Contact information

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Information on applicant's personal data

Name in English	Mijeong Song, Ph.D.
Place of residence; country, city.	Giheung-gu, Yongin-si, Gyeonggi-do, 446-712 South Korea
PO TRIZ presenting this person for certification	Vasily Leniachine (Scientific Advisor of the TRIZ Master Dissertation)
Name of Director of Methodological council of PO TRIZ	Dr. Sergei Ikovenko (Diploma No.68, 2006-10-14) Dr. Simon Litvin(Diploma No.28, September, 1998)
Duration of working in TRIZ	10 years since 2002 as a representative TRIZ consultant /teacher/facilitator in Research Management and Strategy Group/CTO team, Samsung Advanced Institute of Technology And Samsung Electronics
The certified person took a course (courses) of TRIZ studies in the amount of (number of) hours	N. Khomenko(OTSM-TRIZ & ARIZ, 80 hours, 2002), S. Ikovenko(Innovation Master Program with TechOptimizer SW, 80 hours, 2003), M. Rubin (8hours, 2003), Mr.&Mrs. Narbut(ARIZ and advanced topics, 24hours, 2003), A. Zusman & B. Zlotin(Inventive problem solving, 8hours, 2004) M. Sawaguchi (Technology Prediction, 24 hours, 2005) N. Shpackovsky (Evolution tree, 40 hours, 2005) Face to face training from Dr.Shpackovsky(’02-‘03), Mr.Lenyahine (’02-’07), Dr.Antonov(’04-‘07)
Activity in TRIZ: public speaking, lectures, consultations (in the amount (number of hours)	more than 200 hours of lecture organized presenting project in STA(Samsung TRIZ Association) conference
Qualification granted	B.S. 1994 Chemical Engineering, KAIST, Daejeon, Korea M.S. 1996 Chemical Engineering, KAIST, Daejeon, Korea -M.S. Thesis Title: Blood compatibility of hydrophilic polyurethane and hydrophobic polystyrene IPNs Ph.D. 2000 Chemical Engineering with interdisciplinary program of polymer science and engineering, KAIST, Daejeon, Korea -Ph.D. Thesis Title: Thermoreversible sol-gel transition behavior of aqueous solution of PEO-(aliphatic polyester)-PEO triblock copolymer Six sigma BB 2005 Certified TRIZ Specialist Level 4 (no.95, July2010)
Specialization (field of engineering, business, management, etc.)	Polymer, organic material Biomedical material and device Six sigma, design for six sigma
Specialty	MOT arrangement Six sigma/TRIZ integration Collaborative TRIZ Workshop so called Invention Workshop
Period of working according to specialty (in engineering, business, management, etc.)	15 years R&D work field experience since M.S.Degree
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Amount of payment (for certification)	Certification payment will be made immediately on the receipt of the invoice.
Testing method	1. 1 Dissertation for original method based on Technical System Evolution Theory for Analysis and Prediction of Technical System Evolution: So called “TEOM(Technical system Evolution Opportunity Matrix)” 2. 22 International /domestic publications including 1 book 3. 71 list and abstracts of published patents of a candidate (international only) 4. list of innovation projects, in the work on which the candidate was actively involved 5. 3 examples of the most effective and efficient solutions worked out by the candidate 6. 2 evidences on practical use of candidate's inventions, results of innovation projects, in which the candidate was actively involved
Note	Application for level 5 Application for Level 1~3 Certification Agent

Level 4 TRIZ specialist Certificate: No.95

Международная Ассоциация ТРИЗ — The International TRIZ Association

СЕРТИФИКАТ
специалиста по ТРИЗ

CERTIFICATE
of TRIZ specialist

№ 95

July 2010

Настоящий сертификат удостоверяет, что

This is to certify that

Mi Jeong Song

является специалистом по Теории Решения Изобретательских Задач (ТРИЗ)
в соответствии с требованиями Международной Ассоциации ТРИЗ

is a specialist in The Theory of Inventive Problem Solving (TRIZ)
in accordance with the requirements of the International TRIZ Association

Рекомендовал:
Recommended by:

Мастер ТРИЗ А. Кынин (диплом №66)
TRIZ Master A.Kynin (Diploma №66)

ТРИЗ - организация «Ассоциация ТРИЗ Samsung SCP»
The TRIZ organization «Samsung SCP TRIZ Association»

М. Баркан
M. Barkan
Президент Международной Ассоциации ТРИЗ
President of International TRIZ Association

А. Любомирский, Диплом №31
A. Lyubomirskiy, Diploma №31
По поручению Президиума, Мастер ТРИЗ
On behalf of MATRIZ Presidium, TRIZ Master

Testing Method 1. 1 Dissertation for original method based on Technical System Evolution Theory for Analysis and Prediction of Technical System Evolution: So called "TEOM(Technical system Evolution Opportunity Matrix)"

➔see attached article 1

Testing Method 2. International /domestic publications including 1 book

2.1. International Scientific Articles on TRIZ methodlogy

No	date	titile	authors	reference	Type
1	2004-04-30	TRIZ in Samsung R&D Process	Mi Jeong Song, Vassili Leniachine, and Se Ho Cheong	TRIZCon2004, Seattle, USA, Apr. 25-27, 2004	international
2	2004-10-02	Hands-On Logic for Inventive Problem Solving – 0.Prologue	Mi Jeong Song Ph.D., V. Leniachine, V., Sung Cheol Kim and S. Antonov, Doctor	TRIZ-journal , http://www.triz-journal.com/archives/2004/10/index.htm	international
3	2004-10-02	Hands-on Logic for Inventive Problem Solving – I.Formulating Technical Contradiction from Initial Situation	Mi Jeong Song Ph.D., V. Leniachine, V., Sung Cheol Kim and S. Antonov, Doctor	TRIZ-journal , http://www.triz-journal.com/archives/2004/10/index.htm	international
4	2007-04-21	Samsung's use of TRIZ in DFSS	Mi Jeong Song and Se Ho Cheong	IRI' six sigma and design for six sigma in R&D workshop , GE GRC Headquarters, Niskayuna, NY, Mar. 19-21, 2007	international
5	2007-07-07	METHODOLOGY DEVELOPMENT AND REAL SUCCESS STORIES FOR APPLICATION OF TRIZ IN IT/SW	Kim Sung Cheol, Antonov Sergey, Vasily Leniashin, Song MiJeong	TRIZ-fest 2007, Moscow, Russia, July, 7-12, 2007	international
6	2007-10-10	Managing Creativity in Industrial Research Organizations;	Joonki Kim, and MiJeong Song; Samsung Advanced Institute of Technology	US- Korea Conference on Science, Technology, and Entrepreneurship (organized by Korean-American Scientists and Engineers Association), August 9 – 12, 2007 Reston, Virginia, USA (http://ukc.ksea.org/ukc2007/pro_irdf.html)	international
7	2007-11-01	Increasing light extraction efficiency of GaN LED chip	Mi Jeong Song, Vasily Lenyashin and Jeong Wook Lee	TRIZ-journal , http://www.triz-journal.com/archives/2007/11/04/	international/ research article with case study
8	2011-11-02	**TRIZ in Samsung, Yesterday, Today and Tomorrow**	Ms. Mijeong Song, Ph.D. (Director, CTO Office, SAIT, Samsung Electronics, Korea)	ETRIA TRIZ Futures Conference , ITT, Dublin, Ireland, November 2 2011	International conference/ Keynote speech
9	2012-05-01	**Triggering navigators for innovative system design: The case of lab-on-a-chip technology**	Mi Jeong Song, Jeong-Gun Lee, Jong-Myeon Park, Sungjoo Lee	*Expert Systems with Applications*, ***In Press,*** *Available online 3 May 2012*	International/ research article

2.2. Korean Scientific Articles on TRIZ methodlogy

No	date	titile	authors	reference	Type
1	2008-12-10	Company vitalizing Idea 42 (in Korean)	Mijeong Song & Kyung Chul Kim	YeonHap Press , Dec. 10, 08, Seoul, Korea, book, 258page, ISBN-13 9788974330873	Domestic/ book
2	2011-03-02	Contradiction: the problem supervising core (in korean)	Mijeong Song	Donga Business Review, no 76 (2011.03.02)	Domestic/ article
3	2011-04-12	Rice cooker and shaver (in korean)	Mijeong Song	Donga Business Review, no 79 (2011.04.12)	Domestic/ article
4	2011-05-11	System evolves following the history of camera film (in korean)	Mijeong Song	Donga Business Review, no 81 (2011.05.11)	Domestic/ article
5	2011.06.08	Contradiction solving: moonwaking from the ideal result (in Korean)	Mijeong Song	Donga Business Review, no 83 (2011.06.08)	Domestic/ article
6	2011.07.05	Reverse thinking: a glass-less mixer (in Korean)	Mijeong Song	Donga Business Review, no85 (2011.07.05)	Domestic/ article
7	2011.08.08	Irony of Knowledge: Ther more knowledge, the more foolish (in Korean)	Mijeong Song	Donga Business Review, no 87 (2011.08.08)	Domestic/ article
8	2011.09.07	Divide to make it more useful than ever (in Korean)	Mijeong Song	Donga Business Review, no 89 (2011.09.07)	Domestic/ article
9	2011.9.30	Ideation method TRIZ with harmonizing logic and creativity : Imagine the futurre of system to capture microorganisms	Mijeong Song	TIM Alive Vol.1 No.1, pp38-43	Domestic/ article
10	2011.11.23	There was an steam engine before Watt…extraordinarily big steam engine (in Korean)	Mijeong Song	Donga Business Review, no94 (2011.11.23)	Domestic/ article
11	2012.01.11	Pebbles and a Wise Crow (in Korean)	Mijeong Song	Donga Business Review, no 97 (2012.01.11)	Domestic/ article
12	2012.04.01	Unveil Hidden Resource like a magic (in korean)	Mijeong Song	Donga Business Review, no 102 (2012.04.01)	Domestic/ article
13	2012.05.01	Vitamin C in Antartique, Surfacing Unrecognized Resources (in korean)	Mijeong Song	Donga Business Review, no 104 (2012.05.01)	Domestic/ article

Testing method 3. International patents

	Doc. no.	Title	Abstract	Assignee	Inventors
1	US7154221	Plasma display panel including sustain electrodes having double gap and method of manufacturing the panel	A plasma display panel (PDP) and a method of manufacturing the panel includes sustain electrodes having a double gap structure and a predetermined resistance value. Each of the sustain electrodes includes a main electrode for sustaining a discharge and an auxiliary electrode for starting a low-voltage discharge without decreasing efficiency. A gap between auxiliary electrodes included in different sustain electrodes, respectively, is narrower than a gap between the different sustain electrodes. Each auxiliary electrode is formed between barrier ribs or immediately above a barrier rib. A ditch is formed in a dielectric layer covering the main electrodes and the auxiliary electrodes. The ditch is formed immediately above an auxiliary electrode.	Samsung SDI Co., Ltd. (Suwon-si, KR)	Son, Seung-hyun (Gyeonggi-do, KR) Kim, Young-mo (Suwon-si, KR) Hatanaka, Hidekazu (Seongnam-si, KR) Leniachine, Vassili (Suwon-si, KR) Shpackovsky, Nikolai (Suwon-si, KR) Jang, Sang-hun (Youngin-si, KR) Song, Mi-jeong (Suwon-si, KR) Kim, Hyo-june (Youngin-si, KR) Kim, Gi-young (Chungju-si, KR) Park, Hyoung-bin (Seongnam-si, KR)
2	US7268489	Organic light emitting device having metal electrodes in a groove with steps in a substrate	An organic light emitting device includes first and second metal layers used as electrodes on a substrate, an electron transport layer on the first metal layer, a first partition wall insulating the first metal layer from the second metal layer and extending onto the electron transport layer along the first metal layer, a second partition wall on the first metal layer around the electron transport layer, a third partition wall separated from the first partition wall and on the second metal layer, an organic light emitting layer on the electron transport layer, a hole transport layer on the organic light emitting layer and contacting the second metal layer, a protecting layer covering the hole transport layer and extending to the first and second metal layers beyond the second and third partition walls, and sealing materials filling spaces between the protecting layer and the first and second layers.	Samsung SDI Co., Ltd. (Suwon, KR)	Kim, Mu-gyeom (Hwaseong-si, KR) Kim, Sang-yeol (Gwacheon-si, KR) Leniachine, Vassili (Suwon-si, KR) Song, Mi-jeong (Suwon-si, KR)
3	US7282746	Light emitting diode and method of fabricating the same	A light emitting diode (LED) and a method are provided for fabricating the a LED with an improved structure for better light emitting efficiency and better light output performance. The LED includes an n-GaN layer formed on a substrate to have a plurality of protrusions, thereby having an uneven surface, wherein a side surface of the protrusions is inclined with a first inclination angle α (35°≦α≦90°) with respect to an upper surface of the substrate; an active layer conformally formed on the surface of the n-GaN layer, wherein the surface of the active layer formed on the side surface of the protrusions is inclined with a second inclination angle β (35°≦β≦α) with respect to the upper surface of the substrate; a p-GaN layer conformally formed on the surface of the active layer, wherein the surface of the p-GaN layer formed on the surface of the inclined portion of the active layer is inclined with a third inclination angle γ (20°≦γ<β) with respect to the upper surface of the substrate; and an n-electrode formed on a predetermined area of the n-GaN layer to correspond to the p-electrode.	Samsung Electro-Mechanics Co., Ltd. (Suwon-si, Gyeonggi-do, KR)	Lee, Jeong-wook (Seongnam-si, KR) Leniachine, Vassili (Suwon-si, KR) Song, Mi-jeong (Suwon-si, KR) Yoon, Suk-ho (Seoul, KR) Kim, Hyun-soo (Hwaseong-si, KR)
4	US7362123	Inspection apparatus for thin film transistor substrate	An inspection apparatus for a TFT substrate formed with a plurality of pixels, includes a reference substrate being opposite to and spaced from the TFT substrate and formed with a plurality of reference patterns corresponding to the pixels, a power supply to supply power to both a predetermined number of the pixels and the corresponding reference pattern to form an electric field in a space between the TFT substrate and the reference substrate, an electron beam emitter to emit an electron beam to travel from a first side to a second side of the space, an electron beam detector to detect the electron beam emitted from the electron beam emitter and passed through the space, and a controller to determine whether the TFT substrate includes a defective pixel based on a location of the electron beam detected by the electron beam detector.	Samsung Electronics Co., Ltd. (Suwon-si, KR)	Choi, Ho-seok (Suwon-si, KR) Antonov, Sergey (Suwon-si, KR) Ahn, Hyeong-min (Yongin-si, KR) Ha, Jeong-su (Suwon-si, KR) Vassili, Lemjachine (Suwon-si, KR) Song, Mi-jeong (Suwon-si, KR)

			Thus, the inspection apparatus can correctly and quickly inspect the TFT substrate for defects in a low vacuum state regardless a size of the TFT substrate.		
5	US7449360	Phase change memory devices and fabrication methods thereof	In a memory device, at least one conductive contact having a width of less than, or equal to, about 30 nm may be formed on a first electrode. A dielectric layer may be formed on the sides of the at least one conductive contact, and a phase change material film may be formed on the conductive contact. A second electrode may be formed on the phase change material.	Samsung Electronics Co., Ltd. (Suwon-si, KR)	Suh, Dong-seok (Seoul, KR) Khang, Yeon-ho (Yongin-si, KR) Leniachine, Vassill (Suwon-si, KR) Song, Mi-jeong (Suwon-si, KR) Antonov, Sergey (Petersburg, RU)
6	US7482189	Light emitting diode and method of fabricating the same	A light emitting diode (LED) and a method are provided for fabricating the a LED with an improved structure for better light emitting efficiency and better light output performance. The LED includes an n-GaN layer formed on a substrate to have a plurality of protrusions, thereby having an uneven surface, wherein a side surface of the protrusions is inclined with a first inclination angle α (35°≦ α≦ 90°) with respect to an upper surface of the substrate; an active layer conformally formed on the surface of the n-GaN layer, wherein the surface of the active layer formed on the side surface of the protrusions is inclined with a second inclination angle β (35°≦ β≦ α) with respect to the upper surface of the substrate; a p-GaN layer conformally formed on the surface of the active layer, wherein the surface of the p-GaN layer formed on the surface of the inclined portion of the active layer is inclined with a third inclination angle γ (20°≦ γ≦ β) with respect to the upper surface of the substrate; and an n-electrode formed on a predetermined area of the n-GaN layer to correspond to the p-electrode.	Samsung Electronics Co., Ltd. (Suwon-si, KR)	Lee, Jeong-wook (Seongnam-si, KR) Leniachine, Vassili (Suwon-si, KR) Song, Mi-jeong (Suwon-si, KR) Yoon, Suk-ho (Seoul, KR) Kim, Hyun-soo (Hwaseong-si, KR)
7	US7488936	TFT array inspecting apparatus	A TFT array inspecting apparatus inspects a TFT array disposed at either an inclined position and a level position. The TFT array inspecting apparatus includes a vacuum chamber, a stage disposed in the vacuum chamber so that a TFT array to be inspected is disposed on the stage, an electron gun disposed opposite to the stage in the vacuum chamber to generate an electron beam onto the TFT array, an electron detecting unit to detect secondary electrons emitted from the TFT array by the electron gun, and at least one elevating unit to move the TFT array move between a level position and an inclined position having a designated angle with the level position.	Samsung Electronics Co., Ltd. (Suwon-si, KR)	Choi, Ho Seok (Suwon-si, KR) Lenyashine, Vasily (Suwon-Si, KR) Ahn, Hyeong Min (Yongin-Si, KR) Ha, Jeong Su (Suwon-Si, KR) Antonov, Sergey (Suwon-Si, KR) Song, Mi Jeong (Suwon-Si, KR)
8	US7494208	Inkjet printhead having a cantilever actuator	An inkjet printhead having a cantilever actuator, the inkjet printhead including a plurality of ink chambers containing ink to be ejected; a manifold containing ink to be supplied to the plurality of ink chambers; a plurality of restrictors supplying ink to the plurality of ink chambers from the manifold; a plurality of nozzles ejecting ink from the plurality of ink chambers; and a plurality of cantilever actuators each installed in each of the plurality of ink chambers and having one fixed end and the other deflectable end, such that pressure for ejection of ink is applied due to the deflection of the other end of the cantilever actuator to the ink inside the ink chamber. The cantilever actuator may be made of a bimorph element, eject ink through the nozzle from the ink chamber, and also prevent backflow of ink from the ink chamber to the restrictor by virtue of the deflection of the other end thereof. Since the cantilever actuator can have a greater displacement and can prevent backflow of ink, the size of the ink chamber needed to eject ink droplets of uniform volume can be reduced, and thus the number of channels per inch (CPI) of the inkjet printhead can be increased.	Samsung Electronics Co., Ltd. (Suwon-si, KR)	Kwon, Kye-si (Seoul, KR) Sung, Gee-young (Daegu-si, KR) Kim, Seong-jin (Seongnam-si, KR) Shin, Seung-jo (Seoul, KR) Song, Mi-jeong (Suwon-si, KR)

9	US7549737	Piezoelectric inkjet printhead having a unidirectional shutter	A piezoelectric inkjet printhead including a reversible shutter disposed in an ink flow path is disclosed. The inkjet printhead may includes a plurality of ink pressure chambers, a plurality of piezoelectric actuators to provide the plurality of ink pressure chambers with a driving force for ink ejection, an ink manifold to supply the plurality of pressure chambers, a plurality of restrictors disposed in the ink flow path between the manifold and the plurality of pressure chambers, a plurality of ink ejecting nozzles coupled to the plurality of pressure chambers, and a plurality of unidirectional shutters. The shutters may be disposed at respective outlets of the plurality of restrictors and may be adapted to open the restrictor when ink is supplied from the restrictor to the pressure chamber and close the restrictor and restrict or prevent the backflow of ink when ink is ejected from the pressure chamber through the nozzle.	Samsung Electronics Co., Ltd. (Suwon-si, KR)	Kwon, Kye-si (Seoul, KR) Kim, Seong-jin (Seongnam-si, KR) Shin, Seung-joo (Seoul, KR) Sung, Gee-young (Daegu-si, KR) Kuk, Keon (Yongin-si, KR) Song, Mi-jeong (Suwon-si, KR)
10	US7595084	Organic light emitting device and method of manufacturing the same	An organic light emitting device can includes first and second metal layers used as electrodes on a substrate, an electron transport layer on the first metal layer, a first partition wall insulating the first metal layer from the second metal layer and extending onto the electron transport layer along the first metal layer, a second partition wall on the first metal layer around the electron transport layer, a third partition wall separated from the first partition wall and on the second metal layer, an organic light emitting layer on the electron transport layer, a hole transport layer on the organic light emitting layer and contacting the second metal layer, a protecting layer covering the hole transport layer and extending to the first and second metal layers beyond the second and third partition walls, and sealing materials filling spaces between the protecting layer and the first and second layers.	Samsung Mobile Display Co., Ltd. (Yongin, KR)	Kim, Mu-gyeom (Hwaseong-si, KR) Kim, Sang-yeol (Gwacheon-si, KR) Leniachine, Vassili (Suwon-si, KR) Song, Mi-jeong (Suwon-si, KR)
11	US7599216	Phase change memory devices and fabrication methods thereof	In a memory device, a transistor may be formed on a substrate, and a first electrode may be electrically connected thereto. A phase change material film may be vertically formed on the first electrode, and a second electrode may be formed on the phase change material film.	Samsung Electronics Co., Ltd. (Gyeonggi-do, KR)	Suh, Dong-seok (Seoul, KR) Khang, Yoon-ho (Yongin-si, KR) Noh, Jin-seo (Seoul, KR) Leniachine, Vassili (Suwon-si, KR) Song, Mi-jeong (Suwon-si, KR)
12	US7682851	Organic light emitting display and manufacturing method thereof	An organic light emitting display and a manufacturing method thereof include an improved encapsulation layer. The encapsulation layer of the organic light emitting display includes an organic layer uniformly covering bank portions and light emitting areas on a substrate; and an inorganic layer formed thicker on the light emitting areas than on the bank portions. In the organic light emitting display, the inorganic layer is thick on the light emitting area in which a sealing ability is required and the bank portion is thin in order to provide flexibility. Therefore, the encapsulation layer can be formed more easily compared to an encapsulation layer on a device in which the organic layer and inorganic layer are alternately formed at least 10 times.	Samsung Electronics Co., Ltd. (KR)	Lee, Young-gu (Seoul, KR) Kang, Sung-kee (Seongnam-si, KR) Oh, Tae-sik (Suwon-si, KR) Lee, Ho-nyeon (Seongnam-si, KR) Ko, Ick-hwan (Seoul, KR) Chun, Young-tea (Suwon-si, KR) Song, Mi-jeong (Suwon-si, KR)
13	US7722160	Nozzle plate, printhead having the same and methods of operating and manufacturing the same	A nozzle plate and printhead allowing for control of a deflection direction of ejected droplets using electro-wetting, and methods of operating and manufacturing the same. The nozzle plate has at least one nozzle for ejecting fluid and includes electrode segments disposed along a circumference of the nozzle, an insulating layer disposed on a surface of each electrode segment so as to contact fluid in the nozzle, the insulating layer divided into at least two insulating layer segments corresponding to the electrode segments, and a wire pattern electrically coupled to the electrode segments.	Samsung Electronics Co., Ltd. (Suwon-si, Gyeonggi-do, KR)	Sung, Gee-young (Daegu-si, KR) Kim, Min-soo (Seoul, KR) Kwon, Kye-si (Seoul, KR) Oh, Se-young (Yongin-si, KR) Baek, Seog-soon (Suwon-si, KR) Song, Mi-jeong (Suwon-si, KR)

14	US7802874	Restrictors with structure to prevent back flow and inkjet head having the same	A restrictor with a structure to prevent a back flow of ink and an inkjet head including the restrictor. In the inkjet head, an ink channel is formed in a channel plate, and the ink channel includes an ink inlet, a plurality of pressure chambers, a manifold, a plurality of restrictors respectively connecting the pressure chambers to the manifold, and a plurality of nozzles. Piezoelectric actuators are formed on the channel plate. Each of the restrictors includes a plurality of protrusions formed on an inner surface thereof in a structure suitable to increase a flow resistance of the restrictor when ink flows from the pressure chamber to the manifold through the restrictor. Each of the protrusions includes a first surface facing a flow of ink moving through the restrictor in a direction from the manifold to the pressure chamber, and a second surface facing a flow of ink moving through the restrictor in a direction from the pressure chamber to the manifold. The first surface has a low flow resistance, and the second surface has a high flow resistance. Therefore, a black flow of ink is restricted when ink is ejected, and sufficient ink can be supplied through the restrictor during an ink refill process.	Samsung Electronics Co., Ltd (Suwon-si, KR)	Wee, Sang-kwon (Hwaseong-si, KR) Oh, Se-young (Yongin-si, KR) Chung, Jae-woo (Yongin-si, KR) Song, Mi-jeong (Suwon-si, KR)
15	US7872908	Phase change memory devices and fabrication methods thereof	In a memory device, a transistor may be formed on a substrate, and a first electrode may be electrically connected thereto. A phase change material film may be vertically formed on the first electrode, and a second electrode may be formed on the phase change material film.	Samsung Electronics, Co., Ltd. (Gyeonggi-do, KR)	Suh, Dong-seok (Seoul, KR) Khang, Yoon-ho (Yongin-si, KR) Noh, Jin-seo (Seoul, KR) Leniachine, Vassili (Suwon-si, KR) Song, Mi-jeong (Suwon-si, KR)
16	US7927702	Flat panel display device and manufacturing method for the same	A flat panel display device comprises a substrate, an organic light emitting diode formed on the substrate, an inner stack encapsulating the light emitting diode and comprising at least one organic layer and one inorganic layer, and an outer stack deposited to cover the inner stack and comprising at least two polymer layers and an adhesive and bonding layer disposed therebetween to combine the at least two polymer layers and a polymer heat-curing film disposed at an interface of each of the polymer layers and the adhesive and bonding layer and cured by heat treatment. According to the present invention, the flat panel display device and a manufacturing method for the same reliably seals the organic light emitting device and prevents degradation by permeation of external harmful materials, while providing high flexibility and low manufacturing cost.	Samsung Electronics Co., Ltd. (KR)	Lee, Young-gu (Suwon-si, KR) Kang, Sung-kee (Seongnam-si, KR) Kim, Jung-woo (Yongin-si, KR) Lee, Ho-nyeon (Seongnam-si, KR) Ko, Ick-hwan (Seoul, KR) Chun, Young-tea (Suwon-si, KR) Song, Mi-jeong (Suwon-si, KR)
17	US8029931	Anode active material, method of preparing the same, and anode and lithium battery containing the material	An anode active material comprises graphite core particles, and a first coating layer and a second coating layer formed on the surface of the graphite core particles. The first coating layer comprises silicon microparticles and the second coating layer comprises carbon fiber.	Samsung SDI Co., Ltd. (Suwon, KR)	Im, Dong-min (Seoul, KR) Song, Mi-jeong (Suwon-si, KR) Park, Jin-hwan (Seoul, KR) Kim, Gue-sung (Yongin-si, KR)
18	US8038263	Piezoelectric inkjet head	A piezoelectric inkjet head includes a plurality of pressure chambers filled with ink that is to be ejected, a manifold to supply ink to the pressure chambers and extending in both sides of each of the pressure chambers parallel to a direction in which the pressure chambers are arranged, a restrictor to connect the manifold to each of the pressure chambers, and to be connected to both ends of each of the pressure chambers in a longitudinal direction, a plurality of piezoelectric actuators respectively corresponding to the pressure chambers, and at least one nozzle respectively connected to each of the pressure chambers, and to be symmetrically arranged with respect to the centerline in a longitudinal direction of each of the pressure chamber. The at least one nozzle includes a first nozzle and at least two second nozzles, the first nozzle is disposed to correspond to the	Samsung Electronics Co., Ltd. (Suwon-si, KR)	Oh, Se-young (Yongin-si, KR) Wee, Sang-kwon (Swon-si, KR) Song, Mi-jeong (Suwon-si, KR)

			centerline in the longitudinal direction of each of the pressure chambers, and the second nozzles are disposed in both sides of the first nozzle.		
19	US8169559	Array substrate and method of manufacturing the same	In an array substrate and a method of manufacturing the array substrate, an array substrate includes a first switching element, a second switching element, a third switching element and a fourth switching element. The first switching element is electrically connected to a first data line. The second switching element is electrically connected to a second data line adjacent to the first data line. The third switching element is electrically connected to a data power line interposed between the first and second data lines. The fourth switching element is electrically connected to a gate power line receiving a voltage having different polarity from a voltage applied to the data power line. Therefore, light transmittance, opening ratio and display quality are improved.	Samsung Electronics Co., Ltd. (KR)	Woo, Hwa-sung (Suwon-si, KR) Jang, Joo-nyung (Gyeongsan-si, KR) Shin, Cheol (Hwaseong-si, KR) Um, Yoon-sung (Yongin-si, KR) Song, Mi-jeong (Suwon-si, KR)
20	EP1435638A2	Plasma display panel including sustain electrodes having double gap and method of manufacturing the same	A plasma display panel (PDP) including sustain electrodes (40;42) having a double gap (g2;g3) and a method of manufacturing the same are provided. The PDP includes sustain electrodes (40,42) having a double gap structure and a predetermined resistance value. Each of the sustain electrodes (40;42) includes a main electrode for sustaining discharge and an auxiliary electrode for starting a low-voltage discharge without decreasing efficiency. A gap (g3) between auxiliary electrodes included in different sustain electrodes (40;42), respectively, is narrower than a gap (g2) between the different sustain electrodes (40;42). Each auxiliary electrode is formed between barrier ribs or immediately above a barrier rib. A ditch is formed in a dielectric layer covering the main electrodes and the auxiliary electrodes. The ditch is formed immediately above an auxiliary electrode	SAMSUNG SDI CO LTD (KR)	Son, Seung-hyun (KR) Kim, Young-mo (KR) Hatanaka, Hidekazu (KR) Leniachine, Vassili (KR) Shpackovsky, Nikolai (KR) Jang, Sang-hun (KR) Song, Mi-jeong (KR) Kim, Hyo-june (KR) Kim, Gi-young (KR) Park, Hyoung-bin (KR)
21	EP1652672A1	Inkjet printhead having cantilever actuator	Provided is an inkjet printhead having a cantilever actuator. The inkjet printhead includes: a plurality of ink chambers containing ink to be ejected; a manifold containing ink to be supplied to the plurality of ink chambers; a plurality of restrictors supplying ink to the plurality of ink chambers from the manifold; a plurality of nozzles ejecting ink from the plurality of ink chambers; and a plurality of cantilever actuators each installed in each of the plurality of ink chambers and having one fixed end and the other deflectable end, such that pressure for ejection of ink is applied due to the deflection of the other end of the cantilever actuator to the ink inside the ink chamber. The cantilever actuator may be made of a bimorph element, and eject ink through the nozzle from the ink chamber and also prevent backflow of ink from the ink chamber to the restrictor by virtue of the deflection of the other end thereof. Since the cantilever actuator can have a greater displacement and can prevent backflow of ink, the size of the ink chamber needed to eject ink droplets of uniform volume can be reduced, and thus the number of channels per inch (CPI) of the inkjet printhead can be increased.	SAMSUNG ELECTRONICS CO LTD (KR)	Kwon, Kye-si (KR) Kim, Seong-jin (KR) Sung, Gee-young (KR) Shin, Seung-joo (KR) Song, Mi-jeong (KR)
22	EP1652674A2	Nozzle plate unit, inkjet print head with the same and method of manufacturing the same	A nozzle plate unit (100) that is designed to control an ejecting direction of ink droplets by using an electro-wetting phenomenon, an inkjet print head with the same, and a method of manufacturing the nozzle plate unit are provided. The nozzle plate unit includes at least one penetration nozzle (150), an electrode (120) divided into at least two segments (120a,120b,120c,120d) formed along an inner circumference defining the nozzle, and a hydrophobic insulating layer (140) divided into at least two segments (140a,140b,140c,140d) formed on surfaces of the segments of the electrode. When a voltage is applied between respective segments of the electrode and the fluid, a contacting angle of the fluid with the respective segments of the hydrophobic insulating	SAMSUNG ELECTRONICS CO LTD (KR)	Sung, Gee-young (KR) Kwon, Kye-si (KR) Kim, Min-soo (KR) Se-young OH. (KR) Baek, Seog-soon (KR) Song, Mi-jeong (KR)

			layer is varied by an electro-wetting phenomenon, thereby deflecting an ejecting direction of the fluid ejected through the nozzle. The inkjet print head includes a passage plate (210,220) including an ink passage having a plurality of ink chambers (204) in which ink to be ejected is filled, an actuator (300) providing ejecting force of the ink filled in the plurality of ink chambers, and the nozzle plate unit attached to the passage plate. Accordingly, the ejecting direction of ink droplets ejected through the nozzle can be controlled in various directions and thus the image can be printed at higher DPI even when a print head with a low CPI is used.		
23	EP1655136A2	Piezoelectric inkjet printhead having unidirectional shutter	Provided is a piezoelectric inkjet printhead. The inkjet printhead includes a plurality of pressure chambers containing ink to be ejected, a plurality of piezoelectric actuators providing a driving force for ink ejection to the plurality of pressure chambers, a manifold containing ink to be supplied to the plurality of pressure chambers, a plurality of restrictors supplying ink from the manifold to the plurality of pressure chambers, a plurality of nozzles ejecting ink from the plurality of pressure chambers, and a plurality of unidirectional shutters each installed at an outlet of each of the plurality of restrictors and adapted to open the restrictor when ink is supplied from the restrictor to the pressure chamber and close the restrictor and prevent backflow of ink when ink is ejected from the pressure chamber through the nozzle. Therefore, since backflow of ink is prevented by the unidirectional shutter, the area of a vibration plate and the volume of the pressure chamber needed to eject ink droplets of uniform volume can be reduced, thereby increasing the number of channels per inch (CPI) of the piezoelectric inkjet printhead.	SAMSUNG ELECTRONICS CO LTD (KR)	Kwon, Kye-si (KR) Kim, Seong-jin (KR) Shin, Seung-joo (KR) Sung, Gee-young (KR) Kuk, Keon (KR) Song, Mi-jeong (KR)
24	EP1902848A2	Inkjet printer and printing method using the same	Provided are an inkjet printer and a printing method using the inkjet printer. The inkjet printer forming one image on a single sheet of paper by performing a plurality of printing jobs on the paper includes a print head which is fixed to the inkjet printer and performs a printing job on the paper which moves relative to the print head, and a paper rotating member rotating the paper on which printing job has been performed by the print head 90 degrees in a horizontal direction, wherein the paper, which is fed to the print head in a first direction for the printing job to be performed by the print head, is rotated 90 degrees in a horizontal direction by the paper rotating member, and then the rotated paper is fed to the print head in a second direction opposite to the first direction and a printing job is repeatedly performed on the paper by the print head	Samsung Electronics Co., Ltd. (416, Maetan-dong, Yeongtong-gu, Suwon-si Gyeonggi-do 443-742, KR)	Sohn, Dong-kee (Samsung Advanced Inst. of Tech.,San 14-1 Nongseo-dong,, Giheung-gu, Yongin-si, Gyeonggi-do, KR) Kim, Min-soo (Samsung Advanced Inst. of Tech.,San 14-1 Nongseo-dong,, Giheung-gu, Yongin-si, Gyeonggi-do, KR) Song, Mi-jeong (Samsung Advanced Inst. of Tech.,San 14-1 Nongseo-dong, Giheung-gu, Yongin-si, Gyeonggi-do, KR)
25	EP2209042A1	Array substrate and method of manufacturing the same	In an array substrate (100) and a method of manufacturing the array substrate (100), an array substrate (100) includes a first switching element (Qa), a second switching element (Qb), a third switching element (Qc) and a fourth switching element (Qd). The first switching element (Qa) is electrically connected to a first data line (171a). The second switching element (Qb) is electrically connected to a second data line (171b) adjacent to the first data line (171a). The third switching element (Qc) is electrically connected to a data power line (171c) interposed between the first and second data lines (171a,171b). The fourth switching element (Qd) is electrically connected to a gate power line (125) receiving a voltage having different polarity from a voltage applied to the data power line (171c). Therefore, light transmittance, opening ratio and display quality are improved.	Samsung Electronics Co., Ltd. (416 Maetan-dong Yeongtong-gu, Suwon-si, Gyeonggi-do 442-742, KR)	Woo, Hwa-sung (419-107 Jugong 4 Danji Apt.Maetan 1-dongYeongton-gu, Suwon-si Gyeonggi-do, KR) Jang, Joo-nyung (102-102 Gyeongsan Woobang MansionNo. 138-6, Jeongpyeong-dong, Gyeongsan-si Gyeongbuk, KR) Shin, Cheol (201-203 Unam Firstvill 2 Cha Apt.Neung-dong, Hwaseong-si Gyeonggi-do, KR) Um, Yoon-sung (216-1702 Sanghyeon Maeul Ssangyong 2 Cha Apt.Sanghyeon-dongSuji-gu, Yongin-si Gyeonggi-do, KR) Song, Mi-jeong (102-1601 Hyundai I-Park Apt.Mangpo-dongYeongtong-gu, Suwon-si Gyeonggi-do, KR)

26	EP2241932A1	Array substrate and method of manufacturing the same	In an array substrate (100) and a method of manufacturing the array substrate (100), an array substrate (100) includes a first switching element (Qa), a second switching element (Qb), a third switching element (Qc) and a fourth switching element (Qd). The first switching element (Qa) is electrically connected to a first data line (171a). The second switching element (Qb) is electrically connected to a second data line (171b) adjacent to the first data line (171a). The third switching element (Qc) is electrically connected to a data power line (171c) interposed between the first and second data lines (171a,171b). The fourth switching element (Qd) is electrically connected to a gate power line (125) receiving a voltage having different polarity from a voltage applied to the data power line (171c). Therefore, light transmittance, opening ratio and display quality are improved.	Samsung Electronics Co., Ltd. (416 Maetan-dong, Yeongtong-gu Suwon-city, Gyeonggi-do 442-742, KR)	Woo, Hwa-sung (419-107 Jugong 4 Danji Apt.Maetan 1-dongYeongtong-guSuwon-si, Gyeonggi-do, KR) Jang, Joo-nyung (102-102 Gyeongsan Woobang Mansion138-6 Jeongpyeong-dongGyeongsan-si, Gyeongbuk, KR) Shin, Cheol (201-203 Unam Firstvill 2 Cha Apt.Neung-dongHwaseong-si, Gyeonggi-do, KR) Um, Yoon-sung (216-1702 Sanghyeon Maeul Ssangyong 2 Cha Apt.Sanghyeon-dongSuji-guYongin-si, Gyeonggi-do, KR) Song, Mi-jeong (102-1601 Hyundai I-Park Apt.Mangpo-dongYeongtong-guSuwon-si, Gyeonggi-do, KR)
27	EP2431803A1	Array substrate and method of manufacturing the same	In an array substrate and a method of manufacturing the array substrate, an array substrate includes a first switching element (Qa), a second switching element (Qb), a third switching element (Qc) and a fourth switching element (Qd). The first switching element (Qa) is electrically connected to a first data line (Dj). The second switching element (Qb) is electrically connected to a second data line (Dj+1) adjacent to the first data line (Dj). The third switching element (Qc) is electrically connected to a data power line (-Dj+½) interposed between the first (Dj) and second data lines (Dj+1). The fourth switching element (Qd) is electrically connected to a gate power line (+Dj+½) receiving a voltage having different polarity from a voltage applied to the data power line (-Dj+½) . Therefore, light transmittance, opening ratio and display quality are improved	Samsung Electronics Co., Ltd. (416 Maetan-dong, Yeongtong-gu Suwon-city, Gyeonggi-do 442-742, KR)	Woo, Hwa-sung (419-107 Jugong 4 Danji Apt., Maetan 1-dongYeongtong-gu, Suwon-si Gyeonggi-do, KR) Jang, Joo-nyung (102-102 Gyeongsan Woobang mansionNo. 138-6, Jeongpyeong-dong, Gyeongsan-si Gyeongbuk, KR) Shin, Cheol (201-203 Unam Firstvill 2 Cha Apt.,Neung-dong, Hwaseong-si Gyeonggi-do, KR) Um, Yoon-sung (216-1702 Sanghyeon Maeul Ssangyong 2Cha Apt., Sanghyeon-dongSuji-gu, Yongin-si Gyeonggi-do, KR) Song, Mi-jeong (102-1601 Hyundai I-Park Apt.Mangpo-dongYeongtong-gu, Suwon-si Gyeonggi-do, KR)
28	JP2004214200	PLASMA DISPLAY PANEL HAVING DISCHARGE MAINTAINING ELECTRODE WITH DOUBLE GAP, AND MANUFACTURING METHOD OF THE SAME	PROBLEM TO BE SOLVED: To provide a plasma display panel having a discharge maintaining electrode with double gap, and provide a manufacturing method of the same. SOLUTION: The plasma display panel is provided with the discharge sustaining electrode formed from a double gap structure having a prescribed resistance. The discharge sustaining electrode is composed of main electrodes for main discharge and auxiliary electrodes for initiating low voltage discharge without lowering the efficiency, and the distance between the auxiliary electrodes is made narrower than the distance between the main electrodes. The auxiliary electrodes are located between separation walls or at the position corresponding to just upper side of the separation walls. A ditch or a groove is formed on the discharge maintaining electrodes and a dielectric layer covering the auxiliary electrodes. The groove is formed at just upper side of the auxiliary electrodes. By utilizing this invention, a discharge voltage is sharply reduced comparing to a conventional PDP while maintaining the gas pressure of the plasma formation gas used for the PDP as high as that of a conventional PDP.	SAMSUNG SDI CO LTD	Son, Seung-hyun Kim, Young-mo Hatanaka, Hidekazu Leniachine, Vassili Shpackovsky, Nikolai Jang, Sang-hun Song, Mi-jeong Kin, Koshun Kim, Ki-young Park, H-bin

29	JP2005197254	ORGANIC LIGHT EMITTING ELEMENT AND ITS MANUFACTURING METHOD	PROBLEM TO BE SOLVED: To provide an organic light emitting element and its method of manufacture increasing light emitting efficiency while solving problems arising from the use of an ITO (Indian tin oxide) layer. SOLUTION: The organic light emitting element and its manufacturing method contain a substrate, a first and a second metal layers formed on the substrate and used as an electrode, an electronic transmission layer provided on the first metal layer, a first barrier rib insulating the first and the second metal layers and extended along the first metal layer to the electron transmission layer, a second barrier rib provided on the first metal layer surrounding the electronic transmission layer, a third barrier rib formed on the second metal layer separated from the first barrier rib, an organic light emitting layer formed on the electronic transmission layer, a holes transmission layer provided on the organic light emitting layer and in contact with the second metal layer, a protective layer covering the holes transmission layer and extended to the first and the second metal layers outside of the second and the third barrier ribs and sealant filling up the space between the protective layer and the first and the second metal layers	SAMSUNG SDI CO LTD	Kim, Mu-gyeom Kim, Sang-yeol Leniachine, Vassili Song, Mi-jeong
30	JP2006000658	INTEGRATED MULTIPLE ELECTRODE FOR MEASUREMENT OF BIOLOGICAL SIGNAL, METHOD AND APPARATUS FOR MEASUREMENT OF BIOLOGICAL SIGNAL USING THE SAME, AND LEAD SEARCHING METHOD USING THE SAME	PROBLEM TO BE SOLVED: To provide an integrated multiple electrode for measurement of biological signals, a method and apparatus for the measurement of biological signals using the same, and a lead searching method using the same. SOLUTION: This apparatus for the measurement of biological signals using the integrated multiple electrode is constituted of: the integrated multiple electrode constituted on a non-conductive patch and comprising a sensor array including a grounding electrode and a plurality of individual electrodes; an electrode selecting part to select a plurality of electrode combinations comprising a pair of reference electrode and a measurement electrode from a plurality of individual electrodes according to kinds of biological signals to be measured; and a signal processing part for obtaining biological signals from a plurality of the electrode combinations of pairs of reference electrode and measurement electrode.	SAMSUNG ELECTRONICS CO LTD	Yeo, Hyung-sok Lee, Jeong-whan Song, Mi-jeong Kim, Sung-cheol Whang, Jin-sang
31	JP2006123550	NOZZLE PLATE, INKJET PRINTING HEAD WITH THE SAME, AND MANUFACTURING METHOD OF NOZZLE PLATE	PROBLEM TO BE SOLVED: To provide a nozzle plate which can print images of a high resolution, and to provide an inkjet printing head and a manufacturing method for a nozzle plate. SOLUTION: An electrode 120 divided to at least two segments is formed in the periphery of a nozzle 150. A hydrophobic insulating film 140 is formed at surfaces of the segments of the electrode. In the nozzle plate 100, a contact angle of a fluid to the segment of the hydrophobic insulating film is changed by the electro wetting phenomenon by applying a voltage to between the segment of the electrode and the fluid in the nozzle, whereby an ejection direction of the ejection fluid is deflected through the nozzle. The inkjet printing head is equipped with a passage plate 200, an actuator 300 which provides a plurality of ink chambers 204 with a driving force of ejection of ink, and the nozzle plate adhered to the passage plate. The ejection direction of ink liquid droplets ejected from the nozzle is thus controlled, so that images of a high DPI can be printed by a head of a low CPI.	SAMSUNG ELECTRONICS CO LTD	Sung, Gee-young Kim, Min-soo Kwon, Kye-si OH, Se-young Baek, Seog-soon Song, Mi-jeong

32	JP2006130916	INKJET PRINTING HEAD OF PIEZOELECTRIC SYSTEM WITH ONE-WAY SHUTTER	PROBLEM TO BE SOLVED: To provide an inkjet printing head of a piezoelectric system with one-way shutters. SOLUTION: The inkjet printing head is equipped with a plurality of pressure chambers to be filled with ink to be ejected, a piezoelectric actuator which provides a driving force for ejection of the ink to each of the plurality of pressure chambers, a manifold which includes the ink supplied to each of the plurality of pressure chambers, a plurality of restrictors for feeding the ink to the plurality of pressure chambers from the manifold, a plurality of nozzles for ejecting the ink from the plurality of pressure chambers, and a plurality of the one-way shutters set at respective outlets of the plurality of restrictors. The one-way shutter opens the restrictor when the ink is supplied from the restrictor to the pressure chamber, and blocks a backflow of the ink by shutting the restrictor when the ink is ejected from the pressure chamber through the nozzle.	SAMSUNG ELECTRONICS CO LTD	Kwon, Kye-si Kim, Seong-jin Shin, Seung-ju Sung, Gee-young Kuk, Keon Song, Mi-jeong
33	JP2006130917	INKJET PRINTING HEAD WITH CANTILEVER ACTUATOR	PROBLEM TO BE SOLVED: To provide an inkjet printing head equipped with cantilever actuators. SOLUTION: The inkjet printing head is equipped with a plurality of ink chambers to be filled with ink to be ejected, a manifold which stores the ink to be supplied to the plurality of ink chambers, a plurality of restrictors for feeding the ink from the manifold to each of the plurality of ink chambers, a plurality of nozzles for ejecting the ink from the plurality of ink chambers, and the cantilever actuators set so as to each keep one end fixed to the inside of each ink chamber and the other end deformed by deflection. The cantilever actuator applies a pressure for ejection of the ink to the ink inside of the ink chamber by the deflection deformation of its other end. The cantilever actuator consists of a bimorph element, and blocks a backflow of the ink towards the restrictor side from the ink chamber at the same time as when the ink is ejected from the ink chamber through the nozzle by the deflection deformation of the other end.	SAMSUNG ELECTRONICS CO LTD	Kwon, Kye-si Sung, Gee-young Kim, Seong-jin Shin, Seung-ju Song, Mi-jeong
34	JP2006173121	ANODE ACTIVE MATERIAL, ITS MANUFACTURING METHOD, AND ANODE AND LITHIUM CELL USING THIS ANODE ACTIVE MATERIAL	PROBLEM TO BE SOLVED: To provide a anode active material, its manufacturing method, and an anode and a lithium cell using the anode active material. SOLUTION: The anode active material comprises: a graphite core particle 1; and a first coating layer 4 and a second coating layer 5 both formed on the graphite core particle, wherein the first coating layer includes minute silicon particles 2 and the second coating layer includes carbon fiber 3. Hence the anode active material has an excellent electronic conductivity which is stable even at low voltage and resiliency. Thereby, stress caused by difference in expansion coefficients of a carbonic material and an active metal material at the time of charging and discharging is dissolved, probability of direct revealing of metal to electrolyte is decreased remarkably, conductivity of a surface of the particle is raised without reducing an amount of silicon which can deposit on the graphite particle, and using of a special conductive material is not necessary. Consequently a manufacturing process of an electrode can be simplified. Furthermore, the anode and the lithium cell including the anode active material have excellent charging and discharging property.	SAMSUNG SDI CO LTD	IM, Dong-min Song, Mi-jeong Park, Jin-hwan Kin, Keisei
35	JP2006196457	ELECTRODE FOR ELECTOCHEMICAL BATTERY, ITS MANUFACTURING METHOD, AND	PROBLEM TO BE SOLVED: To provide an electrode for an electochemical battery, its manufacturing method and an electochemical battery using the same. SOLUTION: This electrode for the electochemical battery is characterized in that a porosity rate in an upper layer of an electrode active material coated on the surface of a collector is higher than that in a lower layer. As a result, the electrode includes an electrode	SAMSUNG SDI CO LTD	Park, Jin-hwan Song, Mi-jeong IM, Dong-min

		ELECTOCHEMICAL BATTERY USING THE SAME	active material having an adjusted porosity rate, especially even after rolling, in which there isn't so much difference in a porosity rate between the inside and the surface but there is a higher porosity rate in an upper layer, and by which an impregnation property for the electrolyte is improved and other charge-discharge characteristics are improved as the reduction of battery capacity is relatively small even in high-rate charge-discharge operation. And a battery using such electrode is excellent in charge-discharge characteristics		
36	JP2006208357	THIN-FILM TRANSISTOR ARRAY INSPECTION DEVICE	PROBLEM TO BE SOLVED: To provide a thin-film transistor array inspection device capable of inspecting a thin-film transistor array in both horizontal position and inclined position. SOLUTION: This thin-film transistor array inspection device is provided with a vacuum chamber 10, a stage 40 arranged in a lower part of the vacuum chamber 10, and laid with the thin-film transistor array, an electron gun 30 arranged in an upper part of the vacuum chamber 10 to be opposed to the stage 40, and for emitting an electron beam 33 to the thin-film transistor array, an electron detecting unit 60 arranged in an upper side of one side end part in the stage, and for detecting a secondary electron emitted from the thin-film transistor array by the electron beam 33, and an elevation unit 50 arranged an under side of the other side end in the stage 40, and for changing the position of the thin-film transistor array between the horizontal position and the inclined position with a fixed angle.	SAMSUNG ELECTRONICS CO LTD	Choi, Ho-seok Lenyashine, Vasily AN, Kyobin HA, Jeong SU Antonov, Sergey Song, Mi-jeong
37	JP2006208374	INSPECTION DEVICE FOR THIN FILM TRANSISTOR SUBSTRATE	PROBLEM TO BE SOLVED: To provide an inspection device for a thin film transistor substrate capable of inspecting the presence of a defect in the thin film transistor substrate, allowing accurate inspection even under a low vacuum condition, capable of coping properly with a change in a size of the thin film transistor substrate, and capable of shortening an inspection time. SOLUTION: This inspection device is constituted of a reference substrate 20 arranged opposedly to the thin film transistor substrate 10, and formed with reference patterns 21 corresponding to pixels 11, an electric power source supply part 40 for supplying an electric power source to the pixels 11 and the reference patterns 21 to form an electric field in a separation space between the thin film transistor substrate 10 and the reference substrate 20, an electron beam emitting unit 30 for emitting an electron beam, an electron beam detecting unit 50 for detecting the electron beam emitted from the electron beam emitting unit 30, and passed through the separation space, and a control part 60 for judging the presence of the defect in the pixels 11 of the thin film transistor substrate 10, based on a detected position of the electron beam.	SAMSUNG ELECTRONICS CO LTD	Choi, Ho-seok Antonov, Sergey AN, Kyobin HA, Jeong SU Vassili, Lemiachine Song, Mi-jeong
38	JP2006229237	PHASE TRANSFORMATION MEMORY ELEMENT AND ITS PRODUCTION PROCESS	PROBLEM TO BE SOLVED: To provide a phase transformation memory element and its production process. SOLUTION: The phase transformation memory element comprises a transistor formed on a substrate, a first electrode (120) connected electrically with the transistor on the substrate (110), a phase transformation substance film (130) formed on the first electrode (120) in the direction perpendicular thereto, and a second electrode (140) formed on the phase transformation substance film (130).	SAMSUNG ELECTRONICS CO LTD	Suh, Dong-seok Khang, Yoon-ho Noh, Jin-seo Lenyashine, Vasily Song, Mi-jeong

39	JP2006229238	PHASE TRANSFORMATION MEMORY ELEMENT AND ITS PRODUCTION PROCESS	PROBLEM TO BE SOLVED: To provide a phase transformation memory element and its production process. SOLUTION: The phase transformation memory element comprises a transistor formed on a substrate, a first electrode 210 connected electrically with the transistor, a dielectric layer formed on the first electrode 210, a conductive contact 220a formed in the dielectric layer, a phase transformation substance film 270a formed on the dielectric layer to cover the conductive contact 220a, and a second electrode 280a formed on the phase transformation substance film 270a wherein the width of the conductive contact 220a is set equal to or narrower than 30 nm.	SAMSUNG ELECTRONICS CO LTD	Suh, Dong-seok Khang, Yoon-ho Lenyashine, Vasily Song, Mi-jeong Antonov, Sergey
40	JP2007027724	LIGHT EMITTING DIODE AND METHOD OF MANUFACTURING THE SAME	PROBLEM TO BE SOLVED: To provide a light emitting diode and a method of manufacturing the same. SOLUTION: There is provided a light emitting diode formed on a sapphire substrate 10 to have a plurality of projection parts 22 in an appearance of irregularity surface by the projection parts; formed along a contour of a n-GaN layer 20, which is obtained by inclination of a side surface of the projection parts at a first inclination angle α (35°≤α≤90°) relative to an upper surface of the sapphire substrate; formed along the contour of an inactive layer 30 having an inclined surface 30a that inclines to the upper surface of the substrate at a second inclination angle β (35°≤β≤α) on the side surface of the projection parts; and having n-electrode 60 formed on a prescribed region of an n-GaN layer corresponding to a p-electrode 50 formed on a p-GaN layer 40 having an inclined surface 40a that inclines to the upper surface of the sapphire substrate at a third inclination angle γ (20°≤γ<β) on the inclined surface of the active layer.	SAMSUNG ELECTRO MECH CO LTD	Lee, Jeong-wook Vassili, Leniachine Song, Mi-jeong Yoon, Suk-ho Kim, Hyun-soo
41	JP2008074089	INK-JET PRINTER AND PRINTING METHOD UTILIZING THE SAME	PROBLEM TO BE SOLVED: To provide an ink-jet printer and a printing method utilizing the same. SOLUTION: The ink-jet printer forms one image by executing a plurality of times of printing operations onto paper P. The ink-jet printer is provided with a print head 120, which executes the printing operations onto paper that is transferred while being fixedly installed, and a paper rotating member for horizontally rotating the paper P, printed by the print head 120, by 90 degrees. The paper P, printed after being fed from a first direction to the print head 120, is horizontally rotated by 90 degrees with the paper rotating member. Then, the rotated paper P is fed from a second direction, reverse to the first direction, to the print head 120 so as to be repeatedly printed.	SAMSUNG ELECTRONICS CO LTD	Sohn, Dong-kee Kim, Min-soo Song, Mi-jeong
42	JP2008287233	FLEXIBLE SUBSTRATE FOR DISPLAY DEVICE AND DISPLAY DEVICE USING THE SAME	PROBLEM TO BE SOLVED: To provide a flexible substrate that is thin, has small thermal expansion coefficient, excellent flexibility, heat resistance, gas permeability resistance and moisture blocking property. SOLUTION: In the flexible substrate for a display element, a metal foil is laid over either both side surfaces or one surface of a plastic layer containing a woven carbon fiber or a woven glass fiber. A flat layer is formed on one surface of the metal foil. A display element uses this flexible substrate.	SAMSUNG ELECTRONICS CO LTD	Park, Shoshin Song, Mi-jeong Lee, Kwang Hee
43	US20060009691	Method, medium, and apparatus measuring biological signals using multi-electrode module, with a lead search	A method, medium, and apparatus measuring biological signals using a multi-electrode module, with a lead search method. An apparatus for measuring biological signals by using a multi-electrode module, includes a multi-electrode module having a non-conductive patch and a sensor array including a ground electrode and a plurality of individual electrodes, an electrode selection unit selecting a plurality of electrode pairs including a reference	Samsung Electronics Co., Ltd. (Suwon-si, KR)	Yeo, Hyung-sok (Gyeonggi-do, KR) Lee, Jeong-whan (Gyeonggi-do, KR) Song, Mi-jeong (Gyeonggi-do, KR) Kim, Sung-cheol (Gyeonggi-do, KR) Hwang, Jin-sang (Gyeonggi-do, KR)

			electrode and a measurement electrode from the plurality of individual electrodes depending on a type of the biological signal to be measured, and a signal processing unit for obtaining the biological signals from the plurality of electrode pairs.		
44	US20060134516	Anode active material, method of preparing the same, and anode and lithium battery containing the material	An anode active material comprises graphite core particles, and a first coating layer and a second coating layer formed on the surface of the graphite core particles. The first coating layer comprises silicon microparticles and the second coating layer comprises carbon fiber.	Samsung SDI Co., Ltd.	Im, Dong-min (Seoul, KR) Song, Mi-jeong (Suwon-si, KR) Park, Jin-hwan (Seoul, KR) Kim, Gue-sung (Yongin-si, KR)
45	US20060180803	Phase change memory devices and fabrication methods thereof	In a memory device, at least one conductive contact having a width of less than, or equal to, about 30 nm may be formed on a first electrode. A dielectric layer may be formed on the sides of the at least one conductive contact, and a phase change material film may be formed on the conductive contact. A second electrode may be formed on the phase change material.	Samsung Electronics Co., Ltd.	Suh, Dong-seok (Seoul, KR) Khang, Yeon-ho (Yongin-si, KR) Leniachine, Vassill (Suwon-si, KR) Song, Mi-jeong (Suwon-si, KR) Antonov, Sergey (Petersburg, RU)
46	US20070012933	Light emitting diode and method of fabricating the same	A light emitting diode (LED) and a method are provided for fabricating the a LED with an improved structure for better light emitting efficiency and better light output performance. The LED includes an n-GaN layer formed on a substrate to have a plurality of protrusions, thereby having an uneven surface, wherein a side surface of the protrusions is inclined with a first inclination angle α (35°≦α≦90°) with respect to an upper surface of the substrate; an active layer conformally formed on the surface of the n-GaN layer, wherein the surface of the active layer formed on the side surface of the protrusions is inclined with a second inclination angle β (35°≦β≦α) with respect to the upper surface of the substrate; a p-GaN layer conformally formed on the surface of the active layer, wherein the surface of the p-GaN layer formed on the surface of the inclined portion of the active layer is inclined with a third inclination angle γ (20°≦γ<β) with respect to the upper surface of the substrate; and an n-electrode formed on a predetermined area of the n-GaN layer to correspond to the p-electrode.	SAMSUNG ELECTRO-MECHANICS CO., LTD. (Suwon-si, KR)	Lee, Jeong-wook (Seongnam-si, KR) Leniachine, Vassili (Suwon-si, KR) Song, Mi-jeong (Suwon-si, KR) Yoon, Suk-ho (Seoul, KR) Kim, Hyun-soo (Hwaseong-si, KR)
47	US20070159094	FLAT PANEL DISPLAY DEVICE AND METHOD THEREOF	A flat panel display device including a display area where an image is displayed and a non-display area located at an outside of the display area includes bank portions arranged in a pattern in the display area and partitioning a plurality of openings, emission elements located in the openings, dummy bank portions formed in the non-display area and integrated therewith, and a sealing passivation layer having a multi-layered structure of organic films and inorganic films alternately arranged, one organic film being located at an interface directly contacting the emission element and one inorganic film located firstly on an outermost portion of the dummy bank portions when the sealing passivation layer extends from the display area to the non-display area.	SAMSUNG ELECTRONICS CO., LTD. (Suwon-si, KR)	Tae-sik OH. (Suwon-si, KR) Kang, Sung-kee (Seongnam-si, KR) Kim, Jung-woo (Yongin-si, KR) Lee, Ho-nyeon (Seongnam-si, KR) Chun, Young-tea (Suwon-si, KR) Song, Mi-jeong (Suwon-si, KR)
48	US20070184292	FLAT PANEL DISPLAY DEVICE AND MANUFACTURING METHOD FOR THE SAME	A flat panel display device comprises a substrate, an organic light emitting diode formed on the substrate, an inner stack encapsulating the light emitting diode and comprising at least one organic layer and one inorganic layer, and an outer stack deposited to cover the inner stack and comprising at least two polymer layers and an adhesive and bonding layer disposed therebetween to combine the at least two polymer layers and a polymer heat-curing film disposed at an interface of each of the polymer layers and the adhesive and bonding layer and cured by heat treatment. According to the present invention, the flat panel display device and a manufacturing method for	SAMSUNG ELECTRONICS CO., LTD (Suwon-si, KR)	Lee, Young-gu (Suwon-si, KR) Kang, Sung-kee (Seongnam-si, KR) Kim, Jung-woo (Yongin-si, KR) Lee, Ho-nyeon (Seongnam-si, KR) Ick-hwan KO. (Seoul, KR) Chun, Young-tea (Suwon-si, KR) Song, Mi-jeong (Suwon-si, KR)

			the same reliably seals the organic light emitting device and prevents degradation by permeation of external harmful materials, while providing high flexibility and low manufacturing cost.		
49	US20070270072	ORGANIC LIGHT EMITTING DEVICE AND METHOD OF MANUFACTURING THE SAME	An organic light emitting device can includes first and second metal layers used as electrodes on a substrate, an electron transport layer on the first metal layer, a first partition wall insulating the first metal layer from the second metal layer and extending onto the electron transport layer along the first metal layer, a second partition wall on the first metal layer around the electron transport layer, a third partition wall separated from the first partition wall and on the second metal layer, an organic light emitting layer on the electron transport layer, a hole transport layer on the organic light emitting layer and contacting the second metal layer, a protecting layer covering the hole transport layer and extending to the first and second metal layers beyond the second and third partition walls, and sealing materials filling spaces between the protecting layer and the first and second layers.	SAMSUNG SDI CO., LTD. (Suwon-si, KR)	Kim, Mu-gyeom (Hwaseong-si, KR) Kim, Sang-yeol (Gwacheon-si, KR) Leniachine, Vassili (Suwon-si, KR) Song, Mi-jeong (Suwon-si, KR)
50	US20080032436	Light emitting diode and method of fabricating the same	(N.A.)	SAMSUNG ELECTRO-MECHANICS CO., LTD. (Suwon-si, KR)	Lee, Jeong-wook (Seongnam-si, KR) Leniachine, Vassili (Suwon-si, KR) Song, Mi-jeong (Suwon-si, KR) Yoon, Suk-ho (Seoul, KR) Kim, Hyun-soo (Hwaseong-si, KR)
51	US20080068432	INKJET PRINTER AND PRINTING METHOD USING THE SAME	An inkjet printer and a printing method using the inkjet printer. The inkjet printer to form an image on a single sheet of paper by performing a plurality of printing jobs on the paper includes a print head fixed to the inkjet printer to perform a printing job on the paper which moves relative to the print head, and a paper rotating member to rotate the paper on which printing job has been performed by the print head 90 degrees in a horizontal direction, wherein the paper fed to the print head in a first direction corresponding to the printing job to be performed by the print head, is rotated 90 degrees in a horizontal direction by the paper rotating member, and then the rotated paper is fed to the print head in a second direction opposite to the first direction and a printing job is repeatedly performed on the paper by the print head.	Samsung Electronics Co., Ltd. (Suwon-si, KR)	Sohn, Dong-kee (Yongin-si, KR) Kim, Min-soo (Yongin-si, KR) Song, Mi-jeong (Yongin-si, KR)
52	US20080129798	RESTRICTORS WITH STRUCTURE TO PREVENT BACK FLOW AND INKJET HEAD HAVING THE SAME	A restrictor with a structure to prevent a back flow of ink and an inkjet head including the restrictor. In the inkjet head, an ink channel is formed in a channel plate, and the ink channel includes an ink inlet, a plurality of pressure chambers, a manifold, a plurality of restrictors respectively connecting the pressure chambers to the manifold, and a plurality of nozzles. Piezoelectric actuators are formed on the channel plate. Each of the restrictors includes a plurality of protrusions formed on an inner surface thereof in a structure suitable to increase a flow resistance of the restrictor when ink flows from the pressure chamber to the manifold through the restrictor. Each of the protrusions includes a first surface facing a flow of ink moving through the restrictor in a direction from the manifold to the pressure chamber, and a second surface facing a flow of ink moving through the restrictor in a direction from the pressure chamber to the manifold. The first surface has a low flow resistance, and the second surface has a high flow resistance. Therefore, a black flow of ink is restricted when ink is ejected, and sufficient ink can be supplied through the restrictor during an ink refill process.	Samsung Electronics Co., Ltd. (Suwon-si, KR)	Wee, Sang-kwon (Hwaseong-si, KR) Oh, Se-young (Yongin-si, KR) Chung, Jae-woo (Yongin-si, KR) Song, Mi-jeong (Suwon-si, KR)

53	US20080187946	APPARATUS FOR AND METHOD OF DETECTING MICROORGANISM OR MICRO-PARTICLE IN REAL TIME BY USING ELECTRICAL CHARGING METHOD	An apparatus for detecting a microorganism or micro-particle in real time includes an electrical charging module which electrically charges a microorganism or micro-particle in an atmosphere, a collection module which collects the electrically charged microorganism or micro-particle by using a potential difference, a preprocessing module which applies a fluorescent material to the collected microorganism or micro-particle and a sensing module which irradiates a light, senses a microorganism or micro-particle which reacts to the light and detects a concentration of the microorganism or micro-particle in the atmosphere.	SAMSUNG ELECTRONICS CO., LTD (Suwon-si, KR)	Hwang, Jin Sang (Suwon-si, KR) Hwang, Jung Joo (Suwon-si, KR) Song, Mi Jeong (Suwon-si, KR)
54	US20080241875	APPARATUS AND METHOD OF DETECTING MICROORGANISM OR MICRO-PARTICLE IN REAL TIME	An apparatus for detecting a microorganism or micro-particle in real time includes a collection module comprising a condensation element unit which condenses water particles in an atmosphere and forms a droplet to which a microorganism or micro-particle in the atmosphere adheres to, and a collection channel unit which gathers the droplet and generates a droplet stream and a sensing module including a counting module. The droplet stream is introduced to the sensing module, and the sensing module detects and counts the microorganism or micro-particle which is adhered to the introduced droplet stream.	SAMSUNG ELECTRONICS CO., LTD (Suwon-si, KR)	Hwang, Jung Joo (Suwon-si, KR) Song, Mi Jeong (Suwon-si, KR) Hwang, Jin Sang (Suwon-si, KR) MA, Jang Seok (Seongnam-si, KR)
55	US20080284971	FLEXIBLE SUBSTRATE FOR DISPLAY DEVICE AND DISPLAY DEVICE USING THE SAME	The present disclosure relates to a flexible substrate for a display device including a plastic layer containing a woven glass fiber, a metal film coated on either both side surfaces or one surface of the plastic layer, and an overcoating layer formed on one surface of the metal film wherein the overcoating layer is on the side of the metal film opposite from the plastic layer, and to a display device using the flexible substrate. The flexible substrate is thin, and has small thermal expansion coefficient, excellent flexibility, heat resistance, gas permeability resistance and moisture blocking property. The flexible substrate can be used in various display devices such as a TV, a notebook computer, a cellular phone, or an electronic paper.	SAMSUNG ELECTRONICS CO., LTD. (Suwon-si, KR)	Park, Jong Jin (Yongin-si, KR) Song, Mi Jeong (Suwon-si, KR) Lee, Kwang Hee (Suwon-si, KR)
56	US20090009565	PIEZOELECTRIC INKJET HEAD	A piezoelectric inkjet head includes a plurality of pressure chambers filled with ink that is to be ejected, a manifold to supply ink to the pressure chambers and extending in both sides of each of the pressure chambers parallel to a direction in which the pressure chambers are arranged, a restrictor to connect the manifold to each of the pressure chambers, and to be connected to both ends of each of the pressure chambers in a longitudinal direction, a plurality of piezoelectric actuators respectively corresponding to the pressure chambers, and at least one nozzle respectively connected to each of the pressure chambers, and to be symmetrically arranged with respect to the centerline in a longitudinal direction of each of the pressure chamber. The at least one nozzle includes a first nozzle and at least two second nozzles, the first nozzle is disposed to correspond to the centerline in the longitudinal direction of each of the pressure chambers, and the second nozzles are disposed in both sides of the first nozzle.	Samsung Electronics Co., Ltd. (Suwon-si, KR)	OH, Se-young (Yongin-si, KR) Wee, Sang-kwon (Suwon-si, KR) Song, Mi-jeong (Suwon-si, KR)
57	US20090173381	GEL TYPE ELECTROLYTE FOR DYE SENSITIZED SOLAR CELL, METHOD OF PREPARING THE SAME, AND SOLAR CELL INCLUDING THE GEL TYPE ELECTROLYTE	A gel type electrolyte for a dye-sensitized solar cell including: phosphor particles or phosphor particles with metal oxide particles; a redox couple; and an organic solvent, a method of preparing the same, and a solar cell including the gel type electrolyte, which provide for a dye-sensitized solar cell that has long-term stability, excellent photoavailability, and high ionic conductivity.	Samsung SDI Co., Ltd. (Suwon-si, KR)	Kang, Moon-sung (Yongin-si, KR) Lee, Ji-won (Yongin-si, KR) Song, Mi-jeong (Yongin-si, KR) Shin, Byong-cheol (Yongin-si, KR) Kim, Tae-gon (Seoul, KR)

58	US20090291228	METHOD AND APPARATUS FOR FORMING COLLOIDAL PHOTONIC CRYSTALS	A method for forming colloidal photonic crystals comprises; surrounding an outer circumference of a cylinder with a flexible substrate, spacing the cylinder a predetermined distance from a panel coated with a colloidal solution, and rotating the cylinder to form colloidal photonic crystals on the flexible panel.	SAMSUNG ELECTRONICS CO., LTD. (Suwon-si, KR)	Cho, Young-sang (Seoul, KR) Song, Mi-jeong (Suwon-si, KR) Lee, Hong-seok (Seongnam-si, KR)
59	US20100134707	LIQUID CRYSTAL DISPLAY	A liquid crystal display includes; first and second substrates facing each other, a liquid crystal layer interposed between the first and second substrates and including liquid crystal molecules, a first subpixel electrode disposed on the first substrate, the first subpixel electrode receiving a first data voltage, a second subpixel electrode disposed on the first substrate, the second subpixel electrode receiving a second data voltage; and a short protrusion disposed on the second substrate and simultaneously facing the first and second subpixel electrodes, wherein the liquid crystal layer is vertically aligned and has positive dielectric anisotropy.	SAMSUNG ELECTRONICS CO., LTD. (Suwon-si, KR)	Kim, Sung-woon (Suwon-si, KR) Woo, Hwa-sung (Suwon-si, KR) Jang, Joo-nyung (Gyeongsan-si, KR) Song, Mi-jeong (Suwon-si, KR) Kim, Hyang-yul (Hwaseong-si, KR) Shin, Cheol (Hwaseong-si, KR) Shin, Dong-chul (Seoul, KR) Kim, Hee-seop (Hwaseong-si, KR) Kim, Jung-hyeon (Hwaseong-si, KR)
60	US20110100838	ELECTROLYTIC DISINFECTION SYSTEM AND METHOD FOR PURIFYING WATER	Provided is an electrolytic disinfection system and method for purifying water. The electrolytic disinfection system includes; an electrolytic disinfection device which includes; a chamber, a first electrode disposed in the chamber, a second electrode disposed in the chamber and spaced apart from the first electrode, a water inlet part connected to the chamber, wherein the water inlet part allows influent water to be introduced to the chamber therethrough, and a water outlet part connected to the chamber, wherein the water outlet part allows the influent water to be discharged from the chamber therethrough, and an influent water heating device which is disposed upstream of the water inlet part and heats the influent water introduced to the chamber through the water inlet part.	SAMSUNG ELECTRONICS CO., LTD. (Suwon-si, KR)	Kim, Jae-eun (Seoul, KR) Lee, Joo-wook (Seoul, KR) Kim, Chang-hyun (Seoul, KR) Kang, Hyo-rang (Anyang-si, KR) Song, Mi-jeong (Suwon-si, KR) Kim, Jae-young (Suwon-si, KR)
61	US20110187764	2D/3D SWITCHABLE BACKLIGHT UNIT AND IMAGE DISPLAY DEVICE	A 2D/3D switchable backlight unit and an image display device employing the same are provided. The 2D/3D switchable backlight unit includes a light source, a light guide plate in which light emitted from the light source is total-internal-reflected, and a switch array comprising a plurality of switches that selectively contact a first surface of the light guide plate and emit light by frustrated total internal reflection inside the light guide plate. In 2D mode, each of the switches contacts the first surface of the light guide plate. In 3D mode, some of the switches contact the first surface of the light guide plate.	Samsung Electronics Co., Ltd. (Suwon-si, KR)	Bae, Jung-mok (Seoul, KR) Song, Hoon (Yongin-si, KR) Nam, Yun-woo (Yongin-si, KR) Lee, Hong-seok (Seongnam-si, KR) Song, Mi-jeong (Suwon-si, KR)
62	US20110240922	SEMICONDUCTOR NANOCRYSTAL AND METHOD OF PREPARING THE SAME	A method of preparing a semiconductor nanocrystal including a core or a core and a shell. The method includes contacting (A) a Group II precursor bound with phosphine, a Group III precursor bound with phosphine, or a mixture thereof, and (B) a Group V compound, a Group VI compound, or a mixture thereof, to provide the core or the core and the shell of the semiconductor nanocrystal.	SAMSUNG ELECTRONICS CO., LTD. (Suwon-si, KR)	Jun, Shin-ae (Seongnam-si, KR) Jang, Eun-joo (Suwon-si, KR) Jang, Hyo-sook (Yongin-si, KR) Song, Mi-jeong (Suwon-si, KR)
63	US20120000779	SURFACE ACOUSTIC WAVE SENSOR DEVICE INCLUDING TARGET BIOMOLECULE ISOLATION COMPONENT	Provided herein is a surface acoustic wave (“SAW”) sensor device including an isolation component of a target biomolecule. A sample containing the target biomolecule is separated by its size using electrophoresis, and sequentially reacts with a SAW sensor. In other words, the device is capable of detecting the target biomolecule by separating biomolecules using electrophoresis, and applying the separated biomolecules to the SAW sensor.	AJOU UNIVERSITY INDUSTRY-ACADEMIC COOPERATION FOUNDATION (Suwon-si,, KR) SAMSUNG ELECTRONICS CO., LTD. (Suwon-si,, KR)	Lee, Hun Joo (Hwaseong-si,, KR) Lee, Soo Suk (Suwon-si,, KR) Song, Mi Jeong (Suwon-si,, KR) Han, Kyung Yeon (Seoul,, KR) Kim, Jae Ho (Suwon-si,, KR)

64	US20120048356	DOPING PASTE, SOLAR CELL, AND METHOD OF MANUFACTURING THE SAME	A doping paste includes an inorganic particle including a phosphorus-containing silicon compound and an organic vehicle, wherein a concentration of phosphorus at an interior portion of the inorganic particle is greater than a concentration of phosphorous at a surface of the inorganic particle.	SAMSUNG ELECTRONICS CO., LTD. (Suwon-si, KR)	Jee, Sang-soo (Hwaseong-si, KR) Lee, Eun-sung (Seoul, KR) Kim, Se-yun (Seoul, KR) Urazaev, Vladimir (Suwon-si, KR) Won, Jung Yun (Hwaseong-si, KR) Song, Mi-jeong (Suwon-si, KR)
65	US20120077267	DEVICE AND METHOD OF SEPARATING CELLS BY USING MAGNETIC FORCE	A cell separation device includes a channel or chamber in which a sample flows or moves, the sample including target cells marked with magnetic particles, and non-target cells, and a magnet which generates a magnetic first force in a first direction with respect to the sample within the channel or chamber. The channel or chamber of the cell separation device is applied with a second force in a second direction opposite to the first direction of the magnetic force. According to the cell separation device and a method of separating cells, the target cells move in the first direction by the magnetic force, and the non-target cells move in the second direction by the second force, by simultaneously applying the magnetic force and the second force in opposing directions, thereby separating the target cells from the non-target cells.	SAMSUNG ELECTRONICS CO., LTD. (Suwon-si, KR)	Lee, Hun-joo (Hwaseong-si, KR) Lee, Jeong-gun (Seoul, KR) Song, Mi-jeong (Suwon-si, KR) Park, Jong-myeon (Incheon, KR) Sim, Tae-seok (Seoul, KR) Kim, Min-seok S. (Daejeon, KR)
66	US20120100439	ELECTROLYTE SOLUTION FOR SECONDARY LITHIUM BATTERY AND SECONDARY LITHIUM BATTERY INCLUDING THE ELECTROLYTE SOLUTION	An electrolyte solution for a secondary lithium battery, the electrolyte solution including: a lithium salt, a non-aqueous organic solvent, and a phenanthroline-based compound having a polar substituent. The electrolyte solution enables production of a secondary lithium battery having good high-temperature lifetime characteristics and good high-temperature preservation characteristics.	Samsung Electronics Co., Ltd. (Suwon-si, KR)	Kang, Yoon-sok (Seongnam-si, KR) Lee, Seok-soo (Yongin-si, KR) Yoon, Jae-gu (Suwon-si, KR) Park, Jin-hwan (Seoul, KR) Song, Mi-jeong (Suwon-si, KR)
67	US20120121990	ELECTROLYTE FOR LITHIUM SECONDARY BATTERY AND LITHIUM SECONDARY BATTERY INCLUDING THE SAME	An electrolyte for a lithium secondary battery, the electrolyte comprising: a lithium salt, a non-aqueous organic solvent, and an additive represented by Formula 1 below: wherein R1, R2, R3, and R4...	Samsung Electronics Co., Ltd. (Suwon-si, KR)	Kang, Yoon-sok (Seongnam-si, KR) Lee, Seok-soo (Yongin-si, KR) Ryu, Young-gyoon (Suwon-si, KR) Park, Jin-hwan (Seoul, KR) Song, Mi-jeong (Suwon-si, KR)
68	US20120132643	MICROHEATER AND MICROHEATER ARRAY	A microheater and a microheater array are provided. The microheater includes a substrate, a column disposed on the substrate and a bridge supported by the column. A width of a portion of a bridge formed on the column is less than a width of a portion of the bridge that does not contact the column. The bridge may include a spring component.	SAMSUNG ELECTRONICS CO., LTD. (Suwon-si, KR)	Choi, Jun-hee (Seongnam-si, KR) Lee, Joo-ho (Hwaseong-si, KR) Song, Mi-jeong (Suwon-si, KR)
69	US20120135251	PHOTOSENSITIVE POLYIMIDE HAVING SILICON MODIFIED GROUP, ADHESIVE COMPOSITION AND SEMICONDUCTOR PACKAGE INCLUDING THE SAME	A photosensitive polyimide and an adhesive composition and adhesive film containing the same are provided. The photosensitive polyimide has an imide backbone and grafted side chains including a methacrylate-based side chain and a silicon-modified side chain.	SAMSUNG ELECTRONICS CO., LTD. (Suwon-si, KR)	Jeong, Chul Ho (Gwangju, KR) Park, Joon Yong (Suwon-si, KR) Lee, Jae Jun (Suwon-si, KR) Han, Yong Seok (Anyang-si, KR) Song, Mi Jeong (Suwon-si, KR)

70	WO/2011/096763A2	KIT INCLUDING SEQUENCE SPECIFIC BINDING PROTEIN AND METHOD AND DEVICE FOR DETERMINING NUCLEOTIDE SEQUENCE OF TARGET NUCLEIC ACID	Provided are kits for determining a nucleotide sequence of a target nucleic acid, the kit including at least one sequence specific binding protein and a detectable tag. In accordance with a kit for determining a nucleotide sequence of a target nucleic acid according to one exemplary embodiment and a method and device for determining a nucleotide sequence of a target nucleic acid, the nucleotide sequence of the target nucleic acid may be more efficiently determined.	SAMSUNG ELECTRONICS CO., LTD. (416 Maetan-dong, Yeongtong-guSuwon-si, Gyeonggi-do 442-742, KR)	RHEE, Joo-Won (San 14-1Nongseo-dong, Giheung-gu, Yongin-si, Gyeonggi-do 446-712, KR) KIM, Su-Hyeon (San 14-1Nongseo-dong, Giheung-gu, Yongin-si, Gyeonggi-do 446-712, KR) LEE, Jeong-Gun (San 14-1Nongseo-dong, Giheung-gu, Yongin-si, Gyeonggi-do 446-712, KR) SONG, Mi-Jeong (San 14-1Nongseo-dong, Giheung-gu, Yongin-si, Gyeonggi-do 446-712, KR)
71	US20100044918A1	METHOD OF PREPARING SOLID REAGENT AND MICROFLUIDIC DEVICE EMPLOYING THE SOLID REAGENT	In a method of preparing a solid reagent, a liquid reagent is loaded into a plurality of reagent cavities formed in a mold, the loaded liquid reagent is frozen, the frozen reagent is separated from the mold, and the separated frozen reagent is dried to remove humidity therein.	Samsung Electronics Co., Ltd. (Suwon-si, KR)	Lee, Yangui (Seoul, KR) Song, Mijeong (Suwon-si, KR) Park, Jaechan (Yongin-si, KR) Cho, Yoonkyoung (Suwon-si, KR) Lee, Jeonggun (Seoul, KR)

Testing Method 4. Field TRIZ Works Experience since 2002

4.1.Whole Project History since 2002

year	no/TRIZ projects	no/patents by TRIZ	methodic evolution	outstanding projects
1999	0	0		
2000	23	0		GaN LD Zipel refrigeration shelf
2001	20	0		DVD pick-up cost down, ice maker design
2002	27	1		PDP igniter electrode conflict resolving
2003	31	26	six signa/TRIZ hybridization	novel OLED architecture
2004	54	87	Introducing TRIZ for gate keeping option of R&D project TRIZ for IT technology	new type ink jet printing method, GaN LED light extraction structure, DMB
2005	18	28	Introducing Evolution Theory	OLED encapsulation, voice recognition, unicodec
2006	23	39	Establish SAIT propriatory evolution analysis framework	Network on chip, airborne microorganism capture LOD(with TEOM)
2007	24	11		PV-DSSC light absorption efficiency, LOD advanced issues
2008	15	7		Direct methanol fuel cell fuel supply modue design
2009	13	32		real time 3D face modeling
2010	22	34		3D display optical switch architecture (with TEOM)
2011	19	43		3D camera depth detection moduel
2012 (on going)	15	30	collaborative ideation assisted by TRIZ align with MOT process and IP strategy	invention workshop 10 projects for strategic early-stage concept design
sum mary	304 (261 since 2002)	338		

4.2.50 selected Field TRIZ Works Experience since 2002

No	Year	Project Name
1	2004	White LED for lightening
2	2004	Phosphor/QD development for white LED
3	2004	OLED
4	2004	nanoparticle fabrication
5	2004	New PDP design
6	2005	next generation BLU
7	2005	white LED(with report)
8	2005	Mobile halth phone/DE
9	2005	Display/ET feasibility
10	2005	encapsulation of OLED(with report)
11	2005	Image drum design
12	2005	E/Nose
13	2005	Future Fuel Cell Imaging
14	2006	LOC component evolution tree
15	2006	Fuel Processor Pilot Proto Design
16	2006	Dead nozzle compensation
17	2006	PEMFC stack design
18	2006	SPR outcoupling for OLED
19	2006	Direct Printing New concept survey
20	2006	airborne microorganism detection
21	2006	3 color in single LED chip
22	2006	OLED dispensing system
23	2006	Color filter printer head design
24	2006	magnetic packet memory
25	2006	Thin film barrier
26	2007	paper like display
27	2007	PV-DSSC development(with report)
28	2007	liquid lens camera module
29	2007	novel application finding in energy industry
30	2008	butterfly mimic display
31	2008	Lab on a disc new sample architecture design (included in dissertation)
32	2008	Direct methanol fuel cell fuel supply modue design
33	2009	evolution map of robot vacuum cleaner
34	2009	evolution map of gene sequencing technology
35	2009	wide are printable inorganic electroluminescence device
36	2009	water softening device relaibility increasing
37	2009	anti-bactiral system for water purification system
38	2009	organic light-electricity converting device
39	2009	qunatum dot for LED
40	2009	3D display architecting
41	2009	solar cell contact paste
42	2009	patternable adhesive film
43	2009	circulating tumor cell detection device
44	2009	3D active optical element
45	2010	forward osmosis membrane
46	2010	3D image sensing module for 3D camera
47	2010	design gastroscope
48	2011	high mobility TFT
49	2011	qunatum dot for LED
50	2011	drug delivery system

Testing Method 5. 3 examples of the most effective and efficient solutions worked out by the candidate

➔see attached articles name as following
Project 1. OLED encapsulation.doc
Project 2. DSSC.doc
Project 3. Increasing light extraction efficiency of GaN LED.doc

Testing Method 6. copies of articles and reviews on practical use of candidate's inventions, results of innovation projects, in which the candidate was actively involved

⇨ Reference 1. See web site of samsung
http://www.samsung.com/sec/business/hme/pro_info_02.html

⇨ Reference 2. See following article

Triggering navigators for innovative system design: The case of lab-on-a-chip technology Original Research Article
In Press, Corrected Proof, *Available online 3 May 2012*
Mi Jeong Song, et al.