Mar 2005	200580010522.9	PCT/US2005/010852	CN101002506A	Grant	200580010522.9
China	24 Mar 2005	200580010524.8	PCT/US2005/010695	CN1973999A	Grant	200580010524.8
China	28 Jun 2006	200680022874.0	PCT/US2006/025128	CN101208369A	Grant	200680022874.0
China	02 Feb 2007	200780004265.7	PCT/US2007/002658	CN101379162A	Grant	200780004265.7

Exhibit A ~ Page 37

China	21 Dec 2009	200980158603.1	PCT/US2009/068921	CN102389255A	Grant	200980158603.1
China	21 Dec 2009	200980160534.8	PCT/US2009/068918	CN102470660A	Grant	200980160534.8
China	21 Dec 2009	200980161299.6	PCT/US2009/068945	CN102482570A	Grant	200980161299.6
China	21 Dec 2009	200980161436.6	PCT/US2009/068922	CN102510889A	Grant	200980161436.6
China	08 Mar 2010	201080008017.1	PCT/US2010/026467	CN102318040A	Grant	201080008017.1
China	09 Mar 2010	201080012033.8	PCT/US2010/026658	CN102349132A	Grant	201080012033.8
China	12 Mar 2010	201080012034.2	PCT/US2010/027115	CN102349115A	Grant	201080012034.2
China	23 Apr 2010	201080017846.6	PCT/US2010/032175	CN102395627A	Grant	201080017846.6
China	21 Apr 2010	201080017847.0	PCT/US2010/031836	CN102395628A	Grant	201080017847.0
China	19 May 2010	201080022317.5	PCT/US2010/035356	CN102428158A	Grant	201080022317.5
China	21 Dec 2010	201080057992.1	PCT/US2010/061672	CN102695777A	Grant	201080057992.1

Exhibit A - Page 38

China	16 Jun 2011	201180027968.8	PCT/US2011/040657	CN102934029A	Grant	201180027968.8
China	20 Dec 2011	201180060792.6	PCT/US2011/066313	CN103261172A	Grant	201180060792.6
China	09 Apr 2012	201280014337.7	PCT/US2012/032681	CN103562343A	Grant	201280014337.7
China	21 Mar 2013	201380014731.5	PCT/US2013/033209	CN104203968A	Grant	201380014731.5
Germany	22 Apr 2004	04750548.2		1615971	Grant	602004021370.5
Germany	24 Mar 2005	05856583.9		1756219	Grant	602005020777.5
Germany	16 Mar 2005	05725742.0		1730212	Grant	602005024671.1
Germany	16 Mar 2005	05725616.6		1726051	Grant	602005025318.1
Germany	17 Feb 2005	05713928.9		1725629	Grant	602005030235.2
Germany	17 Feb 2005	05723473.9		1733214	Grant	602005032381.3
Germany	16 Mar 2005	05725620.8		1725601	Grant	602005032498.4

Germany	16 Mar 2005	05725741.2	1730211	Grant	602005046592.8
Germany	27 Sep 2010	10010702.8	2261299	Grant	602005048266.0
Germany	28 Dec 2007	07868143.4	2111429	Grant	602007031775.4
Germany	29 May 2008	08769790.0	2150524	Grant	602008042256.8
Germany	18 Nov 2008	08851156.3	2217674	Grant	602008051809.4
Germany	01 Mar 2010	10746974.4	2401341	Grant	602010039677.0
South Korea / Republic of Korea	24 Sep 2003	10-2005-7004942		Grant	10-0996359
South Korea / Republic of Korea	26 Dec 2007	10-2009-7015818		Grant	10-1449775
South Korea / Republic of Korea	21 Dec 2009	10-2011-7016684		Grant	10-1496509
South Korea / Republic of Korea	11 Dec 2009	10-2011-7016024		Grant	10-1528658
South Korea / Republic of Korea	09 Dec 2009	10-2011-7015795		Grant	10-1534371

South Korea / Republic of Korea	21 Dec 2009	10-2012-7013556	Grant	10-1538534
South Korea / Republic of Korea	12 Dec 2011	10-2013-7018270	Grant	10-1539156
South Korea / Republic of Korea	13 Dec 2011	10-2013-7018271	Grant	10-1545418
South Korea / Republic of Korea	21 Dec 2009	10-2011-7029128	Grant	10-1545771
South Korea / Republic of Korea	21 Dec 2009	10-2012-7006369	Grant	10-1545774
South Korea / Republic of Korea	19 Dec 2011	10-2013-7019087	Grant	10-1547410
South Korea / Republic of Korea	29 May 2008	10-2009-7027389	Grant	10-1554750
South Korea / Republic of Korea	29 May 2008	10-2009-7027463	Grant	10-1554751
South Korea / Republic of Korea	12 Mar 2010	10-2011-7023860	Grant	10-1560859
South Korea / Republic of Korea	14 Nov 2014	10-2014-7033946	Grant	10-1561402
South Korea / Republic of Korea	01 Dec 2009	10-2011-7015997	Grant	10-1564129



South Korea / Republic of Korea	14 Feb 2012	10-2013-7024290	Grant	10-1573125
South Korea / Republic of Korea	21 Apr 2010	10-2011-7027467	Grant	10-1581990
South Korea / Republic of Korea	23 Apr 2010	10-2011-7027924	Grant	10-1581991
South Korea / Republic of Korea	21 Dec 2009	10-2011-7026110	Grant	10-1582707
South Korea / Republic of Korea	29 May 2008	10-2014-7035855	Grant	10-1589864
South Korea / Republic of Korea	18 Nov 2008	10-2010-7013523	Grant	10-1599563
South Korea / Republic of Korea	03 Dec 2009	10-2011-7015260	Grant	10-1616149
South Korea / Republic of Korea	20 Dec 2012	10-2014-7019753	Grant	10-1621636
South Korea / Republic of Korea	18 Mar 2009	10-2010-7023270	Grant	10-1643780
South Korea / Republic of Korea	29 May 2008	10-2009-7027391	Grant	10-1644193
South Korea / Republic of Korea	21 Dec 2009	10-2012-7004857	Grant	10-1675176

South Korea / Republic of Korea	15 May 2009	10-2016-7003152			Grant	10-1691773
South Korea / Republic of Korea	21 Dec 2009	10-2014-7024713			Grant	10-1720399
South Korea / Republic of Korea	16 Jun 2011	10-2013-7001140			Grant	10-1755067
South Korea / Republic of Korea	21 Dec 2009	10-2013-7013678			Grant	10-1761435
South Korea / Republic of Korea	19 Oct 2010	10-2012-7012884			Grant	10-1782660
South Korea / Republic of Korea	21 Dec 2009	10-2015-7013709			Grant	10-1790854
South Korea / Republic of Korea	20 Dec 2011	10-2013-7019094			Grant	10-1802008
China	16 Mar 2005	200580008642.5	PCT/US2005/008565	1976969A	Grant	200580008642.5
China	18 Mar 2009	200980110088.X	PCT/US2009/037461	101977985A	Grant	200980110088.X
China	01 Mar 2010	201080009906.X	PCT/US2010/025764	102369256A	Grant	201080009906.X
United States Of America	02 Jul 2003	29/185769			Grant	C492211

United States Of America	18 Apr 2012	13/450142		Grant	RE44853
South Korea / Republic of Korea	04 Nov 2002	10-2010-7012388		Withdrawal	
South Korea / Republic of Korea	04 Nov 2002	10-2004-7006848		Withdrawal	
Japan	16 Mar 2005	2007-504027	2007-529607	Rejection	
Japan	24 Sep 2003	2004-540020	2005-500461	Rejection	
United States Of America	18 Nov 2008	PCT/US08/83840		Open	
South Korea / Republic of Korea	01 Dec 2009	10-2011-7015117		Grant	10-1817808
European Procedure (Patents)	03 Dec 2009	09831094.9	2352803	Publication of Application	
European Procedure (Patents)	21 Apr 2010	10767581.9	2421918	Publication of Application	
Japan	01 Mar 2010	2011-552220	2012-519186	Rejection	
China	19 May 2010	201080022586.1	CN102428159A	Publication of Application	

Japan	19 May 2010	2012-511984	2012-527470	Rejection	
European Procedure (Patents)	21 Dec 2010	10843558.7	2516583	Withdrawal	
South Korea / Republic of Korea	21 Dec 2010	10-2012-7019182		Filing	
South Korea / Republic of Korea	21 Dec 2009	10-2012-7008462		Withdrawal	
South Korea / Republic of Korea	09 Jul 2015	10-2015-7018506		Grant	10-1811507
United States Of America	18 Mar 2016	15/074728	US-2016- 0285000-A1	Grant	9972783
South Korea / Republic of Korea	19 Dec 2011	1020137019086		Filing	
United States Of America	25 Oct 2016	15/333732	US-2017- 0040539-A1	Publication of Application	
South Korea / Republic of Korea	19 Dec 2011	1020137019089		Filing	
European Procedure (Patents)	21 Mar 2013	13763895.3	2828273	Publication of Application	
South Korea / Republic of Korea	21 Mar 2013	10-2014-7029353		Filing	

South Korea / Republic of Korea	19 Dec 2011	10-2013-7019079			Filing	
South Korea / Republic of Korea	21 Mar 2013	10-2014-7029352			Filing	
South Korea / Republic of Korea	02 Apr 2013	10-2014-7030344			Filing	
South Korea / Republic of Korea	19 Apr 2013	10-2014-7032392			Filing	
South Korea / Republic of Korea	19 Apr 2013	10-2014-7032393			Filing	
China	09 Dec 2013	201380063207.7	PCT/US2013/073822	104838513A	Grant	104838513B
Japan	09 Dec 2013	2015-547447		2016-506039	Grant	6371304
South Korea / Republic of Korea	09 Dec 2013	10-2015-7015268			Filing	
United States Of America	21 Apr 2014	14/784506		14/784506	Abandoned	
United States Of America	09 Dec 2014	15/101133		US-2016- 0308141-A1	Publication of Application	
Japan	20 Feb 2014	2015-558931		2016-509999	Publication of Application	

South Korea / Republic of Korea	20 Feb 2014	10-2015-7022544				Filing	
United States Of America	21 Jan 2015	15/113501		US-2017- 0012222-A1		Publication of Application	
South Korea / Republic of Korea	25 Feb 2015	10-2016-7022972				Local filing	
China	11 Dec 2014	201480075194.X	PCT/US2014/065795	105981192A		Grant	105981192
South Korea / Republic of Korea	11 Dec 2014	10-2016-7018367				Local filing	
United States Of America	11 Dec 2014	15/103969		US-2016- 0315259-A1		Grant	10134988
China	20 Oct 2014	201480057607.1	PCT/US2014/061311	105658626A		Publication of Application	
Japan	20 Oct 2014	2016-S25874		2016-537331		Publication of Application	
South Korea / Republic of Korea	20 Oct 2014	10-2016-7010155				Local filing	
United States Of America	02 Jul 2015	15/325935		US-2017- 0200893-A1		Grant	9947872
United States Of America	28 Aug 2014	14/471661		US-2016- 0060512-A1		Notice of Allowance	

Exhibit A -- Page 47

China	04 Aug 2016	201680045761.6	PCT/US2016/045610	107925001A	Publication of Application
Japan	04 Aug 2016	2018-507548	PCT/US2016/045610		Filing
South Korea / Republic of Korea	04 Aug 2016	10-2018-7006410			Local filing
International Procedure	04 Aug 2016	PCT/US16/45610		WO 2017/027333	Publication of Application
China	18 Nov 2015	201580062649.9	PCT/US2015/061309	107108861A	Publication of Application
South Korea / Republic of Korea	18 Nov 2015	10-2017-7016805			Local filing
United States Of America	18 Nov 2015	15/528189		US-2017-0358750-A1	Publication of Application
South Korea / Republic of Korea	03 Nov 2015	10-2017-7011716			Local filing
China	18 May 2016	201680028110.6	PCT/US2016/033051	107624121A	Publication of Application
South Korea / Republic of Korea	18 May 2016	10-2017-7033884			Local filing
United States Of America	18 May 2016	15/562182		US-2018-0097193-A1	Recordal

South Korea / Republic of Korea	20 Oct 2015	10-2017-7011304			Local filing
United States Of America	20 Oct 2015	15/518854		US-2017- 0225654-A1	Notice of Allowance
China	16 Oct 2015	201580055201.4	PCT/US2015/055927	107074763A	Publication of Application
South Korea / Republic of Korea	16 Oct 2015	10-2017-7010327			Local filing
United States Of America	16 Oct 2015	15/518262			Filing
China	20 Jan 2016	201680008101.0	PCT/US2016/014086	107250087A	Publication of Application
South Korea / Republic of Korea	20 Jan 2016	10-2017-7022894			Local filing
United States Of America	20 Jan 2016	15/543306		US-2018- 0062082-A1	Local filing
International Procedure	25 May 2017	PCT/US17/34383		WO 2017/205559	Publication of Application
South Korea / Republic of Korea	26 Jul 2016	10-2016-0094591			Filing
South Korea / Republic of Korea	18 May 2016	10-2016-0060564			Filing



United States Of America	05 May 2016	15/147579	US-2016- 0343957-A1	Publication of Application	
China	05 May 2016	201610297023.2	106117522A	Allowed	
South Korea / Republic of Korea	04 May 2016	10-2016-0055614		Local Billing	
United States Of America	20 Apr 2016	15/134032	US-2016- 0329497-A1	Grant	9954174
South Korea / Republic of Korea	14 Oct 2016	10-2016-0133424		Filing	
United States Of America	11 Oct 2016	15/290192	US-2017- 0110664-A1	Publication of Application	
United States Of America	13 Jul 2016	15/209441	US-2017- 0025609-A1	Publication of Application	
International Procedure	26 Oct 2016	PCT/US16/59288	WO 2017/079042	Publication of Application	
South Korea / Republic of Korea	19 Jul 2016	10-2016-0091107		Filing	
United States Of America	22 Jun 2016	15/189812	US-2017- 0025608-A1	Publication of Application	
United States Of America	02 Jun 2016	15/171482	US-2017- 0352815-A1	Grant	9966542

International Procedure	25 May 2017	PCT/US17/34434	WO 2017/210075	Publication of Application	
International Procedure	25 May 2017	PCT/US17/34419	WO 2017/210072	Publication of Application	
International Procedure	26 Jun 2017	PCT/US17/39279	WO 2018/017288	Publication of Application	
United States Of America	28 Dec 2007	11/966123	US 2008-0132622 A1	Abandoned	8716557 (DIV of US 10/783,304)
United States Of America	13 Apr 2004	10/823,320	US 2005-0224788 A1	Abandoned	7354532 (Parent of US 11/972,784)
United States Of America	03 Aug 2007	11/833446		Grant	8007590 (DIV of US 11/928,732)
United States Of America	17 Aug 2007	11/840,367	US 2008-0182009 A1	Abandoned	7420205
United States Of America	12 Dec 2006	11/637,453	US 2007-0278591 A1	Abandoned	7488975 (DIV of US 11/925,110)
United States Of America	06 Feb 2004	10/774,286	US 2007-0085077 A1	Abandoned	7476452 (CIP of US 10/768,298)
United States Of America	28 Jun 2006	11/476487		Abandoned	7700008 (Claims priority to US 60/694,794)
United States Of America	05 Apr 2011	13/080,361	US 2005-0037233 A1	Abandoned	8383192 (DIV of US 11/401,151)
United States Of America	12 Jul 2012	13/547,899	US 2005-0289843 A1	Abandoned	8460802 (CON of US 12/129,785)
				Abandoned	8772767 (DIV of

Exhibit A -- Page 51

United States Of America	22 May 2013	13/900130				12/861,154)
				US 2011- 0183268 A1	Abandoned	7744777 (Div of 10/803,113)
United States Of America	04 Apr 2006	12/062857				
				US 2012- 0277498 A1	Abandoned	7732910 (CON of 10/915,578)
United States Of America	17 Aug 2007	11/840392				
				US-2013- 0256642-A1	Pending	(Nat Stage of PCT/US16/59288; which is a CDN of 15/134,032)
				US-2008- 0210910-A1		
				US-2008- 0210931-A1		
China	25 May 2017	201780030468.7	PCT/US2017/034383	109153771A	Publication of Application	
Japan	25 May 2017	PCT/US17/34383	PCT/US2017/034383		Filing	
Korea	25 May 2017	10-2019-7034143	PCT/US2017/034383		Filing	
United States of America	25 May 2017	15/096934			Filing	
China	28 Oct 2016	201680064629.X	PCT/US2016/059288	108349869A	Publication of Application	
Japan	28 Oct 2016	2016-522636			Filing	
Korea	28 Oct 2016	10-2018-7012043		10-2018- 0066115	Publication of Application	

China	25 May 2017	201780033202.8	PCT/US2017/034434	109195970A	Publication of Application	
Japan	25 May 2017	PCT/US17/34434	PCT/US2017/034434		Filing	
Korea	25 May 2017	10-2016-7036855	PCT/US2017/034434		Filing	
China	25 May 2017	201780032457.2	PCT/US2017/034419	109153684A	Publication of Application	
Japan	25 May 2017	PCT/US17/34419	PCT/US2017/034419		Filing	
Korea	25 May 2017	10-2018-7036481	PCT/US2017/034419		Filing	
United States of America	25 May 2017	PCT/US17/34419			Filing	
United States of America	14 Nov 2018	16/301483			Filing	
China	26 Jun 2017	201780026822.9	PCT/US2017/039279	109075255A	Publication of Application	
Japan	26 Jun 2017	PCT/US17/39279	PCT/US2017/039279		Filing	
Korea	26 Jun 2017	10-2019-7000120	PCT/US2017/039279		Filing	
United States of America	19 Dec 2018	16/311387			Filing	
United States of America	14 Jun 2006	11/452,776		2008/0074033	Grant	7675228
United States of America	26 Apr. 2004 01 Nov 2017	10/831,845 PCT/US17/59448		2005/0238910 WO	Grant Filing	7233019

Exhibit A -- Page 53

2018/097937

International  
Procedure  
International  
Procedure

China	01 Nov 2017		PCT/US2017/59448	Filing
Japan	01 Nov 2017		PCT/US2017/59448	Filing
Korea	01 Nov 2017		PCT/US2017/59448	Filing
United States of America	15 Feb 2019	16/277331		

Exhibit A -- Page 54