

Examples of
patent infringement risk search
case studies
(based on the mock exams)



Qualified Patent Information Professional



Table of Contents

The general advice for all candidates.....	3
Case study 1.....	3
Case study 2.....	3
Case study 1 – Sample answer	4
Case study 2 – Sample answer	4

Please note: it is to be understood that the sample answers provided in this document are intended to serve as a guide and by no means represent definitive answers. It is entirely possible that additional answers not specifically disclosed in this document could be considered as satisfactory answers.



The general advice for all candidates

This paper is a test of the candidates search skills so most marks will be awarded for the planning of and actual carrying out of the search with only limited emphasis on the final selection of relevant documents.

In order to demonstrate detailed knowledge of search processes candidates are expected to:

- Discuss their understanding of the actual request (including any points that in a real situation might have needed further clarification);
- Plan out suitable search strategies - explaining which concepts should be searched on in which sources and any additional tools that might be useful;
- Conduct a (number of) suitable "online" searching - discussing in detail the reason for selecting specific "terms" and search logic;
- Knowledge of unused search techniques can also be demonstrated by discussing why these are not appropriate for a specific search request;
- Select potentially interesting documents from a list of results
- Demonstrate knowledge of structure of patents and coding systems.

Case study 1

Your company is proposing to relaunch its wood preservative coating product with a reformulated composition. It is intended to roll-out this change across all its existing markets - Germany, France, Austria, Japan and China. The first relaunch date is due in 6 weeks time. The current product is an acrylic composition comprising, an acrylic component selected from acrylic resins and precursors thereof. It is proposed to improve the protection of wood against colour changes caused by sunlight damage by the incorporation of a nano particulate metal oxide UV absorber, being either Zinc and/or Titanium oxide.

Case study 2

A client contacts you regarding a new project for developing an optical rain sensor with Fresnel lens structure which controls a windscreen wiper system.

He informs you that he wants to sell this product to car manufacturers in the US and Germany. The client does not want to infringe patents of third parties.



Case study 1 – Sample answer

Your company is proposing to relaunch its wood preservative coating product with a reformulated composition. It is intended to roll-out this change across all its existing markets - Germany, France, Austria, Japan and China. The first relaunch date is due in 6 weeks time. The current product is an acrylic composition comprising, an acrylic component selected from acrylic resins and precursors thereof. It is proposed to improve the protection of wood against colour changes caused by sunlight damage by the incorporation of a nano particulate metal oxide UV absorber, being either Zinc and/or Titanium oxide.

Introduction

The following text suggests one way of answering Case study 1. This is not the perfect answer. Rather this is one way that a searcher with no real experience of this technical area might carry out this search. Any known prior art (e.g. from the opposition part of the EPO file wrapper) has not been considered in this case. However, use of personal experience in searching and knowledge of chemistry nomenclature as well as search expertise have been capitalized on. This answer combines the 3 elements that a good candidate should have demonstrated – planning and understanding the search, search techniques and detailed explanations of all the thinking behind every part of the search.

General Preparation

Understanding the request:

Freedom to operate search requested to look for any pending or in-force patents in Germany, France, Austria, Japan and China covering aspects of the product we want to launch. As we already have something on the market that is similar – acrylic resin wood preservative – the bulk of my search would concentrate on the use of the nano particles (particularly zinc and titanium oxide) as sun filters in wood preservatives filed in the last 21 years that are either still pending or granted.

Would probably ask the requester any companies particularly active in the field and what specific acrylate polymers were used.

Databases searched:

Derwent World Patent Index – would look for terms in claims/title abstract and use any relevant IPC/ECLA/US/Japanese classes/ manual codes and Derwent chemical registry numbers Chemical Abstracts – as it is a chemical search using the same terms as above and (non-Derwent specific) codes plus CAS registry numbers.

Limiting the results to patent documents

Full text files – either through STN or Patbase I would search claims/title abstract for the terms of interest. I would also use German and French terms in the full text files. Time permitting; I may also carry out a non-Latin search within Patbase. If I had a trade name I would also look for those in the full text as it is unlikely the claims would specify this.

Limitations:

Firstly I would limit to patent databases or patents by country code where other literature is included in the databases (e.g. chemical abstracts).

As the claims are the legal binding part of the patent and we are fundamentally looking for



third party patents that may claim part of the product, I would limit any keyword searches to title, claims, abstract and indexing.

As patents in this area are unlikely to be pending for the countries of interest beyond the 20 years from filing, I would limit my search to patents published in the last 20 years. I could also limit to application date or priority date, but I choose publication date just to limit multiple priorities giving too many extra results.

I would also further limit the search to the countries of interest as publication, application or priority country: DE, FR AT JP and CN adding also WO and EP to ensure any with the designated states would be picked up. I would also check with the attorney where the product was being manufactured and if not on the list also add this to the countries searched

After carrying out the search, and analysing the claims of any pending or granted patents for relevance, I would review the legal status for each patent individualised to ensure it was either in force, still pending or if recently lapsed (in case if re-instatement).

Approach:

After reviewing the request I would identify key concepts that need searching and find synonyms and classes, by searching in internet thesaurus/ quick and dirty search in Patbase or espacenet for key concepts to find classes i.e. by looking at the best results and looking at meanings of classifications. I would use any classes that were relevant (including US classes as even though I am not interested in the US, there may be a US family member).

Concept

Concept 1 (metal oxides):

Concept 2 (nanoparticles) Concept 3 (wood preservative):

Concept 4 (sunscreen):

Concept 5 (acrylic)

Country limitation: CN AT DE EP WO JP

Initial Patbase strategy to find relevant codes/classes/keywords – would limit to just title and abstract, review titles for relevance and using classification explorer check the IPC Japanese, US and European classes codes for any relevant hits and epb claims for any French or German terms. I would not make any limitation on country/time initially:

TA=((ACRYLIC OR ACRYLATE ROR POLYACRYLIC OR POLYACRYLATE) AND WOOD* AND (PRESERV*) and (TITANIUM OR TIO2 OR ZINC OR ZNO2)) 16 results Best results found :

CN101967327: C09D133/00

US4988576 (US only so not of interest to report): **B27K3/00, 428/541**

Then

(TA=(ACRYLIC OR ACRYLATE OR POLYACRYLIC OR POLYACRYLATE) or SC=C09D133) AND (ta=(timber or WOOD* or bois or haut) or SC=(B27K3/00 or 428/541)) AND ta=(((TITANIUM or ti or zinc or zn) w4 (oxide or o2)) OR TIO2 OR ZNO) AND ta=(LIGHT OR SUNLIGHT OR SUNSCREEN~ OR UV)

CA2545638A (no other equivalents so no good as result) – ecla

C01G9/00: Compounds of zinc

C01G9/02: . Oxides; Hydroxides



C01G23/00: Compounds of titanium
 C01G23/04: . Oxides; Hydroxides
 M01P4/64: . . Nanometer sized, i.e. from 1-100 nanometer
 B82Y30/00: Nano-technology for materials or surface science, e.g. nano-composites

DE3918980 (too old to be in force but classifications):

C08K3/00: Use of inorganic ingredients
 C08K3/20: . . Oxides; Hydroxides
 C08K3/22: . . . of metals
 B27K5/02: . Staining or dyeing wood; Bleaching wood

To find Japanese terms:

(TA=(ACRYLIC OR ACRYLATE OR POLYACRYLIC OR POLYACRYLATE) or SC=C09D133) AND (ta=(timber or WOOD* or bois or haut) or SC=(B27K3/00 or 428/541)) AND ta=(((TITANIUM or ti or zinc or zn) w4 (oxide or o2)) OR TIO2 OR ZNO) AND cc=jp

From JP2001247854A

2B230/BA01: . Timber (e.g., raw wood, living trees, and the like)
 2B230/CA03: . inorganic agents to be injected : Zinc
 2B230/CA15: . Silicon and titanium
 4J002/BG: POLYMERS AND COPOLYMERS OF UNSATURATED MONOCARBOXYLIC ACID AND DERIVATIVES THEREOF
 4J038/PC06: . Wood

I would then put these in a table of concepts

Concept	keywords	classes	Other
Concept 1 (metal oxides):	ZnO zinc oxide Zn oxide titanium dioxide ti dioxide ti oxide titanium oxide TiO TiO2 Ti2O 3	C01G23/047 . . Titanium dioxide C08K3/22 ...Oxides of metals B27K3/22 Compounds of zinc or copper C01G9/02 Compounds of zinc Oxides; Hydroxides C01G23/047 Compounds of titanium Titanium dioxide 2B230/CA03: . Zinc 4G047/AA02: . . Zinc compounds consisting of Zn and O, or H additionally	1314-13-2 Or 51745-87-0 or 13463-67-7 titanium oxide/cn Zinc oxide/cn



<p>Concept 2 (nanoparticles)</p>	<p>nano nanoparticl e nanoscale nanosize nanostructur e nanocrystal nm nanometre nanometer ultrafine ultra(w)fine</p>	<p>L27K3 Impregnating wood, e.g. impregnation pre-treatment, for example puncturing; Wood impregnation aids not directly involved in the impregnation process L27K3/00N: employing compositions comprising nanoparticles C09D7/12N1 characterised by a particle size lower than 100 nm] B82Y30 Nano-technology for materials or surface science, e.g. nano-composites [N1012] 4G065/EA03: . Grain size and diameter</p>	
<p>Concept 3 (wood preservative):</p>	<p>Wood Preservative , preserving Treating, treatment Protection/ protection preventing/ prevention Holz Timber bois</p>	<p>428/541 Wood timber product (e.g., piling, post, veneer, etc.) B27K3/00: Impregnating wood B05D7/06Processes, other than flocking, specially adapted for applying liquids or other fluent materials to particular surfaces or for applying particular liquids or other fluent materials to wood B27K3 . Impregnating wood B27K3/16 . Inorganic impregnating agents B27K3/52 . Impregnating agents containing mixtures of inorganic and organic compounds 2B230/BA00: OBJECTS TO BE CHEMICALLY AND PHYSICALLY TREATED 2B230/BA01: . Timber (e.g., raw wood, living trees, and the like) 4J038/PC06: . . Wood</p>	
<p>Concept 4 (sunscreen):</p>	<p>Ultraviolet Uv/ uva/ uvb light Sunlight Absorbing Absorption/ absorbing Stabilising Photostabili sing/ phtostabilis</p>	<p>C09D0007-12D4A/EPC 4D075/CA32: . . Weather resistance 2B230/AA12: . . Prevention of discoloration and fading</p>	



	ation Filter Sunscreen		
Concept 5 (acrylic)	acrylic acrylate polyacrylic polyacrylate	C09D133/00: Coating compositions based on homopolymers or copolymers of compounds having one or more unsaturated aliphatic radicals, each having only one carbon-to-carbon double bond, and at least one being terminated by only one carboxyl radical, or of salts, anhydrides, esters, amides, imides, or nitriles thereof; Coating compositions based on derivatives of such polymers L05D502/00 Acrylic polymers 4D075/EB22 Polyacrylic (polymethacrylic) acid or dielectric	Registry numbers for acrylic polymers polyacrylic/pct as no specific acrylates mentioned polyacrylic/PCT Acrylic polymers/ct
Country	DE or FR or AT or CN or JP or ep or wo		Priority country and publication country

Once I had done that I would start building up a search strategy in Patbase looking specifically at the claims, title, abstract and limiting by earliest publication date being greater than 1991 (so 20 years ago) and country to limit the number of results

Patbase strategy

1	TA=((ACRYLIC OR ACRYLATE OR POLYACRYLIC OR POLYACRYLATE) AND WOOD* AND (PRESERV*) and (TITANIUM OR TIO2 OR ZINC OR ZNO2))	17	Initial searches to get Classifications
---	--	----	---



2	(TAC=(ACRYLIC OR ACRYLATE OR POLYACRYLIC OR POLYACRYLATE) or sc=C09D133) AND (tac=(timber or WOOD* or bois or haut) or sc=(B27K3/00 or 428/541)) AND tac=(((TITANIUM or ti or zinc or zn) w4 (oxide or o2)) OR TIO2 OR ZNO) AND tac=(LIGHT OR SUNLIGHT OR SUNSCREEN~ OR UV)	316	Initial searches to get Classifications
3	(TA=(ACRYLIC OR ACRYLATE OR POLYACRYLIC OR POLYACRYLATE) or sc=C09D133) AND (ta=(timber or WOOD* or bois or holz) or sc=(B27K3/00 or 428/541)) AND ta=(((TITANIUM or ti or zinc or zn) w4 (oxide or o2)) OR TIO2 OR ZNO) AND ta=(LIGHT OR SUNLIGHT OR SUNSCREEN~ OR UV)	28	Initial searches to get Classifications
4	(TA=(ACRYLIC OR ACRYLATE OR POLYACRYLIC OR POLYACRYLATE) or sc=C09D133) AND (ta=(timber or WOOD* or bois or holz) or sc=(B27K3/00 or 428/541)) AND ta=(((TITANIUM or ti or zinc or zn) w4 (oxide or o2)) OR TIO2 OR ZNO) AND cc=jp	39	Initial searches to get Classifications
5	(TAC=(ZnO or tio or tio2 or ((titanium or ti or zinc or zn or zink) W4 (oxide~ Or monoxide~ or dioxide))) or sc=(C01G23/047 or B27K3/22 or C01G9/02 or C01G23/047 or 2B230/CA03 or 4G047/AA02)) AND EPD>1990 and (cc=(DE or FR or AT or CN or JP or ep or wo) OR PRC=(DE or FR or AT or CN or JP or ep or wo))	98032	<p>Concept 1</p> <p>TAC – searches the title, abstracts and claims of PatBase families</p> <p>SC looks for any code ipc/ecla/ftems</p> <p>FI terms and US codes</p> <p>EPD – earliest publication date.</p> <p>So here EPD must be greater than (more recent than) 1990</p> <p>PRC – priority country</p> <p>Searching for EP and WO to allow for designated states</p> <p>Normally I would do this restriction at a later search statement but due to the amount of hits for each term, I have limited now.</p>
6	(Tac=(nano or nanopartic* or nanoscal* or nanosize~ or nanostructur~ or nanocrystal~ or nm or nanomete~ Or nanometer~ or ultrafine~) or sc=(L27K3/00N or C09D7/12N1 or b82y30 or M01P4/64 or 4G065/EA03)) AND EPD>1990 and (cc=(DE or FR or AT or CN or JP or ep or wo) OR PRC=(DE or FR or AT or CN or JP or ep or wo))	more than 100,000	Concept 2



	wo))		
7	(tac=((wood~ or wooden or timber~ or holz or bois) W4 (preserv~ or treat~ or protect~ or coat~)) or sc=(428/541 or B27K3/00 or B05D7/06 or B27K3 or B27K3/52 or B27K3/16 or 2B230/BA01 or 4J038/PC06)) AND EPD>1990 and (cc=(DE or FR or AT or CN or JP or ep or wo) OR PRC=(DE or FR or AT or CN or JP or ep or wo))	11128	concept 3
8	(TAC=((UV~ OR LIGHT OR ULTRAVIOLET OR SUNLIGHT) W10 (PROTECT~ OR SCREEN~ OR absorp~ Or absorb~ Or stablis~ Or stabiliz~ Or filter~)) Or photostabilis~ Or photostabiliz~) OR SC=(C09D0007- 12D4A OR 4D075/CA32 OR 2B230/AA12)) AND EPD>1990 and (cc=(DE or FR or AT or CN or JP or ep or wo) OR PRC=(DE or FR or AT or CN or JP or ep or wo))	more than 100,000	Concept 4
9	(TAC=(ACRYLIC~ OR ACRYLATE~ OR POLYACRYLIC~ OR POLYACRYLATE~) or sc=(C09D133 or L05D502/00 or 4D075/EB22)) and epd>1990 and (cc=(DE or FR or AT or CN or JP or ep or wo) OR PRC=(DE or FR or AT or CN or JP or ep or wo))	more than 100,000	Concept 5
10	SC=(L27K3/00N) AND EPD>1990 and (cc=(DE or FR or AT or CN or JP or ep or wo) OR PRC=(DE or FR or AT or CN or JP or ep or wo))	10	Review all impregnating wood using nanoparticles
11	SC=(b27K3/52 or B27K3/16) AND EPD>1990 and (cc=(DE or FR or AT or CN or JP or ep or wo) OR PRC=(DE or FR or AT or CN or JP or ep or wo))	1001	
12	6 AND 7 AND (5 OR TAC=(METAL W4 OXIDE))	148	
13	5 AND 7 AND 8 AND 9	42	Review all Acrylic + UV absorb + TI/ZN + wood
14	12 and (9 or 8 or 11)	77	Review all nano metal in wood + acrylic or impregnation of wood or uv absorber)
15	6 and 7 and 8 and 9	51	Nano + wood + UV protection + acrylic

For STN searching, I would not use truncation for plurals as I would set up plurals and spelling variations set on permanent save so this would automatically be covered.



I would use truncation where variations in words are used – e.g. preserv? – To covering preserving, preservation etc. In Patbase I would favour the “~” as this covers this kind of truncation

As I would cover the full text in Patbase, I would not look at the full text files again in STN. I would set plurals and spellings on in each file

STN strategy

	Command	Results	explanation
	b reg		Entering registry file
L1	s titanium oxide/cn or titanium dioxide/cn or zinc oxide/cn or 1314-13-2 or 51745-87-0 or 13463-67-7	3	Look for registry numbers in registry file – generally look as Chemical name and any registry numbers found through Wikipedia just in case the registry numbers are invalid.
L2	s polyacrylic/pct	442666	Looking at a general polymer class in registry
	b hcaplus		Change file to Chemical abstracts
	SET ABB on perm; SET PLU on perm; SET SPELLINGS ON perm		To set the spellings, abbreviations and plurals on permanently
	set range=1991-		Set range to include documents added to the file after 1991 – although a rough guide this is a database efficient way of reducing the records.
L3	s l1 or (ZnO or tio or tio2 or ((titanium or ti or zinc or zn)(2t)(oxide? Or monoxide? or dioxide))) or (C01G0023-047 or B27K0003-22 or C01G0009-02 or C01G0023-047)/ecla,fcl,ipc,ic or (2B230/CA03 or 4G047/AA02)/fterm	457461	Concept 1 - Cross file registry numbers (thus picking up any deleted ones) and adding any words and classes to pick up records where the registry numbers were not assigned “T” operator used for chemical name to ensure it is in same word or within 2 words
L4	s nano or nanopartic? or nanoscal? or nanosize? or nanostructur? or nanocrystal? or nm or nanometre? Or nanometer? or ultrafine or (ultra(w)fine) or (L27K0003- 00N or C09D0007-12N1 or b82y0030 or M01P0004-	1246870	Concept 2 – mixture of words and classes



	64)/ecla,fcl,ipc,ico or 4G065/EA03/fterm		
L5	s ((wood? or wooden or timber?)(4a)(preserv? or treat? or protect? or coat?)) or 428/541/ncl or (B27K0003 or B05D0007-06 or B27K0003-52 or B27K0003-16)/ecla,fcl,ipc,ico or (2B230/BA01 or 4J038/PC06)/fterm	21233	Concept 3 – mixture of words and classes
L6	s (((UV or UVa or uvb OR LIGHT OR ULTRAVIOLET OR SUNLIGHT)(5a)(PROTECT? OR SCREEN? OR absorp? Or absorb? Or stabli? Or filter?)) Or photostabili?) OR (C09D0007-12D4A)/ecla OR (4D075/CA32 OR 2B230/AA12)/fterm	159859	Concept 4 – mixture of words and classes The light and UV are used in proximity to ensure that it is a protection from UV as a concept and not cured by UV
L7	s l2 or (acrylic? or acrylate? or polyacrylate? Or polyacrylic?) or (C09D0133 or L05D0502)/ipc,ecla,fcl,ico or 4D075/EB22/fterm	634656	Concept 5 – Cross file registry numbers (thus picking up any deleted ones) and adding any words and classes to pick up records where the registry numbers were not assigned
L8	s L27K0003-00N/ico	16	Specific ICO for the records having impregnation of wood with nanoparticles
L9	s (b27K0003-52 or B27K0003-16)/ipc,ecla,fcl	1145	Classes for impregnating wood with inorganics
L10	s l3-l9 and (ep or wo or cn or at or de or fr or cn)/pc,prc	350057	All of the above statements “or”ed together and limited by the countries of interest (ds not included as EP and WO are used as county codes) Also limits to patent documents



			only
L11	s l10 and l3 and l4 and l5	124	Combining metal oxides and nano particles with wood preservatives
L12	s l10 and l8	15	Specific \ICO for nano particles in wood
L13	s l10 and l7 and l5 and (l3-4) AND L6	20	Acrylic acid wood preservatives having nano particles or metal oxides and UV protector
L14	s l10 and l7 and l5 and (l3-4)	281	Acrylic acid wood preservatives having nano particles or metal oxides
	b wpix		Change files to patent
	SET ABB on perm;SET PLU on perm; SET SPELLINGS ON perm		To set the spellings, abbreviations and plurals on permanently
	set range=1991-		
L15	s (ZnO or tio or tio2 or ((titanium or ti or zinc or zn)(2t)(oxide? Or monoxide? or dioxide)))/bi,biex or (C01G0023-047 or B27K0003-22 or C01G0009-02 or C01G0023-047)/ecla,fcl,ipc,ico or (2B230/CA03 or 4G047/AA02)/fterm	158180	Concept 1– mixture of words and classes If I had access to WPIX I would also look for the Derwent registry numbers/manual codes and the polymer class codes for the concepts
L16	s (nano or nanopartic? or nanoscal? or nanosize? or nanostructur? or nanocrystal? or nm or nanometre? Or nanometer? or ultrafine or (ultra(w)fine))/bi,biex or (L27K0003-00N or C09D0007-12N1 or	342808	Concept 2 – mixture of words and classes



	b82y0030 or M01P0004-64)/ecla,fcl,ipc,ico or 4G065/EA03/fterm□		
L17	s ((wood? or wooden or timber?)(4a)(preserv? or treat? or protect? or coat?))/bi,biex or 428/541/ncl or (B27K0003 or B05D0007-06 or B27K0003-52 or B27K0003-16)/ecla,fcl,ipc,ico or (2B230/BA01 or 4J038/PC06)/fterm	21682	Concept 3 – mixture of words and classes
L18	s (((UV or UVa or uvb OR LIGHT OR ULTRAVIOLET OR SUNLIGHT)(5a)(PROTECT? OR SCREEN? OR absorp? Or absorb? Or stabli? Or filter?)) Or photostabili?)/bi,biex OR (C09D0007- 12D4A)/ecla OR (4D075/CA32 OR 2B230/AA12)/fterm	169897	Concept 4 – mixture of words and classes
L19	s (acrylic or acrylate or polyacrylate)/bi,biex or (C09D0133 or L05D0502)/ipc,ecla,fcl,ico or 4D075/EB22/fterm		Concept 5 – mixture of words and classes If I had access to WPIX I would also look for the Derwent registry numbers/manual codes and the polymer class codes for the concepts
L20	s L27K0003-00N/ico	6	Specific ICO for the records having impregnation of wood with nanoparticles
L21	s (b27K0003-52 or B27K0003-16)/ipc,ecla,fcl	1235	Classes for impregnating wood with inorganics
L22	s l15-l21 and (ep or wo or cn or at or de or fr or cn)/pc,prc	409455	All of the above statements “or”ed together and limited by the countries of interest (DS not included as EP and WO are used as county codes). Also limits to patent documents



			only
L23	s l22 and l15 and l16 and l17	188	Metal oxide + nano particles + wood preservative
L24	s l22 and l20	6	Nano particle in wood impregnation (specific ICO)
L25	s l22 and l19 and l17 and (l15-16) AND L18	89	Acrylic acid wood preservatives having nano particles or metal oxides and UV protector
L26	s l22 and l19 and l17 and (l15-16)	544	Acrylic acid wood preservatives having nano particles or metal oxides
L27	s l22 and l21 and (l15-16 or l18)	171	Specific ecla on wood impregnation using inorganics and nanoparticles/metal oxides or UV protection
L28	s l22 AND L15 AND ((wood? or wooden or timber? or holz? or bois)/BI,BIEX OR L17) AND L18 and L19	112	Acrylic UV absorber + metal oxide and wood
L29	s l23-l25 or l27 or l38	474	
	dis an ti 1-20		If a number of results were way off the mark, I would further refine the strategy
L30	s l29 and (l15 or (metal(2t)oxide)/bi,biex)	366	Limiting to metal oxides
	dis an ti 1-20		I would view all results as TI, AN and then go back and display the full records for those I thought were of interest
	b hcaplus		



L32	s I30<pn,apps>	535	Transfers records from WPI to HCAPLUS so I do not need to look at the records twice
	dis his		
L33	s I10 and I9 and (I3 or (metal(2t)oxide)) and (I4 or I6 or I7)	31	Specific ICO with metal oxide with nano/uv stabiliser or acrylic
L34	s I10 and (I1(I)((wood? or wooden or timber?)(4a)(preserv? or treat? or protect? or coat?))) and I6	6	Metal oxides linked via indexing to wood preservatives
L35	s I10 and (I2(I)((wood? or wooden or timber?)(4a)(preserv? or treat? or protect? or coat?))) and I3-4	27	Acrylic linked to wood preservatives and nano particles or metal oxides
L36	s I33-I35 or I11-I13	178	
L37	s I36 not I32	88	Take off the records that have already been seen in WPI
	dis an ti 1-88		I would view all results as TI, AN and then go back and display the full records for those I thought were of interest
	Log hold		Logoff to review strategy and displayed titles to check which ones should be further considered

I would review all the titles for relevance and print the full record (which would then subsequently be reported as the patent numbers of interest). I would the review each abstract and for those of interest I would look in Patbase or other full text database to see if the claims were pertinent. I would report the family members for the countries of interest of those records deemed as relevant with the corresponding claim in a table together with legal status. Patbase has the advantage of having a machine translation of all the claims where no English language equivalents are available.

Once I had a list of patent numbers/application numbers, I would report all the relevant family members for the search with an English language claim of interest

After getting a final number of relevant patent numbers from Patbase, HCPLAU,



WPINDEX, I would look for publication numbers in Patbase and then do a forward and backward citation to check for other possible documents that had not been picked up by my search

Patbase

16	Patent numbers of interest	Using the search, upload documents, I would upload my reported patent/publication numbers.
17	CTF 16	
18	CTB 16	
19	(17 or 18) not 16	To de duplicate any that I already picked up (if I still had all the strategy, I would also eliminate all the results sets I looked at in full
20	19 and EPD>1990 and (cc=(DE or FR or AT or CN or JP or ep or wo) OR PRC=(DE or FR or AT or CN or JP or ep or wo))	To limit to the date and countries of interest which I would then review

On the final set of JP, CN, AT, DE FR EP WO patents reported, I would check the legal status and patent family on inpadoc and national registers for those still in force/pending or recently lapsed



Case study 2 – Sample answer

A client contacts you regarding a new project for developing an optical rain sensor with Fresnel lens structure which controls a windscreen wiper system.

He informs you that he wants to sell this product to car manufacturers in the US and Germany. The client does not want to infringe patents of third parties.

Introduction

When constructing the exam questions we wanted to receive both a working strategy to a solution and most of all your reasons for doing things a certain way in order to better assess your knowledge of search types, databases, search tools and strategic planning. We did not always succeed in getting sufficient comments in the answers (e.g. the reasons for choice of database), most probably owing to participants not having had a model of what was expected.

The following gives an overview of a possible course of action. Most of the examples are taken from the mock exams (in [Times New Roman, blue](#)), with our annotations in black. It tries to exemplify a promising strategy i.e. examples of how the markers thought the searches could have been constructed and commented.

1. General Preparation

Firstly if you did not know what a Fresnel lens is, a good starting point would be to check either patents having the word in the title or even more conveniently to look it up on Wikipedia. You would need to find out about the rain sensor system, how it controls a windscreen wiper system and what an optical sensor with Fresnel lens structure looks like.

2. Type of search / search concept

Examples from examinee's answers:

[A freedom to operate search takes two parts: first, find the relevant patents; second, search the claims for the invention.](#)

[Given that there are only search terms and two countries involved, a profile of subject terms and class codes has to be developed.](#)

The focus on granted patents, pending applications, time frames to be searched and choice of country should have been gone into more deeply here. As patents in this area are unlikely to be pending for the countries of interest beyond the 20 years from filing, searches may be restricted to pending and granted patent documents for the countries of interest (i.e. Germany and US or where Germany/US may be designated in an EP or WO patent) filed in the last 20 years or published in the last 21 years (to be on the safe side for parallel national and regional applications) for the countries of interest

Additional considerations from another paper:

[The search should be limited to Germany and US.](#)

[Also EP and WO documents will be searched as they may enter into national phase in DE and US.](#)

...

[The client should be asked if they are also interested in knowing about patent documents in the countries where the product is manufactured.](#)



The point on the EP and WO documents is particularly important. It is also useful to know if there were additional considerations that were not covered by the request, e.g. the clarification on where the product may be manufactured would need to be considered.

3. Choice of database

An explanation of the databases chosen e.g. considering the time constraints of the exam, one would benefit from a database that gives you easy access to the claims of your hits. Again this does of course not preclude other databases from being used - other reasoning is possible and valid for e.g. value-added abstracting databases: controlled vocabulary, superior classification, English language abstracts of foreign publications, etc.

4. Finding relevant classification

Examples from an actual exam:

As I am not familiar with classifications in the automotive suppliers technology, I go on the EPO search module, searching European classification, typing "windscreen" under menu of "finding classification for keyword" and get the result of hits : first of them is "**Cleaning of vehicles** (by apparatus not integral with vehicle B60S3/00; cleaning in general B08Betc) **B60S1**"

clicking on the given classification and scrolling further through the classification, I find out a class for with "optical rain sensor" **B60S1/08F2D**

Or from another:

Look for relevant classes using either a narrow search in PatBase and looking at the different homepages describing patent classes.

IPC classes:

B60S1/*	Cleaning of vehicles
B60S1/04	Wipers or the like, e.g. scrapers (to B60S1/44) G01W1/*
	Meteorology
G01W1/14	Rainfall or precipitation gauges
H01L31/0232	Optical elements or arrangements associated with the device

US classes:

318/DIG2	WINDSHIELD WIPER CONTROLS (or 318/DIG.2)
15/250*	Optical-member-attachable cleaner (e.g., windshield wiper) 73/170.16 METEOROLOGY
73/170.17	Precipitation
(e.g., rain gauge) 250/216	Optical or pre-photocell system



F term:
 2G089* METEOROLOGY
 5F089* PHOTO-COUPPLERS OR INTERRUPTERS

To find relevant US-classes for windshield wipers, an additional search was included focusing on US documents describing wipers in title

Other options would be to include classes from other systems like F-terms or Derwent MC with an explanation of why they were chosen

IPC:
 B60S0001-08 .. electrically driven (cleaning windscreens, wipers) G01W001-14
 Rainfall or precipitation gauges
 G01J0001-04 .. Optical or mechanical part (photometry) G01N0021-55 Specular reflectivity
 G02B0003-08 Fresnel lens

ECLA
 B60S1/08F2D [Optical rain sensor] [N0905]
 B60S1/08F2D2 [N: with a particular arrangement of the optical elements] [N0905]

Derwent Manual Codes
 X22-X06E/MC RAIN OR MOISTURE SENSOR
 S03-D02B1/MC DETECTING PRESENCE OF RAIN, SNOW OR ICE FOR NON-METEOROLOGICAL APPLICATION

DEKLA
 B60S 1/08 K Feuchtefühler

USCL
 250227240 With coupling enhancement means

5. Keywords and concepts

Once the concepts are defined any synonyms and classes should be exemplified. Here are two examples of keyword choice / concepts from examinee's answers:

Elements	Rain sensor	Fresnel lens/optical lens	Windscreen wiper system		
----------	-------------	---------------------------	-------------------------	--	--



Keywords	(Rain sensor%) or (rain sensing) or (rain detect*) or regensensor*	Fresnel or Fresnellinse*	WINDSHIELD % or WINDSCREE N% or (WIND SHIELD%) or (WIND SCREEN%) or (window pane%) or Frontscheibe* or Windschutzsch eibe* or scheibe*		
International class					
European class	B60S1/08F/low In particular B60S1/08F2D/1 ow	G02B3/08			
US class					
JCT					

Or:

Relevant English Search Terms			
Optical	Rain/raindrop	Sensor	Fresnel
Light	Water	Detector	Lens
Electromagnetic	Moisture	Monitor	Segmented lens
Optoelectronic	Wet		Collimator
		Rainsensor	
Windscreen	Wiper		
Wind pane	Scraper		
Car			
Vehicle			

Relevant German Search Terms			
Optisch	Regen/tropfen	Sensorvorrichtung	Fresnel-Prismen
Lichtmenge	Wasser	Regensensor	Linse
Optoelektronisch	Feuchtigkeit	Detektion	
Windschutzscheibe			
Windschutzglass	Scheibenwischer		
Kraftfahrzeug			

Since Germany is one of the targeted countries, it is especially important to also find German keywords. Even if you are not familiar with the German language you should nevertheless know about dictionary / translation sites/looking at EPB claims on the internet to help you with tasks like this. Or as one examinee puts it:

Since the client is particularly interested in Germany it is crucial to find German synonyms. This is done by the use of dictionaries and by the use of patent-documents having both English and German text.



A list of possible keywords:

Rain, moisture, precipitation, wet sens, detect
fresnel (lens, prism, structure) windscreen, windshield

Regensensor, optische Sensoreinrichtung, Fresnel Windschutzscheibe

6. An annotated search history

Here are two sample examples from the exams

Set	Items	Description
S1	9745	FRESNEL?
S2	176450	RAIN? OR PRECIPITATION OR IC=G01W-0001/14
S3	52117	WIPER? OR WINDSCREEN? OR WINDSHIELD? OR IC=B60S-0001/14
S4	12	S1 AND S2 AND S3
S5	88748	(RAIN? OR REGEN?)/CM
S6	3461	FRESNEL?/CM
S7	5	S5 AND S4
S8	5	S6 AND S7
S9	2	PN=(US 7804055 OR JP 2010141296 OR EP 2196793 OR US 20100147067)
S10	2	S8 AND S9

Better still is an annotated version which explains choices

#	Search query	Results	Comments
<u>25</u>	24 and PRD>19900101	7	Relevant documents found at this point of the search, with priority date after 1 st of January 1990.
<u>24</u>	RF=(Question 2 Paper A)	7	Relevant documents found at this point of the search.
<u>23</u>	22 and (9 or 10)	79	#23 combined with sensor or Fresnel (full text)
<u>22</u>	pa=(trw automotive)	1971	Relevant Patent applicant
<u>21</u>	(ctb 20) or (ctf 20)	100	Citations on #21 LOOK THROUGH
<u>20</u>	RF=(Question 2 Paper A)	6	Relevant documents found at this point of the search.
<u>19</u>	9 and 11 and 15	219	Sensor and windscreen wipers (full text) meteorology (classes) LOOK THROUGH
<u>18</u>	12 and 13 and 14	16	Rain (full text) combined with windscreen wipers and optical sensor (classes) LOOK THROUGH
<u>17</u>	10 and 14	942	Fresnel (full text) combined with with windscreen wipers (classes) LOOK THROUGH



<u>16</u>	9 and 14	579	Sensor (full text) combined with windscreen wipers (classes) LOOK THROUGH
<u>15</u>	sc=(G01W1/14) or uc=(73/170.17) or jct=(2G089*)	5492	
<u>14</u>	sc=(B60S1/*) or uc=(318/DIG2 or 15/250*)	47699	
<u>13</u>	sc=(H01L31/0232 or H01L31/0232) or uc=(250/216) or jct=(5F089*)	14594	
<u>12</u>	ft=(Rain* or moistur* or water* or wet* or humid*)	more than 100,000	
<u>11</u>	ft=(Windscreen* or windshield* or wiper%)	more than 100,000	
<u>10</u>	ft=(Fresnel* or lens or lenses)	more than 100,000	
<u>9</u>	ft=((sens* or detect*) w2 (optic* or photo*))	more than 100,000	
<u>8</u>	(ctb 7) or (ctf 7)	64	Citations on #7 LOOK THROUGH
<u>7</u>	RF=(Question 2 Paper A)	2	Relevant documents found at this point of the search.
<u>6</u>	ti=(wiper% and windscreen) and cc=US	827	Search to find US classes for windscreen wipers
<u>5</u>	tac=(((wiper%) w2 (windscreen% or windshield%)) and fresnel and sensor)	2	Narrow preliminary search LOOK THROUGH
<u>4</u>	pa=mercedes and tac=(wiper%)	57	Large car company that could have relevant patents. LOOK THROUGH
<u>3</u>	pa=ford and tac=(wiper%)	186	Large car company that could have relevant patents. LOOK THROUGH
<u>2</u>	pa=bmw and tac=(wiper%)	3	Large car company that could have relevant patents. LOOK THROUGH
<u>1</u>	pa=(hydreon)	0	Company found on the internet.

Modular histories with few keywords / classes per query line are preferred because they give more flexibility and help avoid misspellings / miscopying. Annotations or explanations of the reasoning behind a certain strategy allow some insight into the thought process behind the strategy (e.g. use of truncation, proximity and combinations of search terms). As there is no right or wrong way to carry out a search, it is important to explain why something was carried out in a particular way. This is not to say that the exemplified histories are the best one can



come up with but they show different ways to reach a goal, although the first one not only lacks cut-off dates and publication country restrictions but also explanations.

9. Documents possibly found:

This was not required by the exam but it was used as a check.....

US7894054B2
DE102008023845A1
US8082783B2
DE102008033204A1
US7894054B2
DE102008020171B4
DE102007039349A1
DE102007036492B4 US20070235638A1
DE19830120B4

Additional information on legal status e.g. whether a document is pending or in force and how to find out this kind of information should be mentioned even if it was not required to give a list of documents.