

# NewsLetter

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# PATENTS

## PATENTS

### Patent Applications in the 4th Industrial Revolution Fields Led by Korean Companies

In Korea and the European Union (EU), Korean companies are leading in patent applications relating to the 4th industrial revolution such as Artificial Intelligence (AI).

According to the data released by the Korea Institute of Intellectual Property, the number of Korean patent applications relating to the 4th industrial revolution has grown by 8.7% over the past 10 years (from 2008 to 2017),

far exceeding the total patent application growth rate (1.3%) during the same period. Among them, the patent applications in the 4 major fields of the 4th industrial revolution such as AI, IoT, Big Data and autonomous driving have been led by Korean companies such as Samsung Electronics, ETRI, LG Electronics and Hyundai Motor Company. In the IoT field, Qualcomm has filed 1,900 patent applications similar to Samsung Electronics.

#### - Number of Patent Applications in 4 Major Fields of the 4th Industrial Revolution (2008 to 2017) -

Rank	AI		IoT		Big Data		Autonomous driving	
	Company	Count	Company	Count	Company	Count	Company	Count
1	Samsung Electronics	1,287	Qualcomm	1,935	Samsung Electronics	751	Hyundai Motor	981
2	ETRI	1,111	Samsung Electronics	1,928	ETRI	290	Mobis	686
3	KAIST	315	LG Electronics	1,384	Hynix	194	Mando	564
4	Google	311	ETRI	756	KT	169	LG Electronics	293
5	LG Electronics	227	KT	493	SK Planet	141	ETRI	238

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Korean companies have filed many patent applications relating to the 4th industrial revolution in EU as well. According to the data recently released by the European Patent Office (EPO), Samsung Electronics and LG Electronics ranked first and second in patent applications for the 4th industrial revolution from 2011 to 2016. Samsung ranked 1st with 1,634 cases, followed by LG Electronics with 1,125 cases, Sony with 885 cases, Nokia with 640 cases, Huawei with 577 cases, Qualcomm with 552 cases, BlackBerry with 520 cases, Philips with 433 cases, Intel with 428 cases and Panasonic with 413 cases. The share of each country was in the order of the United States (25%), Japan (18%), Korea (13%), Germany (8%) and China (6%).

## Massive Increase in Patent Filings relating to AI Speaker

Recently, domestic and foreign companies such as SK Telecom, KT, Google, Amazon, etc. are actively introducing AI speaker products using artificial intelligence (AI) technology into the market. In addition, patent applications for AI speakers are massively increasing.

According to the Korean Intellectual Property Office (KIPO), the number of patent applications relating to AI speakers using natural language processing technology has surged more than 8 times from 5 cases filed during the period of 2008 to 2012, to 41 cases filed during the period of 2013 to 2017. Until 2016, the number of applications filed yearly or biennially was merely 1 or 2, but it soared to 34 in 2017. The number of applications filed in the first-half of this year (from January to June, 2018) increased 85% (29 cases) in comparison to the number of applications filed in the previous year. According to this trend, it is estimated that the number of applications filed in 2018 will exceed the number of applications filed in the previous year.

In terms of applicants, companies (63.0%), individuals (28.3%), and universities and research institutes (8.7%) were surveyed in order, and it was found that companies occupy most of the filings relating to AI speakers. The most popular applicants were Samsung Electronics (10.9%), personal inventors (8.7%), Roborus (6.5%) and LG Electronics (4.3%).

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Of the AI technologies, the voice language processing technology includes a voice recognition technology that converts human voice into computer-recognizable character data, and a natural language processing technology that helps a computer understand the meaning of the character data recognized by the computer through analysis. Here, the natural language processing technology is a core technology that influences the conversation performance of an AI speaker.

and researchers filed 111, 33, 16 and 3 applications, respectively.

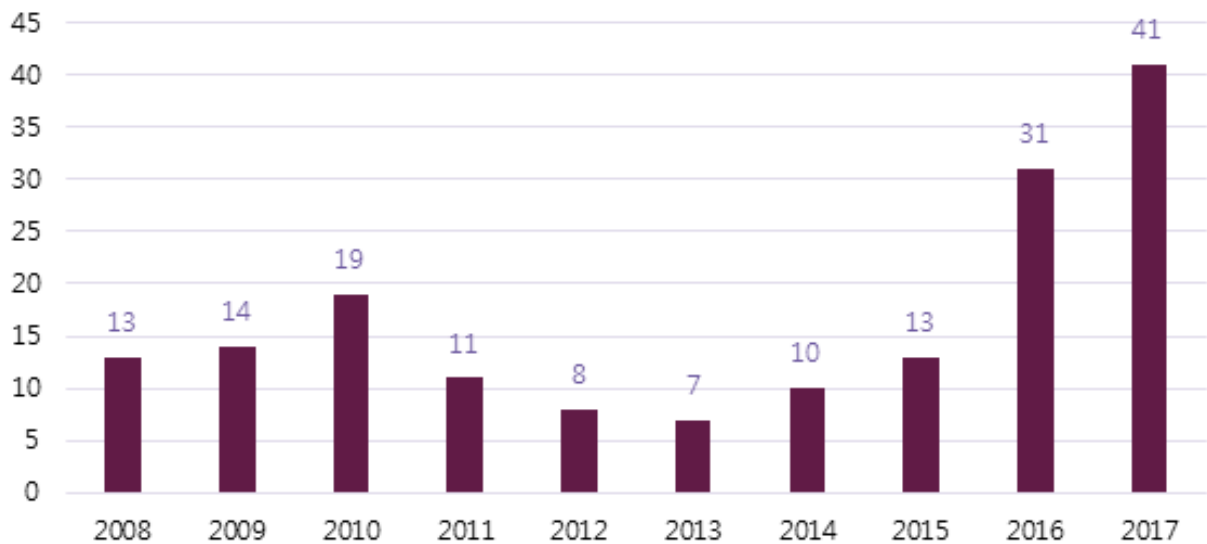
## **High Brightness Film Responsible for Brightness of LCD**

In the LCD TV market where Korea has the largest market share in the world, patent applications for brightness enhancement film technology, which is a key component technology for a clear screen and low power consumption, are steadily increasing. According to the KIPO, patent applications for brightness enhancement films have increased by 57%, from 65 cases during the five years from 2008 to 2012 to 102 cases from 2013 to 2017.

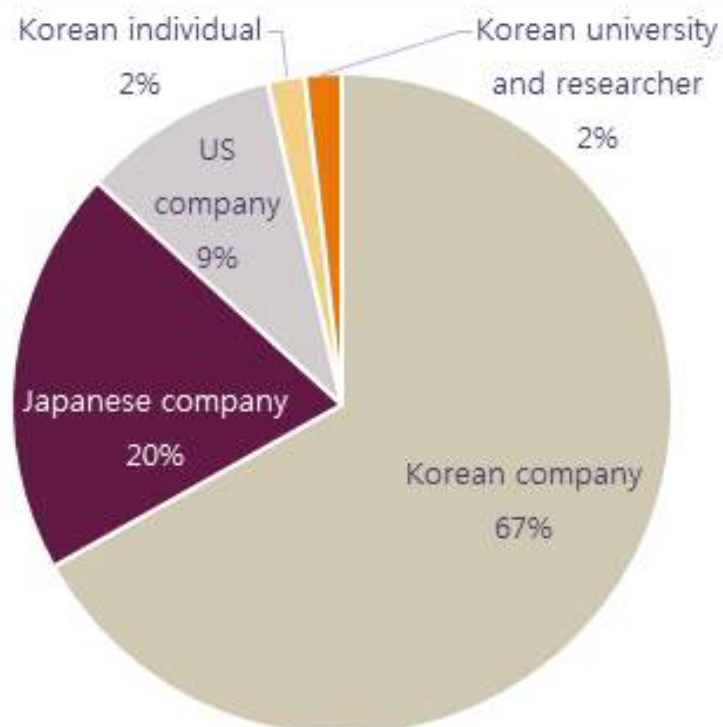
With respect to the type of the applicant, Korean companies, Japanese companies, US companies, and Korean universities

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- Number of Patent Applications for Brightness Enhancement Film -



- Type of Applicant Who Filed a Patent Application for Brightness Enhancement Film (2008 to 2017) -



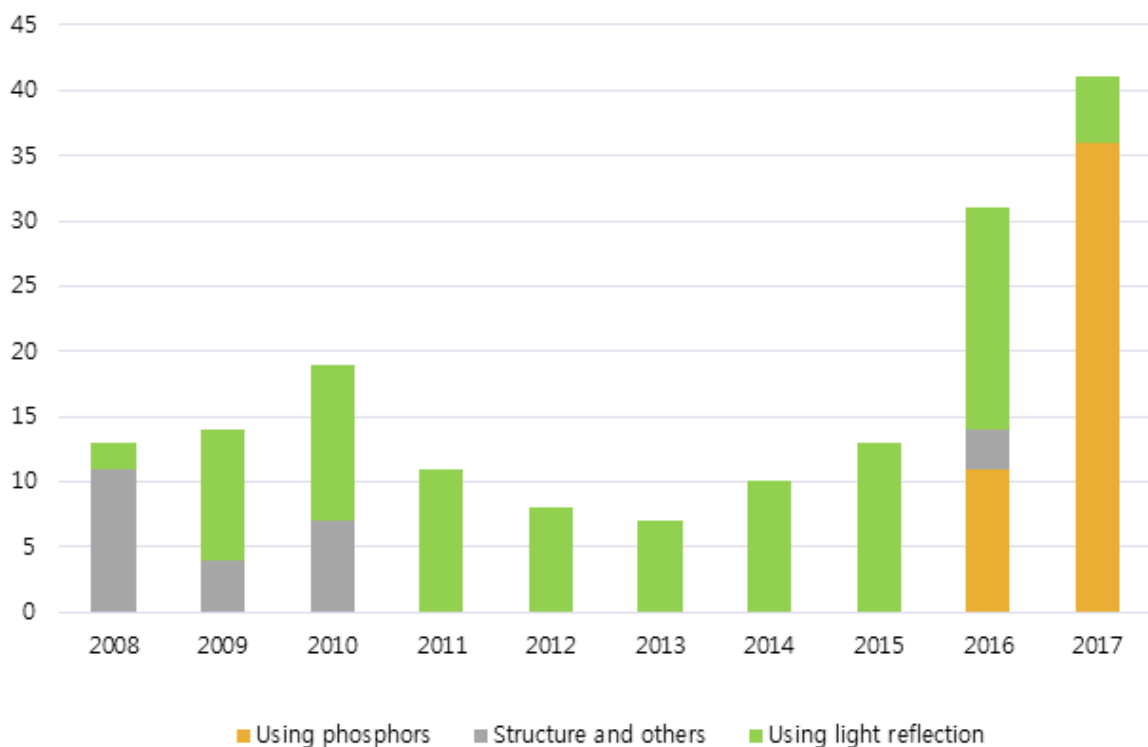
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A brightness enhancement film increases luminance (brightness) of an LCD TV by reutilizing the light lost therein, thereby decreasing the power consumption. The reason why patent applications for the brightness enhancement film are increasing is estimated that Korean companies (Hyosung, Woongjin Chemical, etc.) have great interest in developing alternate techniques.

The brightness enhancement film can be divided by its operating principle into three

categories: ① technology using reflection of the polarized light, ② technology of obtaining concentration of the light through refraction of light in the surface structure, and ③ technology of changing the wavelength of the light using phosphors. What is currently mostly used among them is the technology of using reflection of the light. Patent applications for the technology of using refraction of light and the technology using phosphors, which are alternate technologies, have dramatically increased in the past two years.

**- Number of Patent Applications based on Type of Operating Principles of Brightness Enhancement Film -**



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The technology of using phosphors is adding phosphors which transform the wavelength of light in a substrate film included in an LCD to improve luminance and color reproducibility in order to replace the existing dual brightness enhancement film (DBEF).

## Increase in Microbiome Patent Filings

Research on personalized medical services based on the analysis of information of collective genomes of microorganisms that reside on or cohabit in the human body, called “microbiome” data, is garnering attention at the core of healthcare technology in the era of the 4th industrial revolution.

The number of patent filings in the microbiome field has grown significantly over the recent five years, reaching an estimated 361 patent applications in total by 2017 since 2000, according to KIPO’s statistical data. Among these microbiome applications, 226 applications (63%) were filed by Korean applicants, which was far greater than the number of filings by foreign applicants standing at 135 applications (37%).

With respect to the type of disease to be treated using microbiome data, 28% of the microbiome applications relate to

inflammation, *e.g.*, gastroenteritis (101 cases), followed by immune disorders (80 cases, 22%), metabolic syndromes, *e.g.*, obesity and diabetes (67 cases, 19%), cancer (46 cases, 13%), and psychological disorders, *e.g.*, depression (11 cases, 3%).

By 2024, the market for human microbiome treatments is expected to grow to US\$ 94 billion. Accordingly, in order to gain predominance in the microbiome field, solid effort should be made to secure competitive intellectual property strategies for obtaining patents.

## Supreme Court Decision on Description Requirements of the Specification regarding a Sustained Release Formulation

In invalidation action against a patent owned by Novartis, a global pharmaceutical company, the Supreme Court has issued a decision, in which the standards for determining the description requirements of the specification were clarified (Case No. 2016 Hu 601 issued on October 25, 2018). Novartis’ patent relates to a sustained release formulation comprising octreotide as an active ingredient for the treatment of acromegaly.


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The Supreme Court held: “If one of ordinary skill in the art could produce and use the claimed sustained release formulation and could sufficiently predict the effect of the invention based on the descriptions in the specification in view of the level of the technology at the time the application was filed, the specification is deemed to satisfy the description requirements under Article 42(3) of the applicable Patent Act even if the specification does not describe results of human clinical trials or direct treatment effects on the target disease.”

The above decision is significant in that the Supreme Court provided the extent of the descriptions required in the specification regarding the pharmacological effect of the sustained release formulation. That is, with respect to a sustained release formulation comprising an active ingredient with known medical use, the Supreme Court acknowledged that if the specification describes examples of preparing such a sustained release formulation and experimental data on animals, one of ordinary skill in the art could reproduce the invention for humans by adjusting the dose and predict the effect based on the results in the specification.

## TRADEMARKS

### **Given that a Prior-Used Mark “TRANSFORMER” is Well-Known, the Registration of a Similar Mark Should be Invalidated Even If the Similar Mark is Not Used for Commercially Related Goods**

Platanus Co., Ltd. (“Platanus”) obtained a registration for the mark “” (“Platanus’s Mark”) with respect to the goods “tent pegs of metal, eigen for climbing,” etc.

Hasbro, Inc. (“Hasbro”) filed an invalidation action against Platanus’s Mark on the basis of its mark “TRANSFORMER” (“Hasbro’s Mark”) with the Intellectual Property Trial and Appeal Board (IPTAB) of the KIPO. The IPTAB concluded that although Platanus’s Mark is similar to Hasbro’s Mark in terms of the marks themselves, since the compared goods associated with the two (2) marks are not commercially-related, the invalidation action is dismissed. Hasbro filed an appeal of the IPTAB decision with the Patent Court (Case No. 2018 Heo 2533).

The Patent Court acknowledged the well-known status of Hasbro’s Mark based on the following: (i) Hasbro’s Mark is acknowledged to be well-known as a movie



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title in Korea; (ii) Hasbro's Mark is expected to be used for transforming robot toys; and (iii) sales revenues and advertising expenditures relating to Hasbro's Mark are deemed to be substantial. On that basis, the Patent Court concluded that even if Platanus's Mark is used in connection with climbing articles, and not robot toys, it is likely to mislead consumers into believing that the goods associated with Platanus's Mark are manufactured and sold by a company which has a business relationship with Hasbro, and thus Platanus's Mark cannot be registered pursuant to Article 7(1)(xi) of the Trademark Act.

A determination that a mark cannot be registered pursuant to Article 7(1)(xi) of the Trademark Act is typically made on the basis that the relevant prior-used mark has been well-known to some extent and that the compared goods are commercially-related to each other. In the subject case, however, the Patent Court concluded that although the compared goods are not commercially-related, the co-existence of the marks would likely mislead general consumers into believing that the relevant goods are offered by the owner of the prior-used mark by considering the degree of the well-known status of the prior-used mark and the actual circumstance relating to trade channels. Platanus filed an appeal

of the Patent Court's decision with the Supreme Court (Case No. 2018 Hu 11827). We are awaiting the Supreme Court's final decision on this matter.

## **The Registration of a Mark "STRIPE" that has Not been Used as a Trademark Should be Cancelled**

Amorepacific Corporation obtained a registration of the mark "STRIPE" ("Subject Mark") for "manicures" and used the Subject Mark as a color name on manicure containers and its website. Stripe International Inc. filed a cancellation action for non-use against the Subject Mark with the IPTAB of the KIPO. The IPTAB issued a decision to cancel the registration of the Subject Mark. Thereafter, Amorepacific Corporation filed an appeal of the IPTAB decision with the Patent Court (Case No. 2017 Heo 7180).

The Patent Court affirmed the IPTAB decision on the basis that (i) the Subject Mark was inscribed in a much smaller size than the other words, (ii) the Subject Mark was used merely as a color indication along with other well-known marks, and (iii) the Korean general consumers likely perceive the Subject Mark as a color indication of manicures, and thus the Subject Mark was

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not used as a trademark.

According to Article 119(1)(iii) of the Trademark Act, the use of a trademark is acknowledged only where the trademark essentially functions as a source indicator of the goods and/or services associated therewith in view of the manner of using the trademark (such as the relation between the trademark and the goods and/or services, the position and size of the trademark on the goods), the degree of the well-known status of the trademark, the registrant's intent of using the mark, and the actual market circumstances pertaining to the goods or services offered under the mark.

The subject case clearly shows that the sales and advertising of goods bearing a trademark are not acknowledged as legitimate use of the trademark where the trademark does not function as a source indicator of the goods and/or services associated therewith.

## **2018 TM5 & ID5 Annual Meetings were Held in Seoul**

The TM5-ID5 Annual Meetings were held at the Imperial Palace Hotel in Seoul from November 1 to November 6, 2018. The

meetings were attended by the European Union Intellectual Property Office (EUIPO), the United States Patent and Trademark office (USPTO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO) and the China National Intellectual Property Administration (CNIPA). TM5 and ID5 are the multilateral cooperation forums of the five largest trademark and design offices in the world, which include the EUIPO, the USPTO, the JPO, the KIPO, and the CNIPA.

During the meetings, the TM5 and ID5 Partner Offices adopted Joint Statements on the 4th industrial revolution.

Moreover, the TM5 Partner Offices discussed the progress in their 15 cooperation projects, including a "common list of acceptable goods and services" to facilitate the registration of the same goods in each country, which were previously refused due to different examination guidelines. Additionally, the KIPO announced a new project regarding trademark infringement to publish illustrative trademark infringement cases on the TM5 website.

The ID5 Partner Offices also discussed the progress in their 9 cooperation projects, including "Comparative Study of the Application of a Grace Period for Industrial

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Design Applications” and adopted six new initiatives for the ID5 forum, including “3D Printing” and “Admissibility of Internet Information as Legitimate Disclosure.”

Won-Joo Park, the Commissioner of the KIPO mentioned that since the launch of the TM5 in 2012 and the ID5 in 2015, the TM5 and ID5 have played an important role in driving global trends and policy decision in the fields of trademarks and industrial designs. Mr. Park also stressed that the five partner offices should lead the changes in the fields of trademarks and industrial designs in the era of the 4th industrial revolution.

## GENERAL LAW

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### **Class Action System will be Introduced for any Violation of the Product Liability Act**

For rapid and fair settlement of consumer dispute, the class action system is expected to be introduced in product liability cases as early 2019. Under the class action system, if some of the victims receive a final ruling from the court in a lawsuit filed against the inflicting company, other victims may also enjoy the validity of such judgment without filing separate

litigation. In Korea, such system is being applied only in the securities sector.

According to the Product Liability Act as amended on April 19, 2018, if a manufacturer causes serious damage to life or body of a person as a result of not taking necessary measures against a defect of a product despite the manufacturer’s knowledge of such defect, the manufacturer shall be liable up to 3 times the damage sustained by the person. In addition, where the victim does not know the manufacturer of a product and the supplier of such product cannot reveal the identity of the manufacturer, the supplier shall compensate for the damage. In addition, the act has eased the victim’s burden of proof by stipulating that it shall be presumed that the product had a defect if the victim proves (i) that Smanufacturer; and (iii) that the damage would not ordinarily be caused if it were not for the relevant defect of the product.

Therefore, under the Product Liability Act, introduction of the class action system is expected to increase the frequency of product liability lawsuits to be filed as well as the amount of compensation to be awarded therefrom. In addition, it appears that manufacturers will need to

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thoroughly investigate customer claims at the initial stage, and once a product is found to have a defect, proactively take follow-up measures such as recalls. Suppliers, too, must always be knowledgeable of who made the product they are selling and notify such matters to the victims in a timely manner, if needed.

## LEE NEWS

### Lee International Hosts Seminar for EPO Examiners

On October 18, 2018, Lee International held a seminar with patent examiners from the European Patent Office (EPO). In the seminar, five European patent examiners, including the director in the mechanical engineering sector of the EPO, delivered speeches on the recent trend in prosecution at the EPO and effective intellectual property strategies for filing patent applications in Europe. For two hours, the participants discussed strategies for European patent filing.





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