

# Patent Family Information in DWPI / CAplus / INPAFAMDB

*The ultimate team*

STN e-seminar  
February 2020



**STN**<sup>®</sup>

**FIZ Karlsruhe**<sup>®</sup>  
Leibniz Institute for Information Infrastructure

**CAS**<sup>®</sup>  
A DIVISION OF THE  
AMERICAN CHEMICAL SOCIETY



## Agenda

- Patent families and priority
- Derwent World Patents Index
- CPlus
- INPAFAMDB and INPADOCDB
- Error corrections
- Non-convention equivalents
- Multi-file patent search

## Patent families summarize the global legal protection of an invention

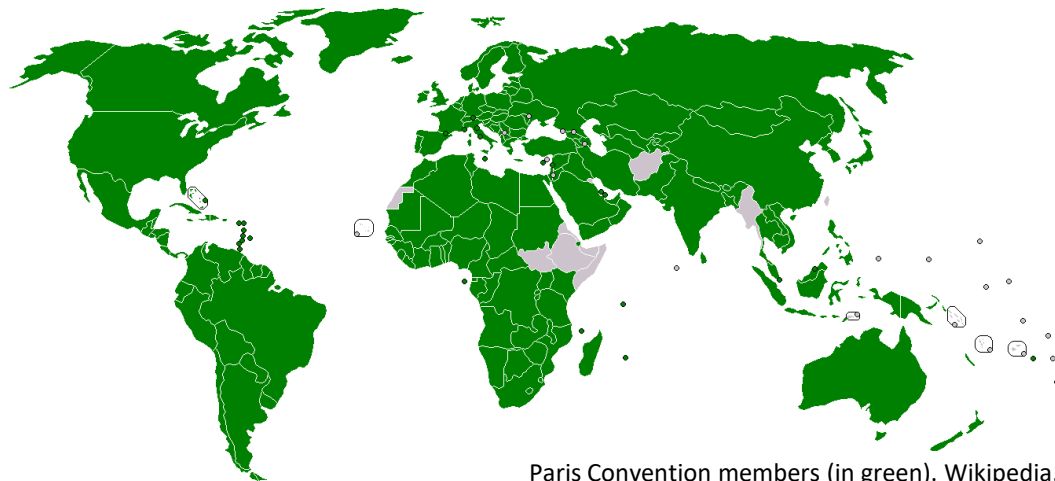
- A patent family is a collection of patent applications and grants for the same invention
- They share the same priority.

## Why do we need patent family information?

- Useful concept for database producers and information professionals
- Patent family information is of high commercial relevance
  - Protect a company's *patent portfolio*
  - Commercialize patents and technologies through *licensing deals*
  - Determine commercial value of the patent portfolio in due diligence assessments
  - Monitor *competitor activities* and identify potential markets
  - Assess the IP landscape for *freedom-to-operate*
- Patent families could help to overcome language barriers
  - Identify patent publications in *familiar languages*
  - Fewer translation expenses and delays

## The concept of patent families is closely related to the Paris Convention of 1883

- **Priority right** – on the basis of a regular first application, the patent applicant has **12 months** to apply for protection (patents, utility models), in any of the contracting states claiming the priority of the first application
- Almost all patents are filed within the Paris Convention:  
177 member states
- All family members filed within the Paris Convention have a priority relationship



A patent family is not...

... a simple concept.

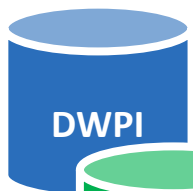
... a uniform concept.

... a legal concept.

# Database producers use different patent family definitions



The broad **INPADOC** patent family comprises *all patent publications directly or indirectly* linked via priority number(s)

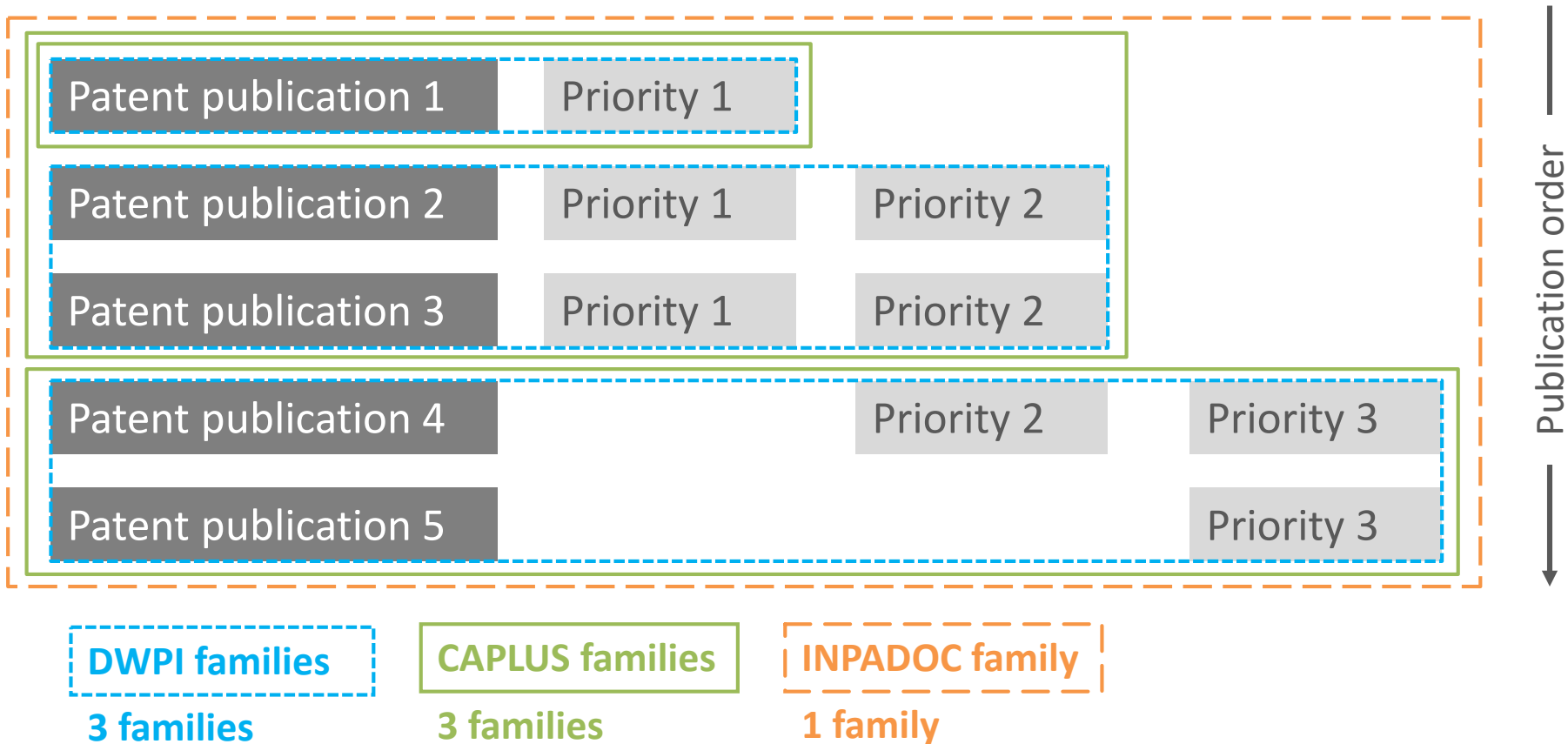


**CAplus** and **Derwent World Patents Index** select the *basic patent* for indexing

Criteria that define most *equivalents* for CAplus/DWPI

- Shared single priority application number
- Shared list of priority applications
- A patent **referencing the basic as its sole priority**
- A patent **referencing the basic as one of its priorities**
- Some shared priorities with the basic

# Priority information is key to patent family building





## The benefits of narrow and well-defined patent families

- Documents whose priorities are in common with the basic publication
- DWPI & CAplus have narrow and well-defined patent families
- Benefits for the searcher:
  - More indexed information (as more families)
  - Comprehensive and precise retrieval
  - Enhanced relevance assessment
- Proven algorithms are applied to generate patent families: basic/equivalents
- A team of experts identifies and links non-convention equivalents to corresponding patent families

## Example: small and well-defined DWPI patent families

The extended patent family for WO2016018986 (INPAFAMDB) is split into 24 separate DWPI patent families (DWPI records), each with value-added information.

**“Assay systems for determination of source contribution in a sample” from Ariosa Diagnostics**  
**INPAFAMDB AN: 44255340**

DWPI AN 2019-17440Y

DWPI AN 2014-R09614

DWPI AN 2012-J69360

DWPI AN 2012-H26266

DWPI AN 2018-913206

DWPI AN 2013-R69012

DWPI AN 2012-J68568

DWPI AN 2012-D77899

DWPI AN 2018-01588E

DWPI AN 2013-L75523

DWPI AN 2012-J67817

DWPI AN 2012-B89965

DWPI AN 2016-08935F

DWPI AN 2013-K20511

DWPI AN 2012-J67737

DWPI AN 2012-B89964

DWPI AN 2014-U77987

DWPI AN 2013-F50628

DWPI AN 2012-J67599

DWPI AN 2012-B89963

DWPI AN 2014-R59663

DWPI AN 2013-C35799

DWPI AN 2012-J67482

DWPI AN 2012-B89962

## Example: Three selected Derwent titles

“Assay systems for determination of source contribution in a sample” from Ariosa Diagnostics  
INPAFAMDB AN: 44255340

### DWPI AN 2013-R69012

WO 2012019187 A2	AU 2011285512 A1
US 20120034603 A1	AU 2011285512 B2
US 20120034685 A1	EP 2601309 A2
US 20120040859 A1	IL 224554 A
CA 2807569 A1	...

Calculating risk of X/Y chromosomal aneuploidy involves calculating values of likelihood that Y/X chromosome is present in maternal sample and calculating risk by comparing values to mathematic model assuming specified copies of chromosome

### DWPI AN 2012-B89965

AU2011285477 A1	EP2601311 B1
AU2011285477 B2	EP3395955 A1
AU2011285477 C1	ES2685465 T3
CA2807572 A1	IL224557 A
EP2601311 A2	...

Set of oligonucleotides useful for performing ligation-based detection of nucleic acid region of interest, comprises first oligonucleotide, second oligonucleotide, and bridging oligonucleotides

### DWPI AN 2012-B89962

AU2011285477 A1	EP2601311 B1
AU2011285477 B2	EP3395955 A1
AU2011285477 C1	ES2685465 T3
CA2807572 A1	IL224557 A
EP2601311 A2	...

Single assay system useful for detecting copy number variation in genomic regions in mixed sample, by introducing set oligonucleotides to mixed sample, ligating oligonucleotides, amplifying products and detecting sequence



## Agenda

- Patent families and priority
  - Derwent World Patents Index
  - CAplus
  - INPAFAMDB and INPADOCDB
  - Error corrections
  - Non-convention equivalents
  - Multi-file patent search
- Introduction
  - Common display formats
  - A tour through a record
    - + How to retrieve all members of an extended patent family

# What is the Derwent World Patents Index (DWPI)?

- The largest value-added database of global patent data
  - Covers 59 patent authorities and 2 sources of defensive publications\*
- Covering all areas of technology
- An index of global patent publications
  - Concise patent families (one record/invention)
  - Enhanced English titles and abstracts
  - Classification and indexing
  - Data standardization
- Updates twice a week
- Produced by Clarivate Analytics

## A DWPI sample record

### Common display formats:

- BRIEF / IBRIEF (AN, TI, PA, **PN**, AB)
- BIB / IBIB (+ **PIA**, ADT, FDT, PRAI)
- STD / ISTD (+ **PI**, IPC) *DEFAULT*
- ALL / IALL (+ classifications)
- FULL / IFULL (+ ABEX, TECH)
- MAX / IMAX (+ chemical and polymer indexing)



content

### Patent family display format:

- **FAM** (PI, ADT, FDT, PRAI)

# A DWPI sample record

## Common display formats:

- BRIEF / IBRIEF (AN, TI, PA, **PN**, AB)
- **BIB / IBIB** (+ **PIA**, ADT, FDT, PRAI)
- STD / ISTD (+ **PI**, IPC) *DEFAULT*
- ALL / IALL (+ classifications)
- FULL / IFULL (+ ABEX, TECH)
- MAX / IMAX (+ chemical and polymer indexing)

content

The IBIB display format shows the same fields as BIB, but indented and patent information in table format.

L1 ANSWER 1 OF 1 WPIINDEX COPYRIGHT 2020 CLARIVATE ANALYTICS on STN  
 ACCESSION NUMBER: 2017-64356T [201767] WPIINDEX Full-text  
 CROSS REFERENCE: 2017-64356Q; 2017-64356R  
 TITLE: Anti-reflective film for display device, has extremums at specified thickness on graph obtained from Fourier transform analysis for X-ray reflectance measurement carried out using copper-K(alpha) ray  
 DERIVENT CLASS: A14; A89; P73; P81; S03; V07  
 INVENTOR: BYUN J; BYUN J S; CHANG Y; CHANG Y R; JANG S; JANG S H; KIM B; KIM B K; KIM H; KOO J; KOO J P; LEE J K; OH S; OH S J; SONG I; SONG I Y; LEE J  
 PATENT ASSIGNEE: (GLDS-C) LG CHEM LTD; (GLDS-C) LG CHEM CO LTD  
 COUNTRY COUNT: 135

### PATENT INFO ABBR.:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
WO 2017155335	A1	20170914	(201767)*	KO	60	[18]
KR 2017105437	A	20170919	(201767)	KO		
TW 2017041689	A	20171201	(201817)	ZH		
KR 2018084712	A	20180725	(201852)	KO		
TW I627435	B	20180621	(201858)	ZH		
CN 108474870	A	20180831	(201860)	ZH		
EP 3376266	A1	20180919	(201865)	EN		
KR 2018111749	A	20181011	(201871)	KO		
KR 2018112752	A	20181012	(201871)	KO		
JP 2018533068	T	20181108	(201875)	JA	36	
KR 1907653	B1	20181012	(201875)	KO		
KR 1916944	B1	20181108	(201876)	KO		
EP 3376266	A4	20190102	(201903)	EN		
JP 2019015954	A	20190131	(201910)	JA	36	
KR 1916943	B1	20190130	(201910)	KO		
CN 109298470	A	20190201	(201913)	ZH		
US 20190025467	A1	20190124	(201915)	EN		
KR 2019043515	A	20190426	(201933)	KO		
KR 1973196	B1	20190823	(201969)	KO		

### APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2017155335	A1	WO 2017-KR2580	20170309
CN 109298470	A Div. Ex	CN 2017-80000853	20170309

# Get the overview about the patent family: D IBIB – (1)

L1 ANSWER 1 OF 1 WPINDEX COPYRIGHT 2020 CLARIVATE ANALYTICS on STN  
 ACCESSION NUMBER: 2017-64356T [201767] WPIX Full-text  
 CROSS REFERENCE: 2017-64356Q; 2017-64356R  
 TITLE: Anti-reflective film for display device, has extremums at  
 specified thickness on graph obtained from Fourier  
 transform analysis for X-ray reflectance measurement  
 carried out using copper-K(alpha) ray  
 DERWENT CLASS: A14; A89; P73; P81; S03; V07  
 INVENTOR: BYUN J; BYUN J S; CHANG Y; CHANG Y R; JANG S; JANG S H;  
 KIM B; KIM B K; KIM H; KOO J; KOO J P; LEE J K; OH S; OH  
 S J; SONG I; SONG I Y; LEE J  
 PATENT ASSIGNEE: (GLDS-C) LG CHEM LTD; (GLDS-C) LG CHEM CO LTD  
 COUNTRY COUNT: 135

Records belonging to one extended patent family

## PATENT INFO ABBR. :

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
WO 2017155335	A1	20170914	(201767) *	KO	60[18]	
KR 2017105437	A	20170919	(201767)	KO		
TW 2017041689	A	20171201	(201817)	ZH		
KR 2018084712	A	20180725	(201852)	KO		
TW I627435	B	20180621	(201858)	ZH		
CN 108474870	A	20180831	(201860)	ZH		
EP 3376266	A1	20180919	(201865)	EN		

...



# Locating patent family information in DWPI

L1 ANSWER 1 OF 1 WPINDEX COPYRIGHT 2020 CLARIVATE ANALYTICS on STN  
 ACCESSION NUMBER: 2017-64356T [201767] WPIX Full-text  
 CROSS REFERENCE: 2017-64356Q; 2017-64356R  
 TITLE: Anti-reflective film for display device, has extremums at specified thickness on graph obtained from Fourier transform analysis for X-ray reflectance measurement carried out using copper-K(alpha) ray  
 DERWENT CLASS: A14; A89; P73; P81; S03; V07  
 INVENTOR: BYUN J; BYUN J S; CHANG Y; CHANG Y R; JANG S; JANG S H; KIM B; KIM B K; KIM H; KOO J; KOO J P; LEE J K; OH S; O S J; SONG I; SONG I Y; LEE J  
 PATENT ASSIGNEE: (GLDS-C) LG CHEM LTD; (GLDS-C) LG CHEM CO LTD  
 COUNTRY COUNT: 135

Records belonging to one extended patent family

Extended patent families can be identified

- (1) via the **Cross Reference (CR)** field (SELECT or TRANSFER) or
- (2) by using the **FSEARCH** command.

PATENT INFO ABBR. :

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
WO 2017155335	A1	20170914	(201767) *	KO	60[18]	
KR 2017105437	A	20170919	(201767)	KO		
TW 2017041689	A	20171201	(201817)	ZH		
KR 2018084712	A	20180725	(201852)	KO		
TW I627435	B	20180621	(201858)	ZH		
CN 108474870	A	20180831	(201860)	ZH		
EP 3376266	A1	20180919	(201865)	EN		

...

## Locating extended patent families in DWPI via CR

```
L1 ANSWER 1 OF 1 WPIINDEX COPYRIGHT 2020 CLARIVATE ANALYTICS on STN
ACCESSION NUMBER: 2017-64356T [201767] WPIX Full-text
CROSS REFERENCE: 2017-64356Q; 2017-64356R
TITLE: Anti-reflective film for display device, has extremums at
specified thickness on graph obtained from Fourier
...
```

```
=> SEL L1 1 AN CR
```

```
E1 THROUGH E3 ASSIGNED
```

```
=> S E1-3/AN, CR
```

```
L2 3 (2017-64356Q/AN, CR OR 2017-64356R/AN, CR OR 2017-64356T/AN, CR)
```

To retrieve all records of an extended patent family: SELECT AN and CR from record 1, answer set L1 and search in AN and CR fields.

For larger patent families, repeat SELECT/TRANSFER!



# Locating extended patent families in DWPI via CR

```
L1 ANSWER 1 OF 1 WPIINDEX COPYRIGHT 2020 CLARIVATE ANALYTICS on STN
ACCESSION NUMBER: 2017-64356T [201767] WPIX Full-text
CROSS REFERENCE: 2017-64356Q; 2017-64356R
TITLE: Anti-reflective film for display device, has extremums at
specified thickness on graph obtained from Fourier
...
```

=> **SEL L1 1 AN CR**

E1 THROUGH E3 ASSIGNED

=> **S E1-3/AN, CR**

```
L2 3 (2017-64356Q/AN, CR OR 2017-64356R/AN, CR OR 2017-64356T/AN, CR)
```

=> **D L2 1- AN CR TI PN**

```
L2 ANSWER 1 OF 3 WPIX COPYRIGHT 2020 CLARIVATE ANALYTICS on STN
AN 2017-64356T [201767] WPIX Full-text
CR 2017-64356Q; 2017-64356R
TI Anti-reflective film for display device, has extremums at specified
thickness on graph obtained from Fourier transform analysis for X-ray
reflectance measurement carried out using copper-K(alpha) ray
PI WO 2017155335 A1 20170914 (201767)* KO 60[18]
KR 2017105437 A 20170919 (201767) KO
...
```

To retrieve all records of an extended patent family: SELECT AN and CR from record 1, answer set L1 and search in AN and CR fields.

For larger patent families, repeat SELECT/TRANSFER!

In this example, the extended patent family is represented by 3 separate DWPI records.

Check the family members by the title!

# Locating extended patent families in DWPI by FSEARCH

=> **FSEARCH WO2017155335/PN** ←

FSEARCH Lx *or*  
FSEARCH WO2017155335/PN

FSEARCH locates additional records containing related patents from an extended family. FSEARCH iteratively searches APs, PRNs and PNs.

# Locating extended patent families in DWPI by FSEARCH

=> **FSEARCH WO2017155335/PN** ←

...

SEA L5  
L6            3 L5

FSORT L6  
L7            3 FSO L6 ←

1 Multi-record Family      Answers 1-3  
0 Individual Records  
0 Non-patent Records

=> **D L7 1- AN CR TI PN**

L7    ANSWER 1 OF 3    WPIX COPYRIGHT 2020    CLARIVATE ANALYTICS on STN  
AN    2017-64356T [201767]    WPIX Full-text  
CR    2017-64356Q; 2017-64356R  
TI    Anti-reflective film for display device, has extremums at specified  
      thickness on graph obtained from Fourier transform analysis for X-ray  
      reflectance measurement carried out using copper-K(alpha) ray  
PI    WO 2017155335    A1 20170914 (201767) \* KO 60[18]  
      KR 2017105437    A 20170919 (201767)    KO

FSEARCH Lx *or*  
FSEARCH WO2017155335/PN

FSEARCH locates additional records containing related patents from an extended family. FSEARCH iteratively searches APs, PRNs and PNs.

In this example, the *extended patent family* is represented by 3 separate DWPI records.

# Example: small and well-defined DWPI patent family

## Anti-Reflective Film, Patents from LG Chem INPAFAMDB AN: 61285328

### DWPI AN: 2017-64356R

<b>WO 2017155337</b>	<b>A1</b>
KR 2017106226	A
KR 2017118028	A
KR 1790240	B1
EP 3251832	A1
KR 2017129669	A
CN 107635765	A
KR 2018029014	A
KR 2018029015	A
US 20180106929	A1
EP 3251832	A4
KR 1919128	B1
CN 107635765	B
KR 1936370	B1
US 10222510	B2
KR 1953775	B1
US 20190137658	A1
US 20190137659	A1
KR 1953776	B1

### DWPI AN: 2017-64356T

<b>WO 2017155335</b>	<b>A1</b>
KR 2017105437	A
TW 2017041689	A
KR 2018084712	A
TW I627435	B
CN 108474870	A
EP 3376266	A1
KR 2018111749	A
KR 2018112752	A
JP 2018533068	T
KR 1907653	B1
KR 1916944	B1
EP 3376266	A4
JP 2019015954	A
KR 1916943	B1
CN 109298470	A
US 20190025467	A1
KR 2019043515	A

### DWPI AN: 2017-64356Q

<b>WO 2017155338</b>	<b>A1</b>
KR 2017106920	A
TW 2018003726	A
EP 3318903	A1
CN 108027452	A
US 20180231687	A1
EP 3318903	A4
JP 2018533762	T
KR 1906492	B1
JP 6476347	B2
JP 2019070858	A

# Example: small and well-defined DWPI patent family

## Anti-Reflective Film, Patents from LG Chem INPAFAMDB AN: 61285328

### DWPI AN: 2017-64356R

WO 2017155337	A1
KR 2017106226	A
KR 2017118028	A
KR 1790240	B1
EP 3251832	A1
KR 2017129669	A
CN 107635765	A
KR 2018029014	A
KR 2018029015	A
US 20180106929	A1
EP 3251832	A4
KR 1919128	B1
CN 107635765	B
KR 1936370	B1
US 10222510	B2
KR 1953775	B1
US 20190137658	A1
US 20190137659	A1
KR 1953776	B1

### DWPI AN: 2017-64356T

WO 2017155335	A1
KR 2017105437	A
TW 2017041689	A
KR 2018084712	A
TW I627435	B
CN 108474870	A
EP 3376266	A1
KR 2018111749	A
KR 2018112752	A
JP 2018533068	T
KR 1907653	B1
KR 1916944	B1
EP 3376266	A4
JP 2019015954	A
KR 1916943	B1
CN 109298470	A
US 20190025467	A1
KR 2019043515	A

### DWPI AN: 2017-64356Q

WO 2017155338	A1
KR 2017106920	A
TW 2018003726	A
EP 3318903	A1
CN 108027452	A
US 20180231687	A1
EP 3318903	A4
JP 2018533762	T
KR 1906492	B1
JP 6476347	B2
JP 2019070858	A

Each PCT Family (PCT application and corresponding transfers) is in one Derwent record

# Example: small and well-defined DWPI patent family

## Anti-Reflective Film, Patents from LG Chem INPAFAMDB AN: 61285328

DWPI AN: 2017-64356R

WO 2017155337 A1

ANTI-REFLECTIVE FILM

**Antireflective film used in display device, comprises hard coating layer, and low refractive layer comprising binder resin, layer comprising hollow inorganic nanoparticles and layer comprising solid inorganic nanoparticles**

US 20190137659 A1  
KR 1953776 B1

DWPI AN: 2017-64356T

WO 2017155335 A1

ANTI-REFLECTIVE FILM

Anti-reflective film for display device, **has extremums** at specified thickness on graph obtained from Fourier transform analysis **for X-ray reflectance measurement** carried out using copper-K(alpha) ray

KR 2019043515 A

DWPI AN: 2017-64356Q

WO 2017155338 A1

ANTI-REFLECTIVE FILM

Anti-reflective film for screen of display device, **has peak(s) in scattering vector** of preset range on graph showing log value of scattering strength for scattering vector defined with respect to small-angle scattering of x-ray radiation

TIO

TI



# The DWPI patent family in table format

L1 ANSWER 1 OF 1 WPIINDEX COPYRIGHT 2020 CLARIVATE ANALYTICS on STN  
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 CROSS REFERENCE: 2017-64356Q; 2017-64356R  
 TITLE: Anti-reflective film for display device, has extremums at  
 specified thickness on graph obtained from Fourier  
 transform analysis for X-ray reflectance measurement  
 carried out using copper-K(alpha) ray  
 DERWENT CLASS: A14; A89; P73; P81; S03; V07  
 INVENTOR: BYUN J; BYUN J S; CHANG Y; CHANG Y R; JANG S; JANG S H;  
 KIM B; KIM B K; KIM H; KOO J; KOO J P; LEE J K; OH S; OH  
 S J; SONG I; SONG I Y; LEE J  
 PATENT ASSIGNEE: (GLDS-C) LG CHEM LTD; (GLDS-C) LG CHEM CO LTD  
 COUNTRY COUNT: 135

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PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
WO 2017155335	A1	20170914	(201767) *	KO	60[18]	
KR 2017105437	A	20170919	(201767)	KO		
TW 2017041689	A	20171201	(201817)	ZH		
KR 2018084712	A	20180725	(201852)	KO		
TW I627435	B	20180621	(201858)	ZH		
CN 108474870	A	20180831	(201860)	ZH		
EP 3376266	A1	20180919	(201865)	EN		

...

DWPI patent family comprising the basic patent (\*) and equivalent patent family members (application date order).

Subsections of PI-field can be searched separately.

All data pertaining to one document is listed in one line and can be linked using the P-operator.

# Fields of the DWPI patent information table

L1 ANSWER 1 OF 1 WPINDEX COPYRIGHT 2020 CLARIVATE ANALYTICS on STN  
 ACCESSION NUMBER: 2017-64356T [201767] WPIX Full-text  
 CROSS REFERENCE: 2017-64356Q; 2017-64356R  
 TITLE: Anti-reflective film for display device, has extremums specified thickness on graph obtained from Fourier transform analysis for X-ray reflectance measurement carried out using copper-K(alpha) ray  
 DERWENT CLASS: A14; A89; P73; P81; S03; V07  
 INVENTOR: BYUN J; BYUN J S; CHANG Y; CHANG Y R; JANG S; JANG S H; KIM B; KIM B K; KIM H; KOO J; KOO J P; LEE J K; OH S; S J; SONG I; SONG I Y; LEE J  
 PATENT ASSIGNEE: (GLDS-C) LG CHEM LTD; (GLDS-C) LG CHEM CO LTD  
 COUNTRY COUNT: 135  
 PATENT INFO ABBR. :

Patent number (/PN)

Patent country (/PC) can be searched separately

Patent kind code (/PK)

Publication date (/PD)

Derwent week (/DW)

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
WO 2017155335	A1	20170914	(201767) *	KO	60[18]	
KR 2017105437	A	20170919	(201767)	KO		
TW 2017041689	A	20171201	(201817)	ZH		
KR 2018084712	A	20180725	(201852)	KO		
TW I627435	B	20180621	(201858)	ZH		
CN 108474870	A	20180831	(201860)	ZH		
EP 3376266	A1	20180919	(201865)	EN		

Number of drawings (/DRWN)

Number of pages (/PGN)

Publication language (/LA)

## Application details: D IBIB – (2)

### APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2017155335	A1	WO 2017-KR2580	20170309
CN 109298470	A Div Ex	CN 2017-80000863	20170309
CN 108474870	A	CN 2017-80005924	20170309
EP 3376266	A1	EP 2017-763596	20170309
EP 3376266	A4	EP 2017-763596	20170309
KR 2017105437	A	KR 2017-29954	20170309
KR 2018112752	A Div Ex	KR 2017-29954	20170309
KR 1907653	B1	KR 2017-29954	20170309
KR 1916944	B1 Div Ex	KR 2017-29954	20170309
KR 2018084712	A Div Ex	KR 2017-29959	20170309
KR 1916943	B1 Div Ex	KR 2017-29959	20170309
TW 2017041689	A	TW 2017-108093	20170309
TW I627435	B	TW 2017-108093	20170309
CN 108474870	A PCT Application	WO 2017-KR2580	20170309
EP 3376266	A1 PCT Application	WO 2017-KR2580	20170309
JP 2018533068	T PCT Application	WO 2017-KR2580	20170309
US 20190025467	A1 PCT Application	WO 2017-KR2580	20170309
CN 109298470	A	CN 2018-11195410	20170309
JP 2018533068	T	JP 2018-518611	20170309
JP 2019015954	A	JP 2018-75365	20180410

Subsections of AI-field can be searched separately (e.g. AD, AC,..)

All data belonging to one document are listed in one line and can be linked using the P-operator.

Application details help to clarify the relationships between family members.

The patent number for the application and the corresponding application number are listed in the same line.

# Unique information in Application Details

...  
APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2017155335	A1	WO 2017-KR2580	201703
CN 109298470	A Div Ex	CN 2017-80000863	2017
CN 108474870	A	CN 2017-80005924	2017
EP 3376266	A1	EP 2017-763596	201703
EP 3376266	A4	EP 2017-763596	201703
KR 2017105437	A	KR 2017-29954	2017030
KR 2018112752	A Div Ex	KR 2017-29954	2017030
KR 1907653	B1	KR 2017-29954	2017030
KR 1916944	B1 Div Ex	KR 2017-29954	2017030
KR 2018084712	A Div Ex	KR 2017-29959	2017030
KR 1916943	B1 Div Ex	KR 2017-29959	2017030
TW 2017041689	A	TW 2017-108093	201703
TW I627435	B	TW 2017-108093	201703
CN 108474870	A PCT Application	WO 2017-KR2580	201703
EP 3376266	A1 PCT Application	WO 2017-KR2580	201703
JP 2018533068	T PCT Application	WO 2017-KR2580	201703
US 20190025467	A1 PCT Application	WO 2017-KR2580	201703
CN 109298470	A	CN 2018-11195410	2017
JP 2018533068	T	JP 2018-518611	201703
JP 2019015954	A	JP 2018-75365	20180410

## APT Application Type

To list application types: E A/APT

Add to	Addition to
Application No	Application Number
CIP of	Continuation-in-part of
Cont of	Continuation of
Derived from	Derived from
Div ex	Division from
Div util	Division from Utility
PCT Application	PCT Application
PCT Nat. Entry	PCT National Phase Entry
Previous Appln	Previous Application
Provisional	Provisional
Related to	Related to
Subst for	Substitution for
Supp Discl	Supplementary disclosure

# A closer look on the division from CN 2017-80000863

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2017155335	A1	WO 2017-KR2580	20170309
<b>CN 109298470</b>	<b>A</b> Div Ex	<b>CN 2017- 80000863</b>	<b>20170309</b>
CN 108474870	A	CN 2017- 80005924	20170309
EP 3376266	A1	EP 2017- 763596	20170309
EP 3376266	A4	EP 2017- 763596	20170309
KR 2017105437	A	KR 2017- 29954	20170309
KR 2018112752	A Div Ex	KR 2017- 29954	20170309
KR 1907653	B1	KR 2017- 29954	20170309
KR 1916944	B1 Div Ex	KR 2017- 29954	20170309
KR 2018084712	A Div Ex	KR 2017- 29959	20170309
KR 1916943	B1 Div Ex	KR 2017- 29959	20170309
TW 2017041689	A	TW 2017- 108093	20170309
TW I627435	B	TW 2017- 108093	20170309
CN 108474870	A PCT Application	WO 2017- KR2580	20170309
EP 3376266	A1 PCT Application	WO 2017- KR2580	20170309
JP 2018533068	T PCT Application	WO 2017- KR2580	20170309
US 20190025467	A1 PCT Application	WO 2017- KR2580	20170309
<b>CN 109298470</b>	<b>A</b>	<b>CN 2018- 11195410</b>	<b>20170309</b>
JP 2018533068	T	JP 2018- 518611	20170309
JP 2019015954	A	JP 2018- 75365	20180410

**CN 109298470**: division from application number CN 2017-80000863.

The new application number of **CN 109298470** is CN 2018-11195410.

# A closer look on the division from CN 2017-80000863

ACCESSION NUMBER: 2017-64356T

...

PATENT NO	KIND	APPLICATION	DATE
WO 2017155335 A1		WO 2017-KR2580	20170309
<b>CN 109298470 A</b>	Div Ex	<b>CN 2017-80000863</b>	20170309
...			
<b>CN 109298470 A</b>		<b>CN 2018-11195410</b>	20170309
...			

ACCESSION NUMBER: 2017-64356R [201767]

...

PATENT NO	KIND	APPLICATION	DATE
WO 2017155337 A1		WO 2017-KR2582	20170309
<b>CN 107635765 A</b>		<b>CN 2017-80000863</b>	20170309
<b>CN 107635765 B</b>		<b>CN 2017-80000863</b>	20170309
EP 3251832 A1		EP 2017-733956	20170309

After the division, the application number CN 2017-80000863 refers to **CN 107635765**.

## Get the overview about the patent family: D IBIB – (3)

...

### FILING DETAILS:

PATENT NO	KIND	PATENT NO
KR 1907653 B1	Previous Publ	KR 2017105437 A
KR 1916944 B1	Previous Publ	KR 2018112752 A
CN 108474870 A	Based on	WO 2017155335 A
EP 3376266 A1	Based on	WO 2017155335 A
JP 2018533068 T	Based on	WO 2017155335 A
KR 1916943 B1	Previous Publ	KR 2018084712 A

PRIORITY APPLN. INFO:		
KR 2017-29954		20170309
KR 2016-30395		20160314
KR 2016-29336		20160311
KR 2016-28468		20160309
KR 2017-29953		20170309
WO 2017-KR2580		20170309

The filing details field contains relationships among patent family members that are not represented in the patent family table, e.g. for divisions, or continuations.

Subsections of FDT- and PRAI-field can be searched separately.

Error corrections allow comprehensive and accurate assemblies of patent families.



## Agenda

- Patent families and priority
  - Derwent World Patents Index
  - **CAplus**
  - INPAFAMDB and INPADOCDB
  - Error corrections
  - Non-convention equivalents
  - Multi-file patent search
- Introduction
  - Common display formats
  - A tour through a record  
+ How to retrieve all members  
of an extended patent family
  - Summary DWPI / CAplus



## A short summary of CPlus

- Patent and non-patent literature from all areas of chemistry and related sciences
- Bibliography of 63 patent authorities
- Journals, conference proceedings, technical reports, books, etc.
- Value added database with indexing by controlled vocabulary
- Concise patent families
- Daily updates
- Produced by Chemical Abstracts Service

# A CAplus sample record

## Common display formats:

- BIB / IBIB (AN, TI, PA, FAN.CNT, **PI**, PRAI, RE.CNT)
- STD / ISTD (+ classifications)
- ALL / IALL (+ indexing)
- MAX / IMAX (+ **FAN and PI for all members of extended patent family**)

content

## Patent family display formats, e.g.:

- FAN (AN, FAN.CNT, FAN)
- FAM (AN, FAN.CNT and PI for all members of extended patent family)
- PATS (SO, PI)
- FBIB (BIB, PI for other all members of extended p.f.)

ACCESSION NUMBER: 2017:1480435 HCAPLUS Full-text  
 DOCUMENT NUMBER: 167:388520  
 TITLE: Anti-reflective film having x-ray reflection specification  
 INVENTOR(S): Byun, Jin Seok; Koo, Ja Pil; Kim, Boo Kyung; Jang, Seok Hoon; Chang, Yeong Rae  
 PATENT ASSIGNEE(S): LG Chem, Ltd., S. Korea  
 SOURCE: PCT Int. Appl., 60pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Korean  
 FAMILY ACC. NUM. COUNT: 3  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2017155335	A1	20170914	WO 2017-KR2580	20170309
KR 2017105437	A	20170919	KR 2017-29954	20170309
KR 1907653	B1	20181012		
CN 108474870	A	20180831	CN 2017-80005924	20170309
EP 3376266	A1	20180919	EP 2017-763596	20170309
JP 2018533068	T	20181108	JP 2018-518611	20170309
CN 109298470	A	20190201	CN 2018-11195410	20170309
KR 2017129669	A	20171127	KR 2017-153333	20171116
KR 1953775	B1	20190305		
KR 2018029014	A	20180319	KR 2018-27502	20180308
KR 1919128	B1	20181115		
KR 2018029015	A	20180319	KR 2018-27503	20180308
KR 1936370	B1	20190108		

# Get the overview about the patent family: D IBIB – (1)

ACCESSION NUMBER: 2017: 1480435 HCAPLUS  
 DOCUMENT NUMBER: 167: 388520  
 TITLE: Anti-reflective film having x-ray reflection specification  
 INVENTOR(S): Byun, Jin Seok; Koo, Ja Pil; Kim, Boo Kyung; Jang, Seok Hoon; Chang, Yeong Rae  
 PATENT ASSIGNEE(S): LG Chem, Ltd., S. Korea  
 SOURCE: PCT Int. Appl., 60pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Korean  
 FAMILY ACC. NUM. COUNT: 3

## PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2017155335	A1	20170914	WO 2017-KR2580	20170309
KR 2017105437	A	20170919	KR 2017-29954	20170309
KR 1907653	B1	20181012		
CN 108474870	A	20180831	CN 2017-80005924	20170309
EP 3376266	A1	20180919	EP 2017-763596	20170309
JP 2018533068	T	20181108	JP 2018-518611	20170309
CN 109298470	A	20190201	CN 2018-11195410	20170309
KR 2017129669	A	20171127	KR 2017-153333	20171116
KR 1953775	B1	20190305		
KR 2018029014	A	20180319	KR 2018-27502	20180308

FAN.CNT lists the number of accession number for the extended patent family.

To **display PI** all records of an extended patent family: **D FAM**

To **retrieve all records** of an extended patent family in one answer set

(1) use the **field FAN** (SELECT or TRANSFER) or

(2) the **FSEARCH** command.

# D FAM directly displays pre-processed family information

=> **D FAM**

L1 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2020 ACS on STN  
 AN 2017:1480435 HCAPLUS Full-text  
 DN 167:388520  
 FAN.CNT 3  
 PI

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2017155335	A1	20170914	WO 2017-KR2580	20170309
			KR 2016-28468	A 20160309
			KR 2016-29336	A 20160311
			KR 2016-30395	A 20160314
			KR 2017-29954	A 20170309
KR 2017105437	A	20170919	KR 2017-29954	20170309
KR 1907653	B1	20181012		
			KR 2016-28468	A 20160309
CN 108474870	A	20180831	CN 2017-80005924	20170309
			KR 2016-28468	A 20160309
			KR 2016-29336	A 20160311
			KR 2016-30395	A 20160314
			WO 2017-KR2580	W 20170309
EP 3376266	A1	20180919	EP 2017-763596	20170309
			KR 2016-28468	A 20160309
			KR 2016-29336	A 20160311

To **display PI** all records of an extended patent family: **D FAM**

To **retrieve all records** of an extended patent family in one answer set

- (1) use the **field FAN** (SELECT or TRANSFER) or
- (2) the **FSEARCH** command.

...

# Get the overview about the patent family: D IBIB – (2)

ACCESSION NUMBER: 2017:1480435 HCAPLUS  
 DOCUMENT NUMBER: 167:388520  
 TITLE: Anti-reflective film having x-ray reflection  
 specific  
 INVENTOR(S): Byun, (L) operator Pil; Kim, Boo Kyung; Jang,  
 Seok Hoon; Chang, Yeong Rae  
 PATENT ASSIGNEE(S): LG Chem, Ltd., S. Korea  
 SOURCE: PCT Int. Appl., 60pp.  
 PIXXD2

DOCUMENT TYPE: (P) operator  
 LANGUAGE: Korean  
 FAMILY ACC. NUM COUNT: 3

## PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2017155335	A1	20170914	WO 2017-KR2580	20170309
KR 2017105437	A	20170919	KR 2017-29954	20170309
KR 1907653	B1	20181012		
CN 108474870	A	20180831	CN 2017-80005924	20170309
EP 3376266	A1	20180919	EP 2017-763596	20170309
JP 2018533068	T	20181108	JP 2018-518611	20170309
CN 109298470	A	20190201	CN 2018-11195410	20170309
KR 2017129669	A	20171127	KR 2017-153333	20171116
KR 1953775	B1	20190305		
KR 2018029014	A	20180319	KR 2018-27502	20180308

Subsections of PI-field can be searched separately, e.g.  
 S WO/PC (L) MAR 2017/AD

The basic patent is listed first, all equivalents sorted according application date.

Patent number for A and B1 documents listed with corresponding application number

## Get the overview about the patent family: D IBIB – (3)

...  
PRIORITY APPLN. INFO. :  
KR 2016- 28468            A    20160309  
KR 2016- 29336            A    20160311  
KR 2016- 30395            A    20160314  
KR 2017- 29954            A    20170309  
CN 2017- 80000863        A3  20170309  
JP 2018- 518611            A3  20170309  
JP 2018- 518713            A3  20170309  
KR 2017- 29959            A    20170309  
WO 2017- KR2580           W    20170309  
KR 2017- 134199           A3  20171016  
KR 2018- 82577            A3  20180716  
KR 2018- 117831           A3  20181002

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S) :        CASREACT 167: 388520

REFERENCE COUNT:        5        THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

Subsections of PRAI-field can be searched separately, e.g.  
S 2016/PRY (P) KR/PRC

Error corrections allow comprehensive and accurate assemblies of patent families.

## DWPI and CAplus patent families

- Both databases define families as documents with priorities in common with a basic patent
- Both databases cross-reference extended families by accession number (DWPI: CR and CAplus: FAN)
- However, DWPI and CAplus do not always use the same basic patent for indexing/abstracting
- CAplus indexes multiple basic patents, which may have slightly different priority information
- CAplus families are also re-assembled to take any new priority relationships into account. Documents can be found in multiple CAplus records



## Agenda

- Patent families and priority
- Derwent World Patents Index
- CAplus
- **INPAFAMDB and INPADOCDB**
- Error corrections
- Non-convention equivalents
- Multi-file patent search

Introduction

Common display formats

A tour through a record

EPO simply family



# INPADOCDB (INternational PATent DOcumentation DataBase)

- Bibliographic and family data of patent documents and utility models
- More than 100 patent-issuing organizations
- Enhanced patent family information on STN: FIZ-Editorial team
  - Quality control and correction process of application and publication numbers
  - Chinese Dual Filings (utility model and patent documents linked in one record)
  - Calculation of expiration date
- INPADOCDB (application based) and INPAFAMDB (family based)
- Database producer is the European Patent Office

A red, rectangular stamp with a distressed, ink-like border. The text "ONLY ON STN!" is written in a bold, sans-serif font, slanted upwards from left to right. The stamp is positioned over the right side of the slide, partially overlapping the text "FIZ-Editorial team".

# INPAFAM display formats

## Common display formats:

- **BIB / IBIB** (AN, TI, PAS, **PI, AI, PRAI**, AB, REC)
- **BRIEF or STD** (AN, TIEN, PAS, **PI, AI, PRAI**, classifications, AB) *DEFAULT*
- **MAX / IMAX** (+ ABS, LS, citation information for each family member)

content

## Patent family display format, e.g.:

- **CFAM** (list of publication numbers)
- **CFAM2** (condensed table: PI, AI and PRAI)
- **FAM** (Table of PRAI, AI and PI connected by AN)
- **FAM2** (Table of PRAI, AI and PI connected by PI)
- **FFAM** (STD + LS for each member)

PATENT FAMILY INFORMATION  
AN 61285328 INPAFAMDB

-----PRAI-----			-----PI-----		
CN 2017-80000863	A	20170309	CN 109298470	A	20190201
KR 2016-28468	A	20160309	CN 107635765	A	20180126
			CN 108027452	A	20180511
			CN 108474870	A	20180831
			CN 107635765	B	20181204
			CN 109298470	A	20190201
			EP 3251832	A1	20171206
			EP 3318903	A1	20180509
			EP 3318903	A4	20180829

⋮

-----AI-----			-----PI-----		
CN 2017-80000863	A	20170309	CN 107635765	A	20180126
			CN 107635765	B	20181204
CN 2017-80003073	A	20170309	CN 108027452	A	20180511
CN 2017-80005924	A	20170309	CN 108474870	A	20180831
CN 2018-11195410	A	20170309	CN 109298470	A	20190201
EP 2017-733956	A	20170309	EP 3251832	A1	20171206
			EP 3251832	A4	20181003
EP 2017-763596	A	20170309	EP 3376266	A1	20180919
			EP 3376266	A4	20190102
EP 2017-763598	A	20170309	EP 3318903	A1	20180509
			EP 3318903	A4	20180829

# Condensed family information in INPAFAMDB: D CFAM2

## PATENT FAMILY INFORMATION

AN 61285328 INPAFAMDB

### +----- Publications -----+

CN 107635765	A	20180126
CN 107635765	B	20181204
CN 108027452	A	20180511
CN 108474870	A	20180831
CN 109298470	A	20190201
EP 3251832	A1	20171206
EP 3251832	A4	20181003
EP 3376266	A1	20180919
EP 3376266	A4	20190102

...

### +----- Priorities -----+

CN 2017- 80000863	A	20170309
KR 2016- 28468	A	20160309
KR 2016- 29336	A	20160311
KR 2016- 30395	A	20160314
KR 2017- 29953	A	20170309
KR 2017- 29954	A	20170309
KR 2017- 29959	A	20170309
WO 2017- KR2580	W	20170309
WO 2017- KR2582	W	20170309

...

13 priorities, 32 applications, 50 publications (7 EPO simple families)

### +----- Applications -----+

CN 2017- 80000863	A	20170309
CN 2017- 80003073	A	20170309
CN 2017- 80005924	A	20170309
CN 2018- 11195410	A	20170309
EP 2017- 733956	A	20170309
EP 2017- 763596	A	20170309

Subsections of PI-field can be searched separately, e.g.

S EP/PC (L) MAR 2017/AD

All data belonging to one document are listed in one line next to the application number and can be linked using the L-operator.

# EPO simple patent family by DISPLAY SFAM

## PATENT FAMILY INFORMATION

AN 61285328 INPAFAMDB

=====  
EPO simple family (SFN): 59789588  
=====

+----- Publications -----+		+----- Applications -----+	
WO 2017155335	A1 20170914	WO 2017-KR2580	W 20170309

+----- Priorities -----+			
KR 2016-28468	A 20160309	(KRA, 20170921, Y)	
KR 2016-29336	A 20160311	(KRA, 20170921, Y)	
KR 2016-30395	A 20160314	(KRA, 20170921, Y)	
KR 2017-29954	A 20170309	(KRA, 20170921, Y)	

=====  
EPO simple family (SFN): 59789628  
=====

+----- Publications -----+		+----- Applications -----+	
WO 2017155337	A1 20170914	WO 2017-KR2582	W 20170309

+----- Priorities -----+			
KR 2016-28468	A 20160309	(KRA, 20170921, Y)	

...

All patent publications claiming the same active priorities establish one **EPO simple family**.

**SFAM:** Condensed patent family tables with EPO simple patent family identifiers as header information to form separate family tables

## Summary Patent Family Definitions

- **Broad definition (Extended patent family definition)**  
Patent publications directly or indirectly linked via priority numbers  
(INPADOCDB/INPAFAMDB)  
(Retrieved in DWPI and CAplus by FSEARCH)
- **Middle definition**  
All patent publications whose priorities are in common with the basic patent  
(DWPI, CAplus)
- **Narrow definition**  
EPO simple family – all patent publications have the same active priorities



## Agenda

- Patent families and priority
- Derwent World Patents Index
- CPlus
- INPAFAMDB and INPADOCDB
- **Error corrections**
- Non-convention equivalents
- Multi-file patent search

## Accurate patent families rely on accurate publication, application and priority numbers

1. ALL three patent family databases apply quality checks and corrections:
  - Derwent World Patents Index
  - CAplus
  - INPADOCDB/INPAFAMDB
2. After checks and corrections, patent families are assembled
3. Errors reported by users are always taken into account

## FIZ Karlsruhe editorial corrections provide more accurate INPADOC patent families

- Quality control and correction process:
  - All numbers which do not meet the standardized number formats are filtered out and corrected manually
  - Plausibility Checks for the entire database
  - >2.200 standards are maintained for quality checks
- Errors reported by users are corrected intellectually
- Error corrections are typically online one week after the error has been detected



# Separate patent families are merged due to priority number corrections of FIZ Karlsruhe Editorial

**US 20190337848**

METHOD FOR PRODUCING CONSTRUCTION AGGREGATE  
FROM FLY ASH AND THE AGGREGATE OBTAINED WITH  
THIS METHOD

**WO 2019195862**

METHOD FOR PRODUCING CONSTRUCTION AGGREGATE  
FROM FLY ASH AND THE AGGREGATE OBTAINED WITH  
THIS METHOD

**Editorial correction**

**VN 0144418 → VN 201801444**

AN 103752811 INPADOCDB

+----- Publications -----+

**US 20190337848** A1 20191107

**WO 2019195862** A1 20191010

+----- Priorities -----+

VN 2018-1444 A 20180405

+----- Applications -----+

US 2019-16377153 A 20190405

WO 2019-VN5 W 20190402

# False patent families are separated due to priority number corrections

ZA201805121B	[Koppert BV] System for releasing beneficial mites...
US2019014759A1	[Koppert BV] System for releasing beneficial mites...
AR107486A1	[West Virginia Univ] METODOS PARA LA PRODUCCION DE ...

Editorial correction: Deletion of priority GB203239970 from all three documents

PATENT FAMILY INFORMATION  
AN 98642306 INPADOCDB

+-----PI-----+

...

US 20190014759	A1 20190117
WO 2017123094	A1 20170720
ZA 2018005121	B 20191030

PATENT FAMILY INFORMATION  
AN 95216679 INPADOCDB

+-----PI-----+

...

AR 107486	A1 20180502
AU 2017214286	A1 20180816
BR 112018015655	A2 20181226
...	



## Agenda

- Patent families and priority
- Derwent World Patents Index
- CPlus
- INPAFAMDB and INPADOCDB
- Error corrections
- Non-convention equivalents
- Multi-file patent search

# Challenges for compiling comprehensive patent families: Reasons for missing or insufficient priority information

- Patents filed outside the Paris Convention
  - Patents filed outside the 12 month priority period
  - Patents filed in countries not part of the Paris Convention (e.g. Taiwan and Burma/Myanmar)
- Patents filed within the Paris Convention published without priority data
  - no family link between national filings
  - no family link between national filings and EP- or PCT-filings
- Patents filed without priority data require additional effort to match family members with the same technical content but no priority relationship

Non-convention equivalents

## Challenges for compiling comprehensive patent families: Reasons for missing or insufficient priority information

Database	Patent authority coverage	Year coverage	How to identify non-convention equivalents
<b>CAplus</b>	63 authorities incl. technical disclosures	Use of T0 kind code began in 2006	T0 kind code in the PRAI field, FBIB display format
<b>Derwent World Patents Index</b>	59 authorities incl. technical disclosures	1969 - present	Hash mark (#) in the PI field*
<b>INPADOC</b>	> 100 authorities	Many years; pre-1968 data is a strength	Priority information type* in the PRAI and PRAIT fields, e.g.: - CAAT <b>Technical priority</b>

## The coverage of non-convention equivalents in DWPI has a long-standing tradition

- DWPI includes > 750,000 records with non-convention equivalents
- Clarivate Analytics systematically looks at national filings of non-residents in a country for which no foreign priority data are available
- Equivalency to an existing DWPI family requires comparisons of:
  - Inventor names, countries of residence, subject matter, drawings, diagrams
- Verification of a match results in the assignment of the non-convention equivalent to an existing DWPI family, identified by hash marks (#)
- Non-convention equivalents are searchable in the patent type field PT:  
US/PC (P) EQUIVALENTNONCONVENTION/PT

=> E A/PT

# DWPI sample record 1: non-convention equivalent

TITLE: Power handling device, has III-nitride cap layer formed on III-nitride channel layer, where III-nitride digital alloy back barrier layer is formed below channel layer and alloy back barrier layer comprises ultra-lattice structure

DERWENT CLASS: L03; M26

INVENTOR: CAO Y; CHU R

PATENT ASSIGNEE: (HRLH-C) HRL LAB LLC

COUNTRY COUNT: 134

## PATENT INFO ABBR. :

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
US 20190067464	A1	20190228	(201919)*	EN	14[6]	
WO 2019040083	A1	20190228	(201919)#	EN		

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 20190067464	A1	US 2017-15687369	20170825
WO 2019040083	A1	WO 2017-US48753	20170825

PRIORITY APPLN. INFO:	US	2017-15687369	20170825
	WO	2017-US48753	20170825

- PCT application filed in US on same day as US application.
- Missing priority link (two records in other databases).
- Both applications have the same title, the same inventors, and the same patent assignee

## DWPI sample record 2: Chinese dual filings

**Chinese dual filings:** Utility model and patent documents linked in one record.

AN 2019-00742A

TI Planar array shearing force tactile sensor, has piezoelectric polymers connected with external charge amplifier, where surface of upper substrate, surface of lower substrate and piezoelectric polymers are coated with conductive material

PI CN 109060200 A 20181221 (201913)\* ZH 9[6]  
CN 208780370 U 20190423 (201934)# ZH

PRAI CN 2018-11283702 20181031  
CN 2018-21778140U 20181031

Utility model is a non-convention equivalent (#)

Patent and utility model are filed at the same day. Application number of utility model added to PRAI.



## CAplus sample record 1: Applications published without priority information

AN 2019:2174706 HCAPLUS Full-text  
 DN 171:555243  
 TI Hydrogen molecule remixing device of dish-shaped electrolytic cell  
 IN Shyu, Wen-Shing  
 PA Taiwan  
 SO Eur. Pat. Appl., 28pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 FAN.CNT 1  
 PI

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 3569738	A1	20191120	EP 2018- 173312	20180518
US 20190352788	A1	20191121	US 2018- 15980844	20180516
IN 201831022191	A	20191220	IN 2018- 31022191	20180613
PRAI EP 2018- 173312	T0	20180518		

Kind code T0 in the PRAI field indicates the presence of a non-convention equivalent.  
 Also listed by display format FBIB.

## CAplus sample record 2: Chinese dual filings now linked

AN 2019:2371626 HCAPLUS Full-text  
 DN 172:123398  
 TI Electrolytic polar plate stripping device with not easy damaged plate  
 IN Li, Xiaodan  
 PA Jiangsu Danyuan Environmental Protection Technology Co., Ltd., Peop. Rep. China  
 SO Faming Zhuanli Shenqing, 7pp.  
 CODEN: CNXXEV  
 DT Patent  
 LA Chinese  
 FAN. CNT 1  
 PI

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	---	-----	-----	-----
CN 110565122	A	20191213	CN 2019-10948934	20191008
CN 210012912	U	20200204	CN 2019-21668549	20191008
			CN 2019-10948934	T0 20191008

Patent application and utility model filed on the same day and for the same invention

FBIB display format: T0 indicates the presence of a non-convention equivalent.

Kind code T0 also in the PRAI field (e.g. by BIB display format)

## INPADOCDB/INPAFAMDB: Chinese Dual Filings

- Since 2009, it has been possible to file a patent and a utility model in China at the same day for the same invention
- Due to **missing priority relationships** dual filings most often ended up in different patent families

### Example: Patent Family of CN dual filings in INPADOC on STN

(CN A: Wang Jun, Movable folding stereoscopic parking lot)

Publication Information	Application Information	Priority Information
CN105201247 A 20151230	CN2015-10450717 20150728	CN2015-10450717 20150728 CN2015-20554503 20150728
CN204754359 U 20151111	CN2015-20554503 20150728	CN2015-20554503 20150728

The priority number in blue is a technical priority added to the CN A publication, thus bringing CN105201247 A and CN204754359 U into the same family.



## Agenda

- Patent families and priority
- Derwent World Patents Index
- CPlus
- INPAFAMDB and INPADOCDB
- Error corrections
- Non-convention equivalents
- Multi-file patent search

# A comprehensive patent family search for WO 2015017768

=> **FIL INPAFAMDB**  
=> **S WO 2015017768/PN**

L1                    1 WO 2015017768/PN

=> **D CFAM2 FFAM**

...

=> **FIL HCAPLUS**  
=> **S WO 2015017768/PN**

L2                    1 WO 2015017768/PN

=> **D FAM**

...

=> **FIL WPINDEX**  
=> **FSEARCH WO 2015017768/PN**

L5                    5 FS0 L4

=> **D IBIB**

...

## INPAFAMDB

Patent number search with **SEARCH**

## HCAPLUS

Patent number search with **SEARCH** and display extended patent families with D FAM

## WPINDEX

Patent number search with **FSEARCH** or SELECT/TRANSFER of CR-field (see before)

Alternatively, perform FSEARCH for the patent number in a multi-file environment.

Patent family:

WO 2015017768

SLIDE 1

DWPI	CAplus	INPAFAMDB
		AP 2015008934 A0
AU 2014296072 B2	AU 2014296072 B2	AU 2014296072 B2
AU 2016202542 A1	AU 2016202542 A1	AU 2016202542 A1
BR 112016002255 A2		
CA 2916985 A1	CA 2916985 A1	CA 2916985 A1
CA 2916985 C	CA 2916985 C	CA 2916985 C
		CL 2016000158 A1
CN 105431128 A	CN 105431128 A	CN 105431128 A
	CR 20160053 A	CR 2016000053 A
		CU 2016000017 A7
		CU 24449 B1
		CY 1119456 T1
DE 202014010627 U1	DE 202014010627 U1	DE 202014010627 U1
		DK 3001809 T3
		DO 2016000030 A
		EA 2015092291 A1
EP 3001809 A1	EP 3001809 A1	EP 3001809 A1
EP 3001809 B1	EP 3001809 B1	EP 3001809 B1
EP 3326606 A1	EP 3326606 A1	EP 3326606 A1
ES 2639727 T3	ES 2639727 T3	ES 2639727 T3
GB 2530455 A	GB 2530455 A	GB 2530455 A
GB 2530455 B	GB 2530455 B	GB 2530455 B
GB 2533883 A	GB 2533883 A	GB 2533883 A
GB 2533883 B	GB 2533883 B	GB 2533883 B
GB 2541137 A	GB 2541137 A	GB 2541137 A
GB 2541137 B	GB 2541137 B	GB 2541137 B
GE 2018006869 B		GE 2018006869 B
		GT 2016000023 A
HK 1222321 A0		HK 1222321 A1

# Patent family: WO 2015017768

SLIDE 2

DWPI		CAplus		INPAFAMDB	
HK 1230472	A1	HK 1230472	A1		
HK 1233511	A1	HK 1233511	A1		
				HR 2017001408	T1
				HU E034751	T2
ID 2017004835	A				
IL 243748	A1	IL 243748	A	IL 243748	A
IN 201647007019	A	IN 201647007019	A		
IN 201948039244	A	IN 201948039244	A		
IN 321913	B	IN 321913	A1		
JP 2016523844	T	JP 2016523844	T	JP 2016523844	A
JP 6286030	B2	JP 6286030	B2	JP 6286030B	B2
KR 1781991	B1	KR 1781991	B1	KR 1781991	B1
KR 2016046794	A	KR 2016046794	A	KR 2016046794	A
				LT 3001809	T
				MA 38750	A1
				MA 38750	B1
MD 1186	U				
MD 2016000010	A2	MD 20160010	A2	MD 2016000010	A2
MD 2016000010	U				
MD 4587	B1	MD 4587	B1	MD 4587	B1
MD 4587	C1	MD 4587	C1	MD 4587	C1
				ME 2869	B
MX 2016001176	A1	MX 2016001176	A	MX 2016001176	A
MX 352669	B			MX 352669	B
NZ 715539	A	NZ 715539	A	NZ 715539	A
				PE 2016000214	A1
PH 12016500132	A1			PH 12016500132	A1

# Patent family: WO 2015017768

SLIDE 3

DWPI	CAplus	INPAFAMDB
		RS 56378 B1
SG 11201600752 A1		SG 11201600752 A
SG 11201600752 B		
		SI 3001809 T1
		TN 2015000571 A1
		UA 116148 C2
US 20150034117 A1	US 20150034117 A1	US 20150034117 A1
US 20150034119 A1	US 20150034119 A1	US 20150034119 A1
US 20150037270 A1	US 20150037270 A1	US 20150037270 A1
US 20150037271 A1	US 20150037271 A1	US 20150037271 A1
US 20150290101 A1	US 20150290101 A1	US 20150290101 A1
US 20160081899 A1	US 20160081899 A1	US 20160081899 A1
US 20160193129 A1	US 20160193129 A1	US 20160193129 A1
US 20160263003 A1	US 20160263003 A1	US 20160263003 A1
US 20180117367 A1	US 20180117367 A1	US 20180117367 A1
US 9095518 B2	US 9095518 B2	US 9095518 B2
US 9144537 B1	US 9144537 B2	US 9144537 B1
US 9855447 B2	US 9855447 B2	US 9855447 B2
VN 47870 A		
WO 2015017768 A1	WO 2015017768 A1	WO 2015017768 A1
ZA 2015009357 A	ZA 2015009357 A	ZA 2015009357 B



# 1 Search tip: Retrieve ONE list with patent numbers

```
=> FIL INPAFAMDB
=> S WO 2015017768/PN
L1          1 WO 2015017768/PN
```

**INPAFAMDB**

PI of extended patent family information in L1

```
=> FIL HCAPLUS
=> S WO 2015017768/PN
L2          1 WO 2015017768/PN
=> SEL L2 1- FAN
E1 THROUGH E5 ASSIGNED
=> S E1-5/AN
L3          5
```

**HCAPLUS**

SEL/TRA or FSEARCH to retrieve all family members

```
=> FIL WPINDEX
=> FSEARCH WO 2015017768/PN
L7          5 FSO L6
```

**WPINDEX**

SEL/TRA or FSEARCH to retrieve all family members

# 1 Search tip: Retrieve ONE list with patent numbers

```
L1      1 WO 2015017768/PN
L3      5
L7      5 FSO L6
```

```
L1 INPAFAMDB
L3 HCAPLUS
L7 WPINDEX
```

```
=> DUP IDE L1 L3 L7
L8      11 DUP IDE L1 L3 L7
```

**DUPLICATE IDENTIFY (DUP IDE)** is used to create a single multi-file L-number in preferred file order.

```
=> SET SMARTSELECT ON
```

```
=> SEL L8 1- PNK
L9      SEL L8 1- PNK :      98 TERMS
```

**SELECT** patent numbers with kind codes from all three databases.  
**DISPLAY** provides information, incl. frequency

```
=> D L9 1-
```

TERM #	# OCC	# DOC	% DOC	PNK
1	7	7	63.64	AU2016202542 A1/PNK
2	7	7	63.64	US20150034117 A1/PNK
3	7	7	63.64	US20150290101 A1/PNK
4	7	7	63.64	US20160081899 A1/PNK
5	7	7	63.64	US20180117367 A1/PNK
6	7	7	63.64	US9095518 B2/PNK
7	7	7	63.64	US9855447 B2/PNK
8	7	7	63.64	WO2015017768 A1/PNK

...

## 2 Search tip: Make advantage of invention-based patent family definitions

1

WPINDEX

Use the Derwent patent families as basis

PATENT FAMILY 2

PATENT FAMILY 3

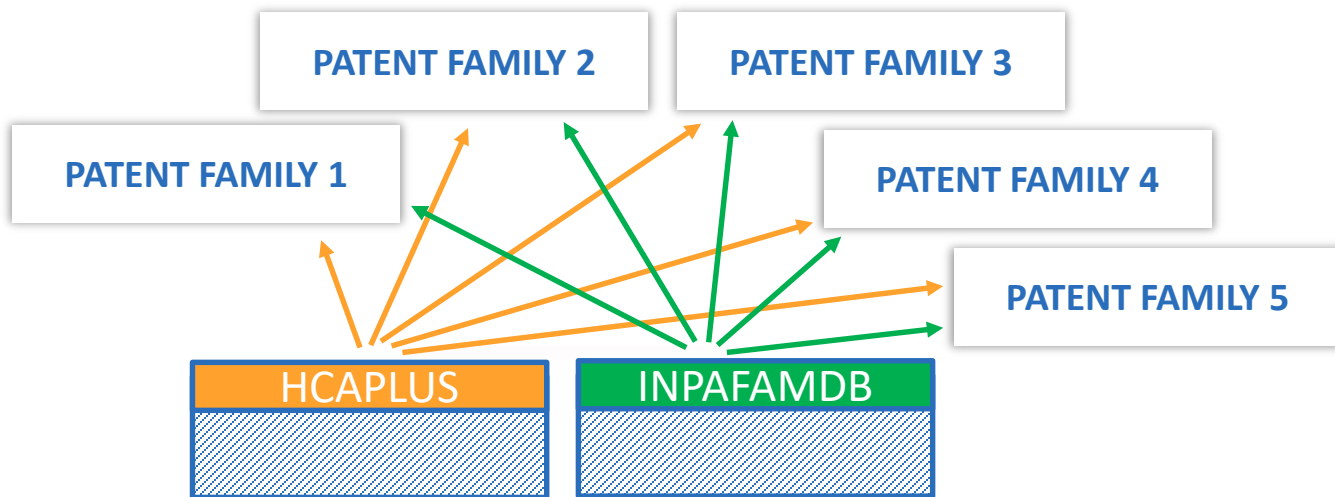
PATENT FAMILY 1

PATENT FAMILY 4

PATENT FAMILY 5

## 2 Search tip: Make advantage of invention-based patent family definitions

- 1** **WPINDEX**  
Use the Derwent patent families as basis
- 2** **HCAPLUS & INPAFAMDB**  
Identify unique hits from HCAPLUS and INPAFAMDB and assign to the Derwent patent families according priority information

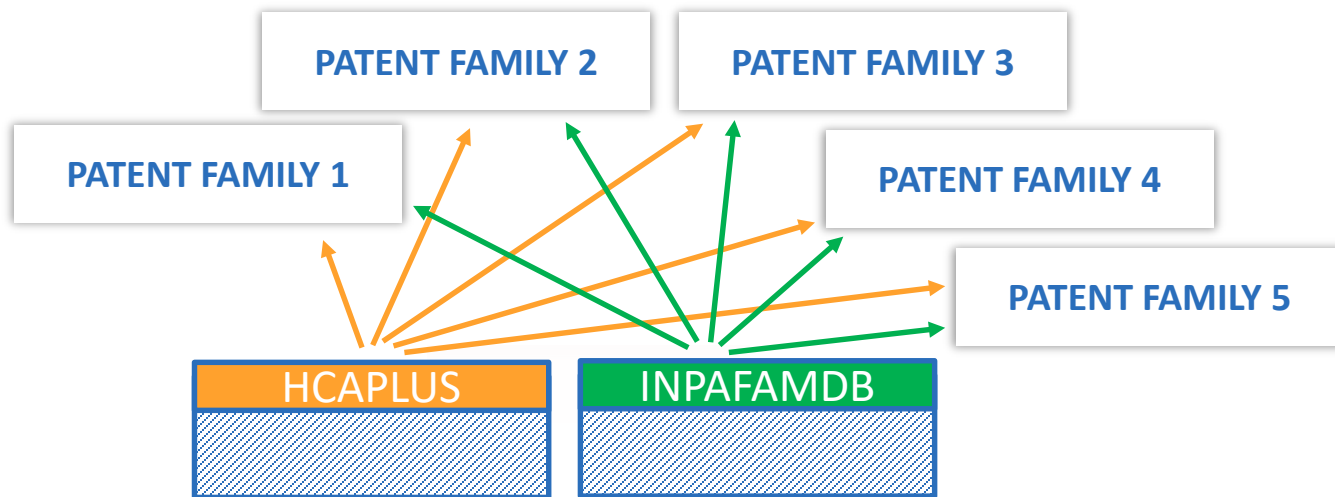


## 2 Search tip: Make advantage of invention-based patent family definitions

1 **WPINDEX**  
Use the Derwent patent families as basis

2 **HCAPLUS & INPAFAMDB**  
Identify unique hits from HCAPLUS and INPAFAMDB and assign to the Derwent patent families according priority information

3 **WPINDEX**  
Display value-added information from DWPI for each patent family



TI Hair treatment e.g. coloring of hair, highlighting of hair, permanent hair waving, hair curling and hair straightening, involves applying composition comprising binding agent to hair

AB WO 2015017768 A1 UPAB: 20150311  
NOVELTY - Treatment of hair involves applying a composition comprising a binding agent (I) to hair....

# Comprehensive patent family information requires all three family files on STN

- Each database is unique with respect to
  - Patent authority coverage
  - Document type coverage
  - Historical coverage
  - Subject coverage
  - Timeliness depending on publication authority
- Each database producer has its quality checks & corrections
- INPAFAMDB has an extensive patent authority coverage
- DWPI has a good coverage of “non-convention equivalents”
- Use small family definitions from DWPI and CPlus for the analysis of inventions



## For more information ...

CAS

[help@cas.org](mailto:help@cas.org)

Support:

[www.cas.org](http://www.cas.org)

FIZ Karlsruhe

[helpdesk@fiz-karlsruhe.de](mailto:helpdesk@fiz-karlsruhe.de)

Support:

[www.stn-international.de](http://www.stn-international.de)