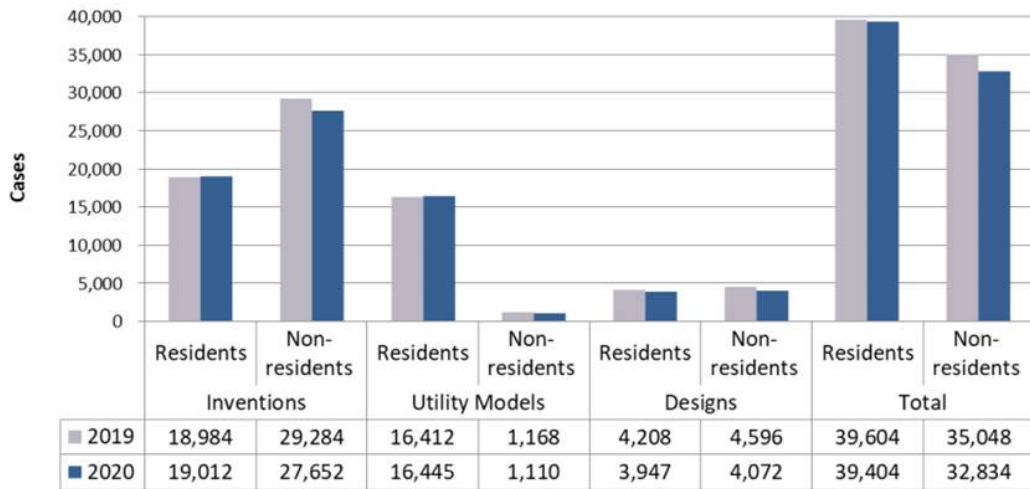


# Taiwan's Patent Activities in 2020, TSMC and Qualcomm continue taking the lead

Under the global threat of Covid-19, Taiwan saw a slight (3%) reduction in patent applications in 2020. That was mainly caused by a significant decrease of non-residents' applications, 2000 plus cases less than the previous year. Applications filed by residents also dropped by 1%; but the case number for inventions still grew to the highest level since 2014. Among local applicants, SMEs and universities made an impressive 17% and 16% annual growth in patent filings.

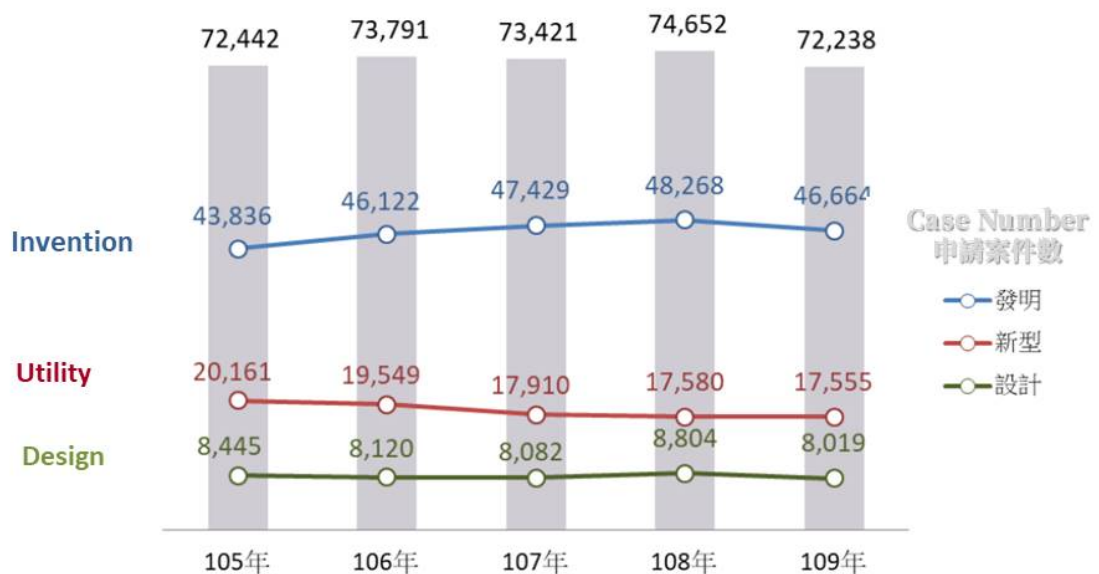
As to the rankings for patent applicants and recipients, TSMC retained the top (domestic and overall) applicant for the fifth consecutive year, with a total of 1,096 patent applications, and 680 grants in 2020.

## Residents & Non-Residents Comparison 國內外申請人比較 2019 vs. 2020



資料來源：經濟部智慧局，《智慧局公布109年受理專利商標申請概況》，CC創用授權：姓名標示-非商業性-禁止改作2.0台灣授權條款釋出。  
Source: TIPO, TIPO Statistics Report: Patent and Trademark Applications in 2020, Creative Commons CC BY-NC-ND 2.0

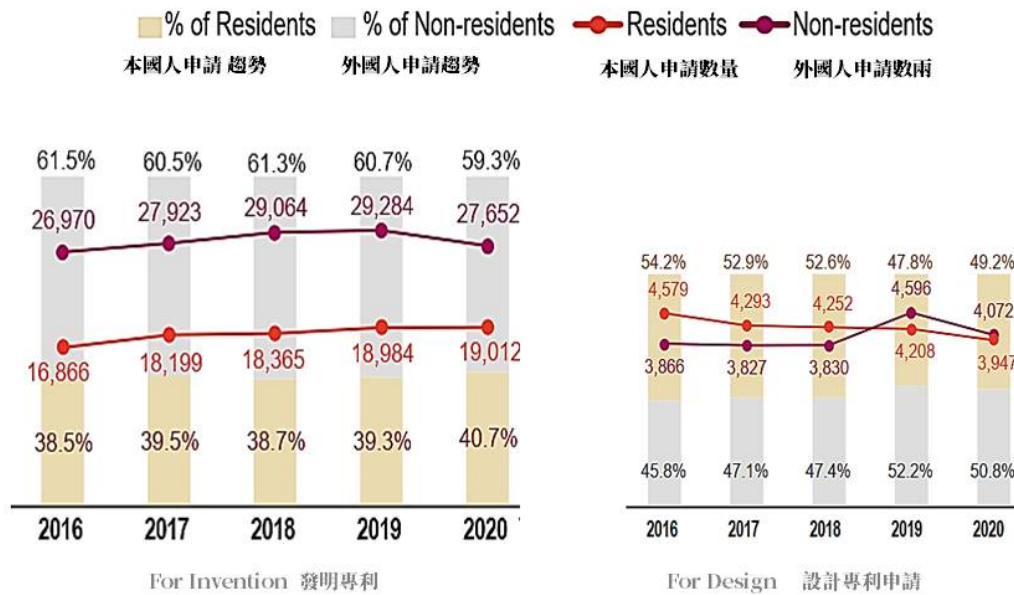
## Patent Application Trend in Taiwan 台灣專利申請趨勢 2016~2020



資料來源：經濟部智慧局，《智慧局公布109年受理專利商標申請概況》，CC創用授權：姓名標示-非商業性-禁止改作2.0台灣授權條款釋出。  
Source: TIPO, TIPO Statistics Report: Patent and Trademark Applications in 2020, Creative Commons CC BY-NC-ND 2.0

# Invention & Design Applications from 2016

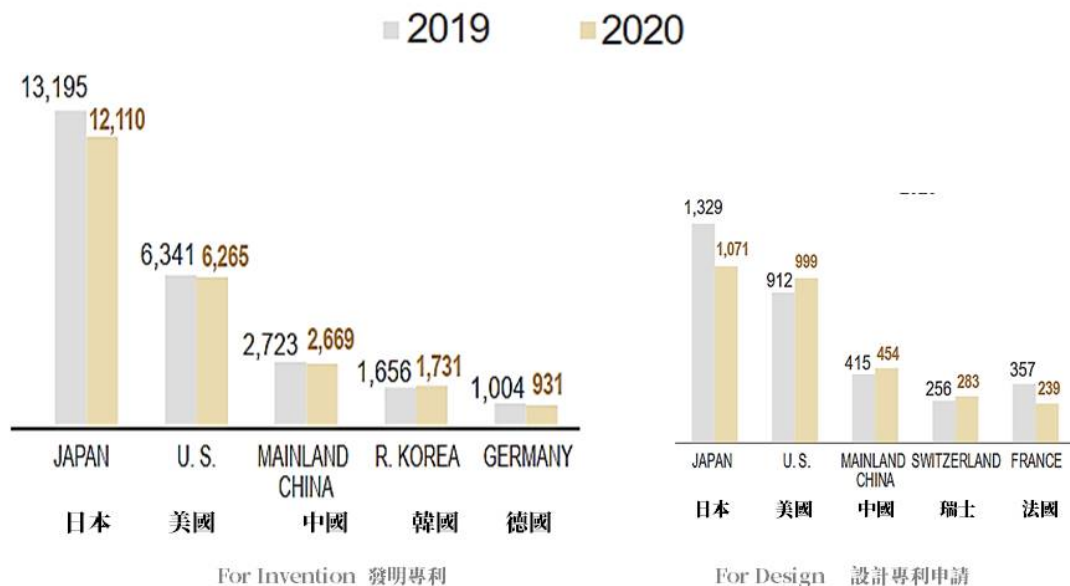
## 發明、設計專利申請案近5年趨勢



Source 資料來源：經濟部智慧局《中華民國109年智慧財產局年報 Taiwan Intellectual Property Office Annual Report 2020》；  
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# Patent Application by filing counties

## 五大專利申請國 2019~2020



Source 資料來源：經濟部智慧局《中華民國109年智慧財產局年報 Taiwan Intellectual Property Office Annual Report 2020》；  
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## Top 5 Applicants in 2020 五大發明專利申請人、獲證人

發明專利案件數

本國申請人	2019	2020	YoY	本國獲證人	2019	2020	YoY
台積電 TSMC	1333	1096	-18%	台積電 TSMC	454	680	50%
友達 AUO	532	439	-17%	友達 AUO	443	545	23%
瑞昱 Realtek	333	412	24%	工研院 ITRI	435	287	-34%
工研院 ITRI	368	337	-8%	聯發科 MediaTek	313	280	-11%
宏碁 Acer	407	334	-18%	瑞昱 Realtek	148	255	72%

發明專利獲證數

外國申請人	2019	2020	YoY	外國獲證人	2019	2020	YoY
高通 Qualcomm	582	720	24%	創新先進 (阿里巴巴) ANT	240	561	134%
應用材料 Applied Materials	632	615	-3%	應用材料 Applied Materials	415	361	-13%
日東電工 NITTO	402	461	15%	半導體能源研究 SEL	423	295	-30%
東京威力 TEL	492	435	-12%	高通 Qualcomm	141	290	106%
鎧俠 (東芝記憶體) Kioxia	297	337	13%	三星 Samsung	203	281	38%

資料來源：經濟部智慧局，《智慧局公布109年受理專利商標申請概況》，CC創用授權：姓名標示-非商業性-禁止改作2.0台灣授權條款釋出。  
Source: TIPO, TIPO Statistics Report: Patent and Trademark Applications in 2020, Creative Commons CC BY-NC-ND 2.0

## Taiwan is a major battlefield for innovation in the semiconductors and electronics industries

According to the data released by the TIPO, new applications for all three types of patents in 2020 have dropped by 3.2 percent to 72,238 cases. Of these, 46,664 cases were filed for inventions with a 3.3 % decrease from 2019; 17,555 cases ( 5% ↓) were for utility models, and 8,019 cases ( 8.9% ↓) were for designs.

Of the applications filed for inventions, more than 10 percent are semiconductor related and around 5 percent involve digital data processing. A closer look at the top 10 applicants shows that tech companies from semiconductors and electronics industries dominate the top ten rankings. This fairly reflects Taiwan's role in global markets.

The biggest patent filer from Taiwan is no surprise. TSMC, with a total of 1,096 applications for inventions, has maintained its top ranking for the fifth year in a row. The company filed 20% fewer applications but this was still double the amount of all its followers.

The Acer ranked 2nd with 523 applications for all three patent types, followed by AUO(466 ), Realtek (420), ITRI (352), MediaTek (330), Inventec (236), Hon Hai (231), Compal Electronics (209) and the TPCU (181). Among the leading applicants, Realtek and Compal Electronics both showed their best records in history. Inventec and Hon Hai also presented a 27% and a 16% growth respectively.

### **SMEs and Universities reaped rich gains in 2020**

Apart from the applications filed by foreigners, there were 19,012 invention patent applications (0.1%) filed by residents in 2020, a record high since 2014. SMEs and Universities particularly outperformed and enjoyed a 17 percent and 16 percent yearly growth, respectively. Such growth was able to set off the 4 percent fewer applications filed by big enterprises in the same year.

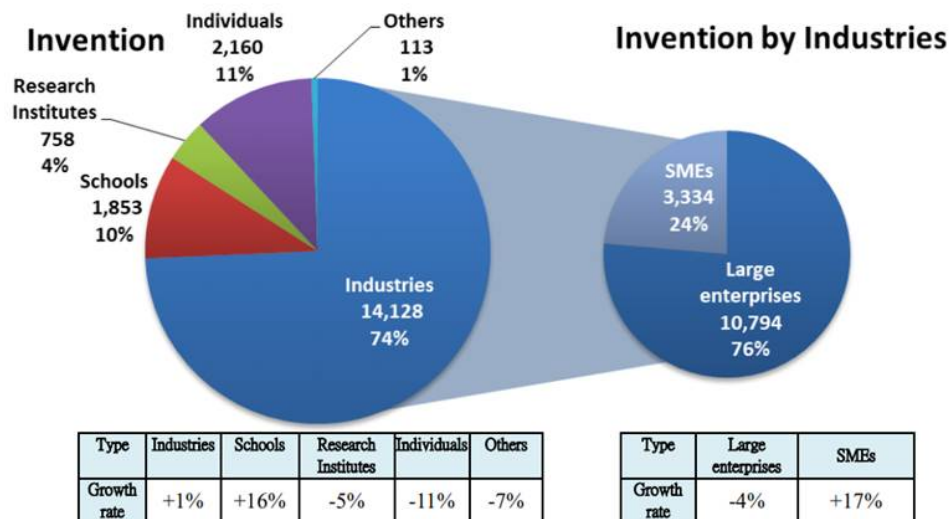
Further zooming in on other leading resident applicants in 2020, there are 60 enterprises, 27 universities, 5 research institutes, and 8 banks in the top 100 list. Enterprises are no doubt a crucial driving force for innovation breakthroughs in Taiwan. The listed 60 enterprises filed 6,315 new applications for inventions, 1,599 applications for utility models, and 599 applications for designs. This could be converted to 33% of overall residents' applications for Invention in the year, and 9.5% and 14.7% for the remaining two patent types.

Another 1822 new cases for inventions, 1375 cases for Utility models, and 89 cases for designs were filed by leading applicants from academic fields. More than half of

universities have seen a 20% annual growth.

The NCKU (National Cheng Kung University ) outshone all other top-tier universities with a 62.5% annual growth from 109 applications for inventions and 21 for other types. It was followed by the National Tsing Hua University with 102 cases, Yang Ming Chiao Tung University (86 cases), and Taiwan University (82 cases). A few universities specializing in technology and engineering also each submitted as many invention applications in 2020.

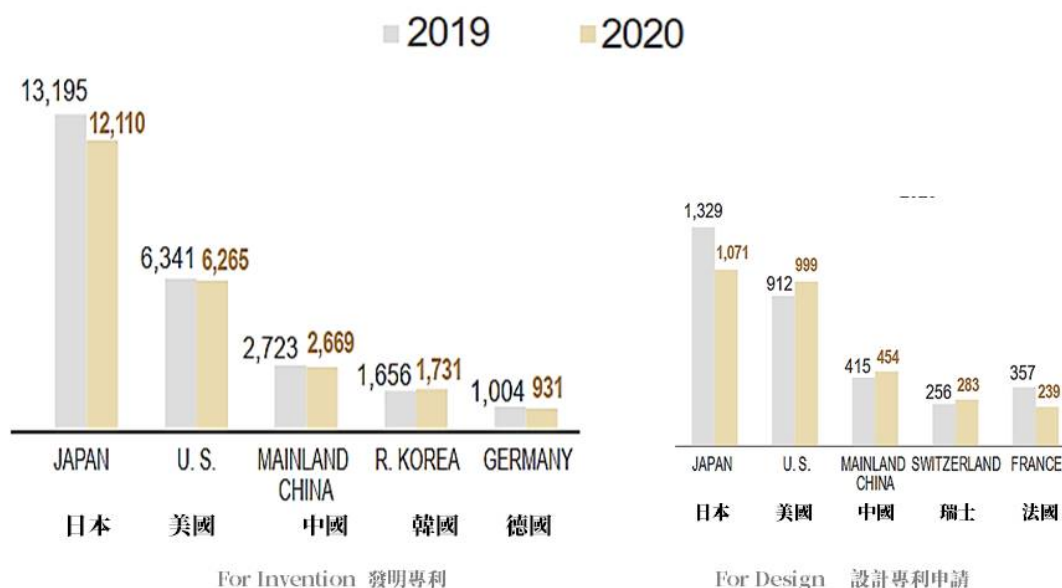
## Resident Invention Patent Applications by Applicant Type 國人發明專利申請人類別 2020



資料來源：經濟部智慧局，〈智慧局公布109年受理專利商標申請概況〉，CC創用授權：姓名標示-非商業性-禁止改作2.0台灣授權條款釋出。  
Source: TIPO, TIPO Statistics Report: Patent and Trademark Applications in 2020, Creative Commons CC BY-NC-ND 2.0

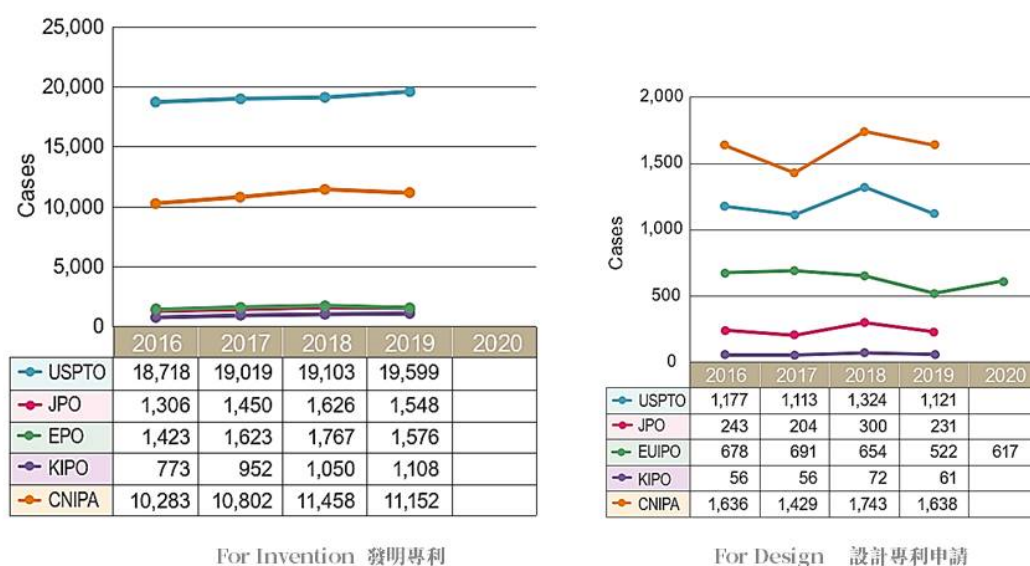


## Patent Application by filing counties 五大專利申請國 2019~2020



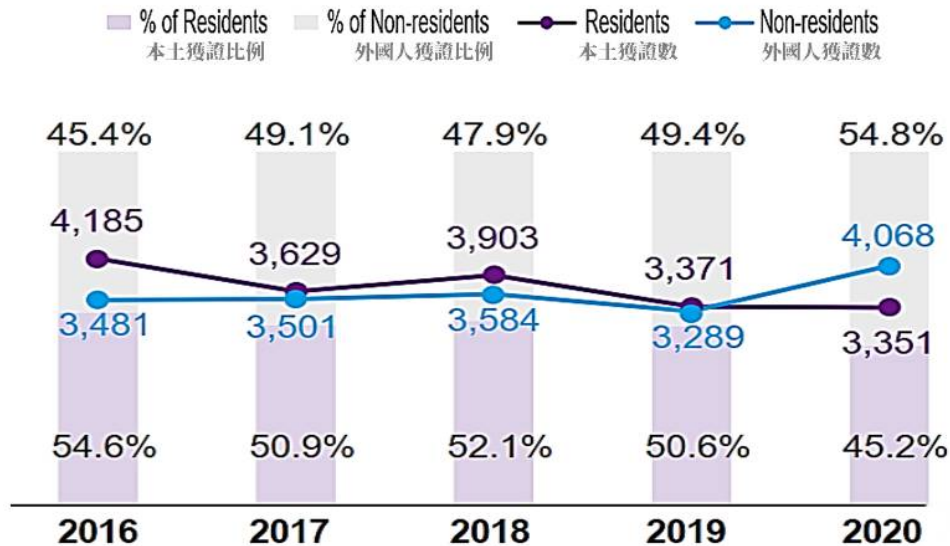
Source 資料來源：經濟部智慧局《中華民國109年智慧財產局年報 Taiwan Intellectual Property Office Annual Report 2020》；  
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## Patent Application by filing counties 五大專利申請國 2016~2020



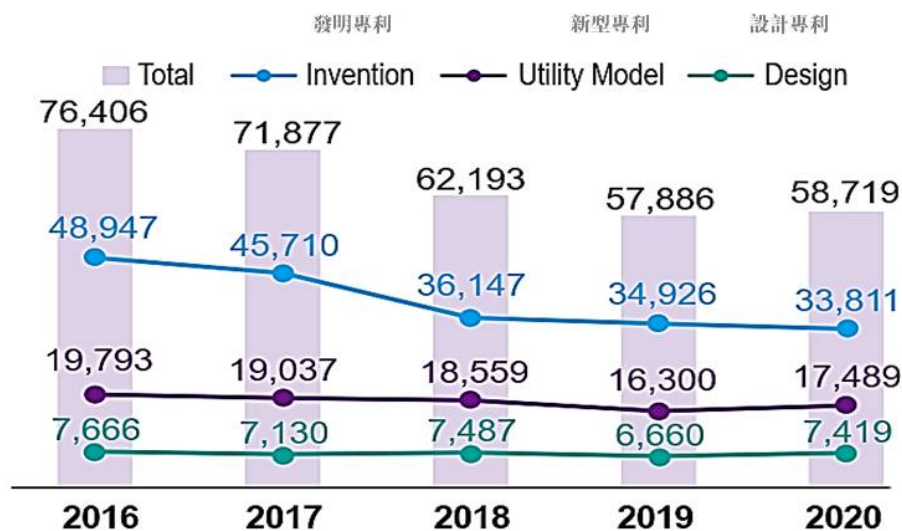
Source 資料來源：經濟部智慧局《中華民國109年智慧財產局年報 Taiwan Intellectual Property Office Annual Report 2020》；  
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## Design Patent Grants 2016~2020 By Residents vs. Non-Residents 國內外 設計專利 申請人近5年獲證數



Source 資料來源：經濟部智慧局《中華民國109年智慧財產局年報 Taiwan Intellectual Property Office Annual Report 2020》；  
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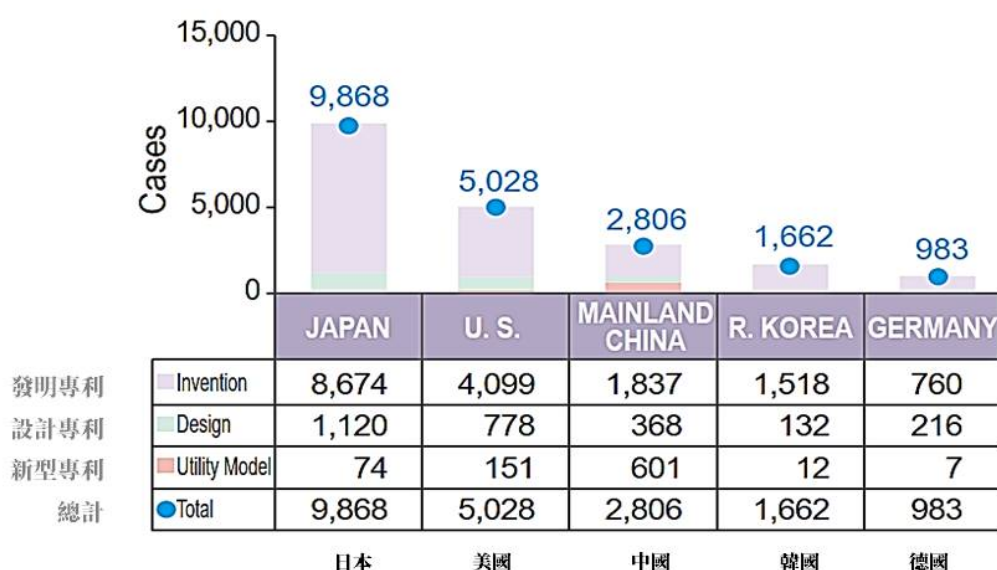
## Patent Grants in Taiwan 2016~2020 近5年 台灣專利授證數



Source 資料來源：經濟部智慧局《中華民國109年智慧財產局年報 Taiwan Intellectual Property Office Annual Report 2020》；  
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## Patent Grants by filing counties 五大專利獲證國 2016~2020



Source 資料來源：經濟部智慧局《中華民國109年智慧財產局年報 Taiwan Intellectual Property Office Annual Report 2020》；  
Edited by 圖片編輯 Top Team International Patent and Trademark Office；CC創用授權：姓名標示-非商業性-禁止改作；CC BY-NC-ND 2.0

## NCKU provides applicants support from the very beginning

Not only was there an amazing growth in patenting research outcomes, NCKU also reached an exceptional 18% patent technology transfer rate, which has brought more than NTD 100 million dollars every year. Such admirable momentum in patent activities didn't come out of the blue. The university has made a great effort to build a nourishing environment and motivational climate for patent discoveries and technology commercialization.

For example, its Innovation Headquarters was set up in recent years to be home to more than 80 R&D centers and to enhance the overall synergies by leveraging resources, including administrative supports, with around NT\$900 million in yearly R&D funding.

## **Average pendency for invention patents examination remains First-Class among developed countries**

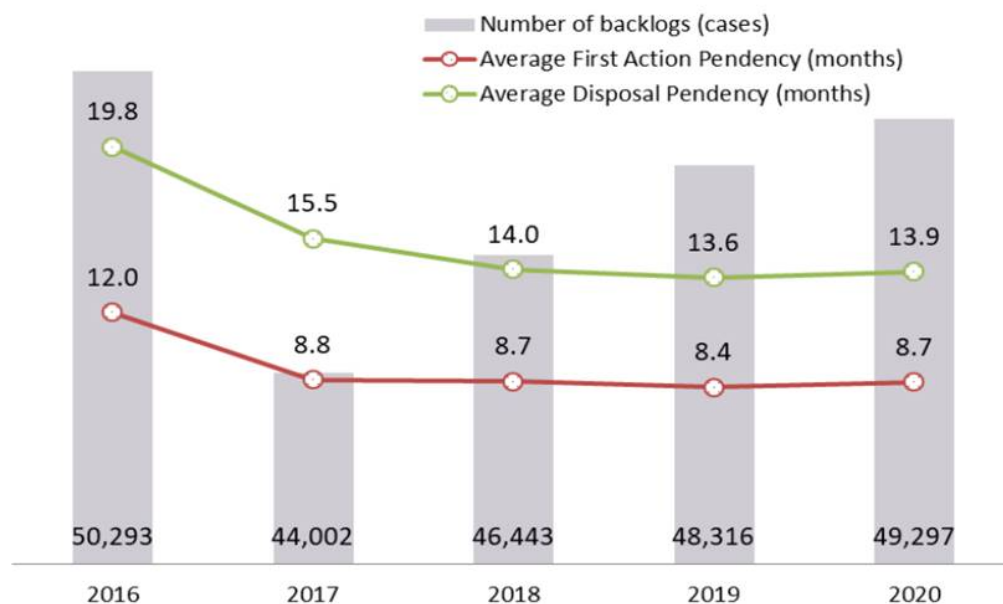
Last but not least, let's take a quick look at the average pendency for invention patents this year. With TIPO's continued effort to enhance its examination efficiency, the average first office action pendency for invention patent was 8.4 months, and the average disposal pendency was 13.6 months. Both were better than those of IP office in Japan, Korea, China, EU and the US.

TIPO as well released the average pendencies for the Patent Prosecution High (PPH) programs and the Accelerated Examination programs (AEP) in 2020. As of the end of 2020, the average first office action pendency for patents filed under the TIPO-USPTO and the TIPO-JPO PPH programs was between 41 and 57 days, and the average disposal pendency was between 121 and 136 days. As for the AEP requests, the average first office action pendency was between 44 and 87 days, and the average disposal pendency was between 131 and 200 days.

These programs can save significant time for applicants. PPH programs currently works with IP offices between Taiwan and the US, Japan, Singapore, Korea, Spain, Canada, Poland and other countries. The AEP requests are applications with either one of following conditions:

- with corresponding patent granted under substantive examination by a foreign patent authority;
- with an office action issued by EPO, JPO or USPTO during the substantive examination;
- when the invention patent application is essential to commercial exploitation;
- related to green energy technology.

## Invention Patent Examination Trend 專利申請審理時間 2016~2020



資料來源：經濟部智慧局，《智慧局公布109年受理專利商標申請概況》，CC創用授權：姓名標示-非商業性-禁止改作2.0台灣授權條款釋出。  
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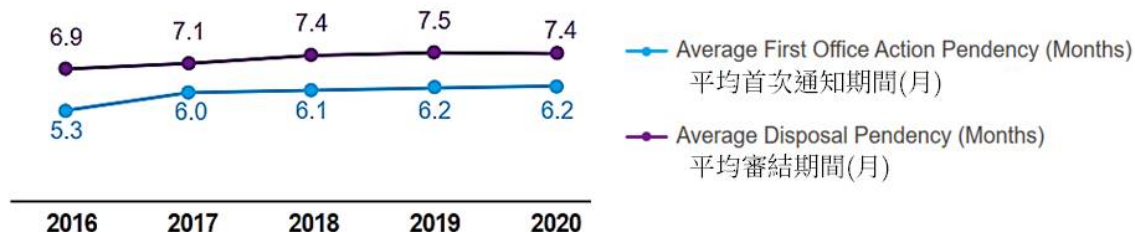
## Patent Examination Results for Invention 2016~2020 發明專利審查核近5年准率

Year		2016	2017	2018	2019	2020
Item	Cases	44,891	35,756	30,585	30,987	30,542
	Percentage	73.3%	76.9%	77.4%	75.4%	72.7%
Rejection	Cases	14,782	9,741	8,063	9,144	10,509
	Percentage	24.1%	21.0%	20.4%	22.3%	25.0%
Others (including withdrawals and not accepted)	Cases	1,614	972	880	957	973
	Percentage	2.6%	2.1%	2.2%	2.3%	2.3%

Source 資料來源：經濟部智慧局《中華民國109年智慧財產局年報 Taiwan Intellectual Property Office Annual Report 2020》；  
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# Examination Pendency & Results for Design Patent 2016-2020

## 設計專利審查 期間&核准率



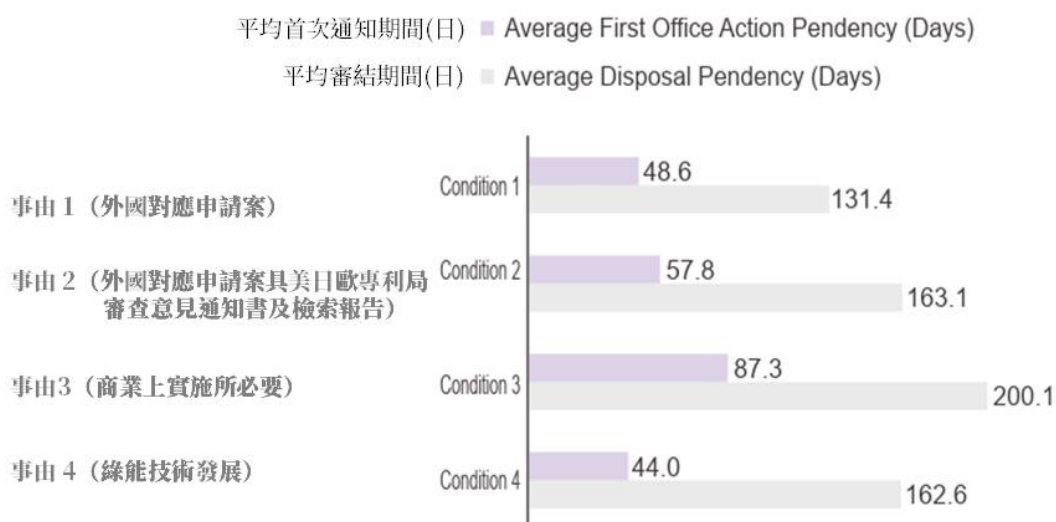
Unit: Case, %

Year		2016	2017	2018	2019	2020
Item	Cases	7,689	7,174	7,530	6,906	7,164
	Percentage	91.0%	90.7%	89.8%	86.4%	84.4%
Rejection 核駁	Cases	607	486	614	741	989
	Percentage	7.2%	6.1%	7.3%	9.3%	11.6%
Others (including withdrawals and not accepted)	Cases	154	252	242	348	338
	Percentage	1.8%	3.2%	2.9%	4.4%	4.0%

Source 資料來源：經濟部智慧局《中華民國109年智慧財產局年報 Taiwan Intellectual Property Office Annual Report 2020》；  
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# Pendency for AEP Request

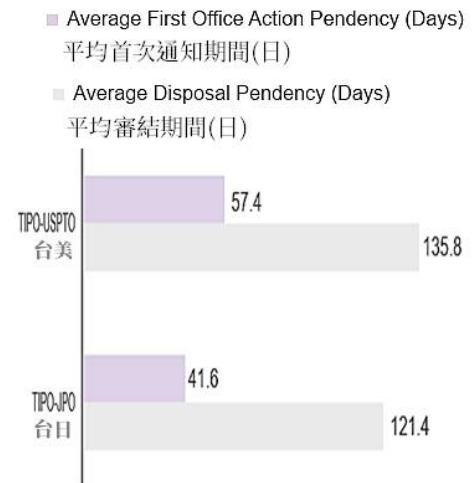
## 加速審查作業平均需時



Source 資料來源：經濟部智慧局《中華民國109年智慧財產局年報 Taiwan Intellectual Property Office Annual Report 2020》；  
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## Cases & Pendency for PPH Request 高速公路審查申請案量、作業所需時間

PPH 計畫	申請人國別							總計	
									其他
	中華民國	美國	日本	西班牙	南韓	波蘭	加拿大		
臺美	47	444	9	0	25	0	3	74	602
臺日	1	0	475	0	0	0	0	7	483
臺西	0	0	0	0	0	0	0	0	0
臺韓	0	2	6	0	7	0	0	5	20
臺波	0	0	0	0	0	0	0	0	0
臺加	0	0	0	0	0	0	0	0	0
小計	48	446	490	0	32	0	3	86	1,105



Source 資料來源：經濟部智慧局《中華民國109年智慧財產局年報 Taiwan Intellectual Property Office Annual Report 2020》；  
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- TIPO Statistics Report: Patent and Trademark Applications in 2020
- Lee Shu-lien, NAIP News, TSMC Recognized with 2021 IEEE Corporate Innovation Recognized for leadership in 7nm semiconductor foundry technology, enabling customers' innovations in widespread applications, May 13, 2021