Patent Search For Engineers And Lawyers
Prof. M. Padmavati
Rajiv Gandhi School of Intellectual Property Law
Indian Institute of Technology, Kharagpur

Lecture - 35
Analytical tools for Patent search and analysis (Contd.)

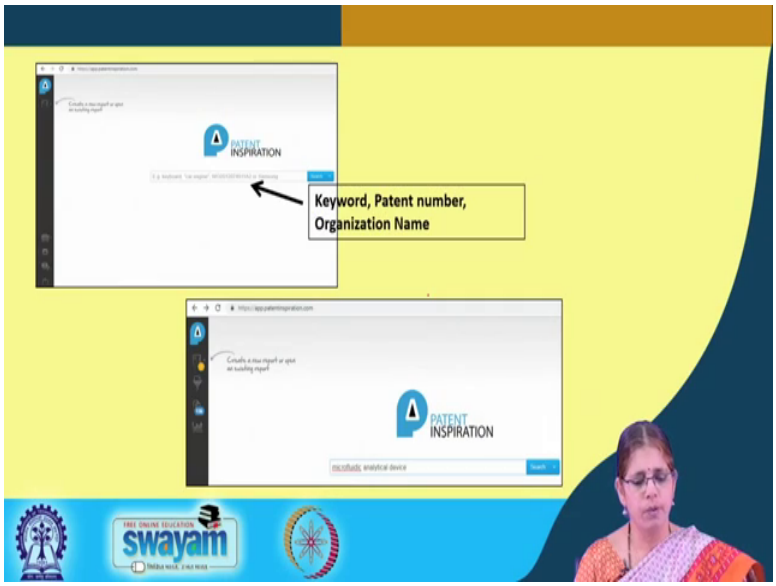
Welcome to the lecture on Patent Analytical Tools. In this lecture we will take up one of the other tools which is available which is Patent Inspiration.

(Refer Slide Time: 00:35)

The patent inspiration tool contains data from the DOCDB database from the European patent office which represents information which covers over 102 countries a user can utilize this tool to make patents searches and also conduct different analytical options in terms of the patent data.

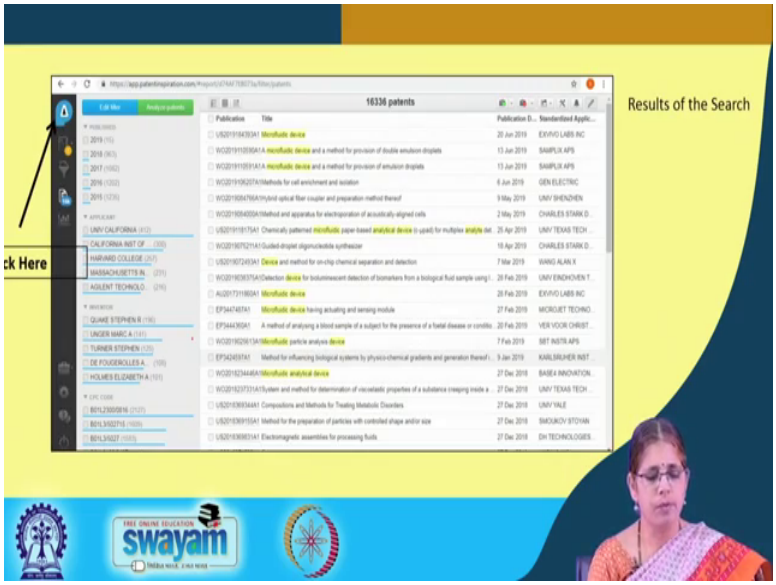
The; this particular tool can be tested utilizing the web link that is provided in this slide ww app patent inspiration dot com. So, once you get a user id one can test this particular tool to understand what are the different patent analytics available as a part of this particular tool.

(Refer Slide Time: 01:29)



Once you input the user id and password the authentication is done and the tool is opened up where one can search by given keyword and or organization name or even a patent number. So, once you input the particular keyword in this case we have given the keyword micro fluidic analytical device, then you can actually click on the icon here for conducting the search.

(Refer Slide Time: 02:10)



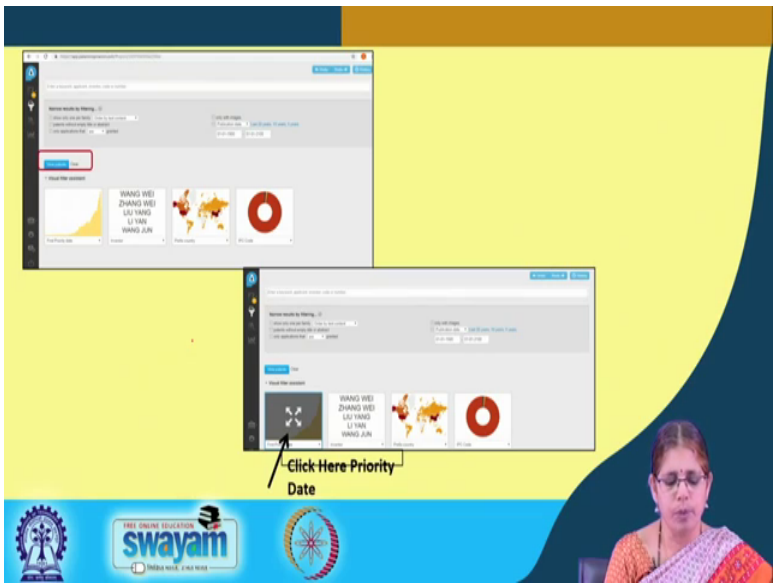
What happens is this is how you can see the list of patents that are shown on this particular screen, where you have the publication number, the title that comes up and

other information in relation to the patent. As you can see there is a highlighting of the word micro fluidic device wherever it occurs in the title of the patents.

Now, one can select out specific patents out of this and download them for future analysis. There are options to look up patents only in relation to specific applicants. So, what you see on the left extreme is the filter where you can edit it either by publication date, a publication year, the applicant information, the inventor name and also the classification code.

So, depending on that filter again the patents will be organized as per the specific filter and one can actually use the analyzed patents option to look at the analysis.

(Refer Slide Time: 03:23)

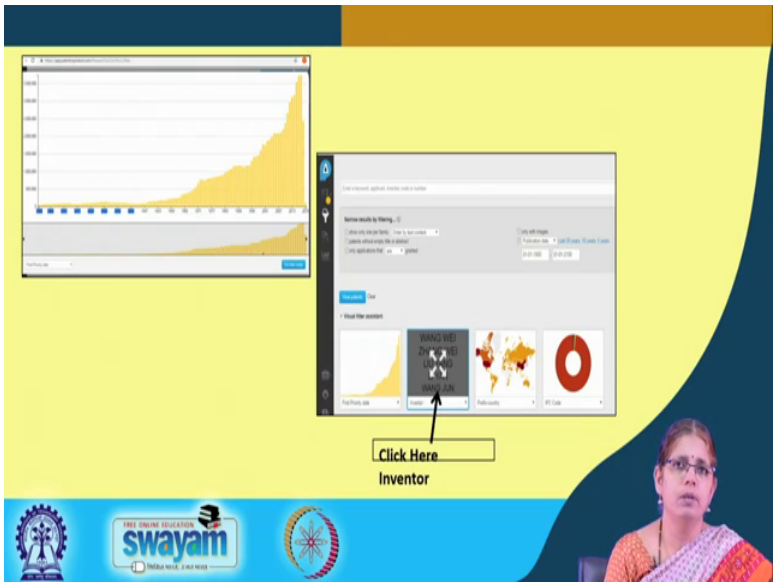


So, there are different ways in which this database supports patent analysis. So, if you go to the view patents and then you need to invoke how would you like to view the patents.

So, there are several ways in which one can view the patents and as you can see in this particular frames that are represented, you can view the patents as, but the priority index, as per inventor information, as per country code and as per IPC. So, one can set the publication date of the patents either by the last 20 years 10 years.

So, the last 5 years one can only call for images in relation to patents that information can be also obtained. So, once you select the patent data set you can actually click on the relevant frame here to look at the analytical option.

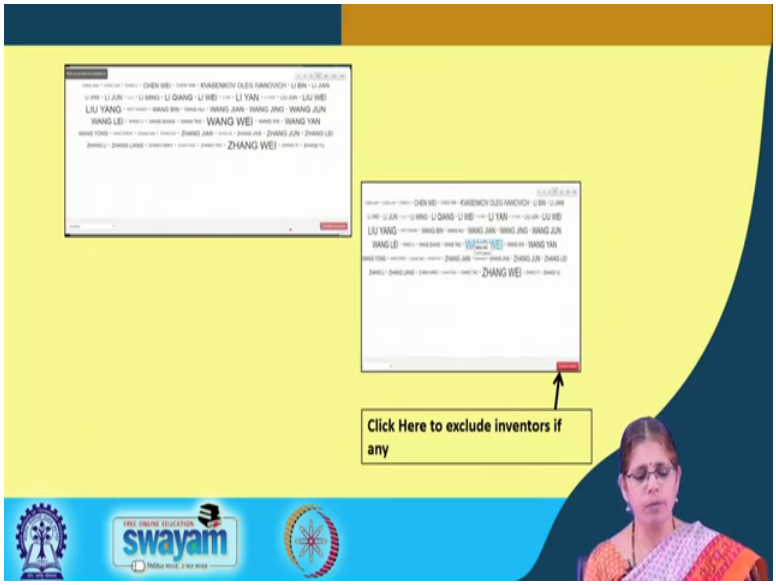
(Refer Slide Time: 04:36)



So, for instance if you click here for the priority date based data, you get the graph with respect to the representation of patents in relation to the priority date.

And that particular year and so, this is how one can look at the information. So, the next option that is available is for click for inventor.

(Refer Slide Time: 04:59)



So, if you click for inventor it throws up a image which consists of different names of the inventor. One can actually use options of excluding certain inventors whereby you can

remove some inventors and then look for the inventor space. So, which means you select and then say exclude.

So, there is a possibility to exclude inventors if you would like to and then look for the patent to see how the how many inventors have how many patents. So, that is one other type of analysis.

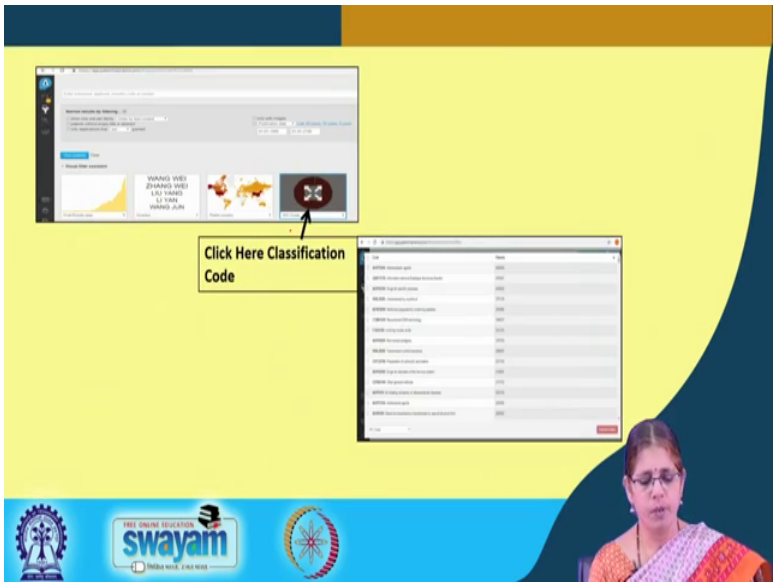
(Refer Slide Time: 05:36)

One can actually see the information in relation to specific countries. So, again here this provides the global scape in which a given set of patents are shown from the point of view of the spread with respect to the entire globe nd depending on the color coding one can understand what is the level of information that this particular country has with respect to the patents.

Here again one can exclude specific countries and then relook at the global map in terms of the representation of the patents. So, this is another easier way of looking at the spread of the patent information country wise.

So, unlike looking at it from the point of view of the data in 2 columns. So, here you can see at a glance, which are the major countries which have the patent filings in this particular area.

(Refer Slide Time: 06:39)



Another option that is available in is to look at patents in relation to the classification code. So, when you click on the IPC code in the main window, you will get the organization of that patent result in relation to the IPC code which appears in the next screen here where you have the code, against the code you have the representation of what area that is and then you have the number of patents that are represented in that particular area.

Again just like in the case of where we saw for the inventors for the country based as well as for the priority based information, one can exclude out the specific IPC using the exclude code.

So, if you click on this particular you select the specific IPCs and click on exclude code then you will get a redrawn information in relation to specific IPCs and the patent families within that.

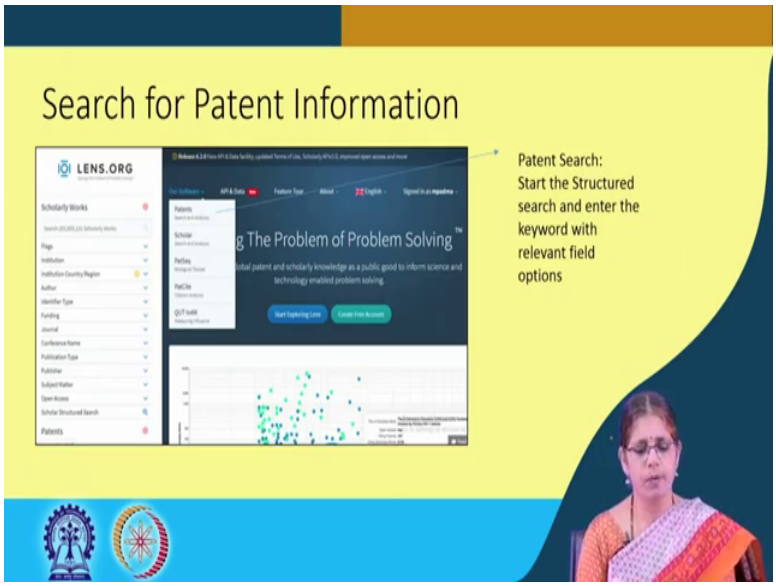
(Refer Slide Time: 07:45)

One another interactive tool that is available for patent analysis is lens, which is available at ww lens dot org. This is another advanced analytical tool for analyzing patents at the global level. There are various types of analysis that can be carried out in relation to patents utilizing this particular database.

There are some specific type of analysis that is possible under lens. For instance, if you want to analyze biological sequence based information there are different analytical tools available under the lens.

Citation analysis is available under patch site and further this also provides the option of looking at understanding what we call influence of technology. So, one can actually do a technology impact analysis in relation to the amount of patents represented in an area. So, let us further look at what are the different parts of this particular tool.

(Refer Slide Time: 09:12)



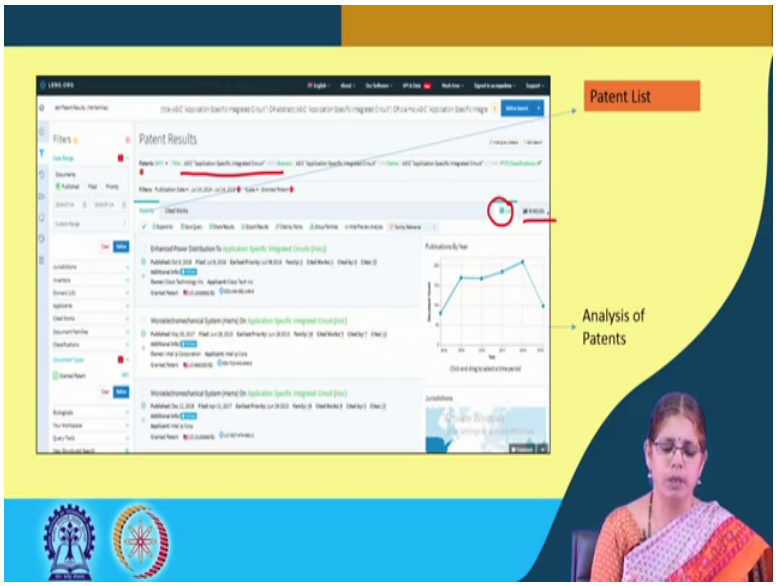
So, the basic interface in relation to lens dot org is this basic window. One can utilize the test mode of this particular tool by obtaining a registration for a user id. So, what is the software that is present in particular with this particular tool is you can search for patents.

And do the analysis there is also an analysis called this scholar analysis, which is for looking at publication space that is it takes into consideration conference proceedings publications and analyze strength of scholarly works.

PatSeq is the information that it provides wherein one can look at finding sequences, comparing sequences, locating sequences and comparing sequences using the PatSeq which is a biological toolkit. Pat site is the one which one utilizes for doing citation analysis. This tool also provides for a proprietary software which runs in the background which can actually analyze the technology influence.

So, the QUT in 4M is the particular tool available to understand the impact of a technology in relation to a given area.

(Refer Slide Time: 11:01)

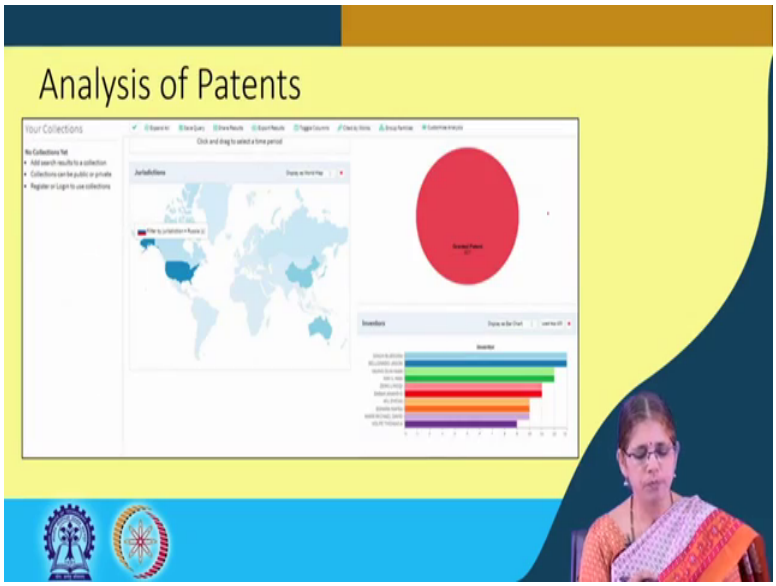


So, let us look at the further details of each of these tools available. So, when one utilizes the patent search option one can actually conduct patent search in relation to a given area. For instance in this particular case we have given the keyword application specific integration integrated circuit to be searched for in the title in the abstracts and in the claims utilizing as particular spread of the information in relation to this particular area.

So, what you see here listed are the different patents one below the other and beside that is what you see the analysis information. So, here you see that these patents are being listed one by one and you have the analysis option in the beside in the text beside the textual part.

So, one can look at various information from this instance. So, by clicking on each of these options, we can go to the elaborate information in relation to a specific category on that particular patent.

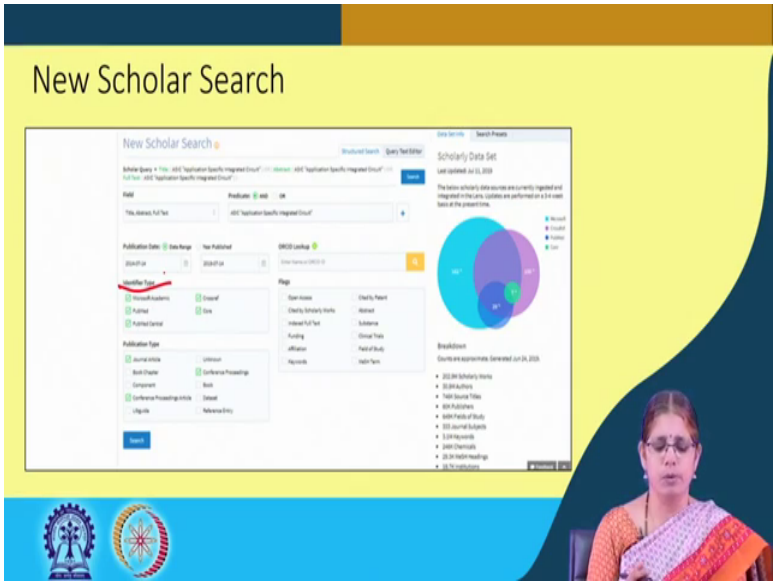
(Refer Slide Time: 12:24)



So, if you click on the analysis button as you can see here in this particular window, you go to the next part of it where you get the analysis as per the jurisdiction, then as per the grant number of patents and as per the inventors.

So, one can actually click and drag depending on a particular trying period, there are additional filters available in order to look at the data in a more in depth fashion or in a very specific fashion. So, one can actually look at newer collections for the particular information as well.

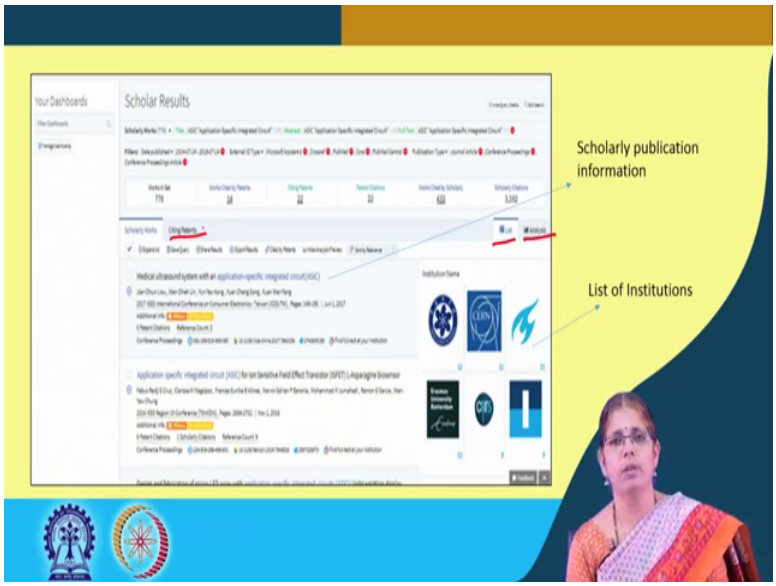
(Refer Slide Time: 13:13)



The other tool that is available under the lens is the new scholar search. So, this provides information on the basic publication information. So, one can give the same term applied specific integrated circuits and call for information in relation to the publication type either its a journal or a conference proceeding or a you know a specific article.

Then there is a different types of collections are available in order to access scholarly articles. So, this sources from PubMed, PubMed Central, CrossRef and all of those. So, one can decide on which is the identifier type under which you are selecting the specific collection and then look at the search. So, this is how one can actually understand the value of general literature which is non patent literature in relation to a particular area.

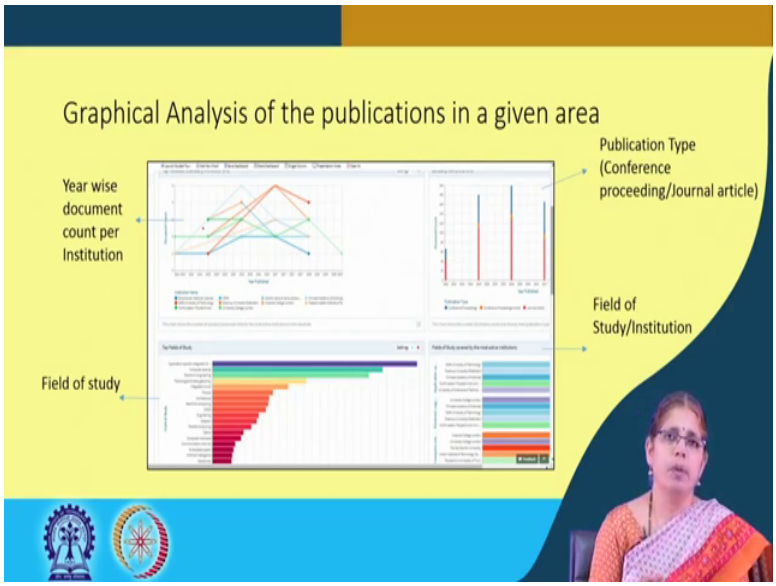
(Refer Slide Time: 14:21)



So, here you get a whole series of publications and what you see on the right side is the institutions which represent the publications. So, again here you have the listing which is listing the basic scholarly works and then you have the analysis.

Incidentally one can also get the information relation to citing patents utilizing the citing patents option. It also provides you summary of the information on how many works are cited in the patents which are the citing patents and which are the cited works scholarly works. So, this gives you information in relation to the spread of literature in relation to a specific area (Refer Time: 15:14) institutions.

(Refer Slide Time: 15:16)



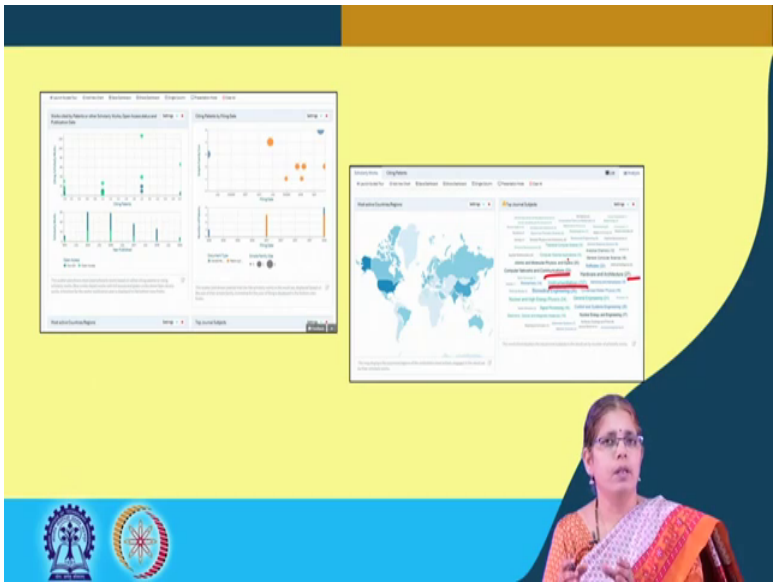
One can also get a graphic and analysis of publications in a given area. So, here you see the overlay of institutions year wise and the publication information in the first part of the graph.

One can also look at the publication type (Refer Time: 15:38) the growth in the area. So, here you have conference proceedings, then those which are represented by articles and conference proceedings move into articles and those which are only journal articles. So, based on publication type one can actually look at the data.

Top fields of technology give you information in relation to the where are the where is the literature in relation to the abundant representation for that particular area. So, field of study gives you that information. When you really look at the field of study (Refer Time: 16:24) institution you will see the relative growth of that particular area in relation to different institutions.

Now, this provides a very very interesting visual interface because of the color coding that you can see. So, you can understand the relative strength in relation to a particular area.

(Refer Slide Time: 16:46)



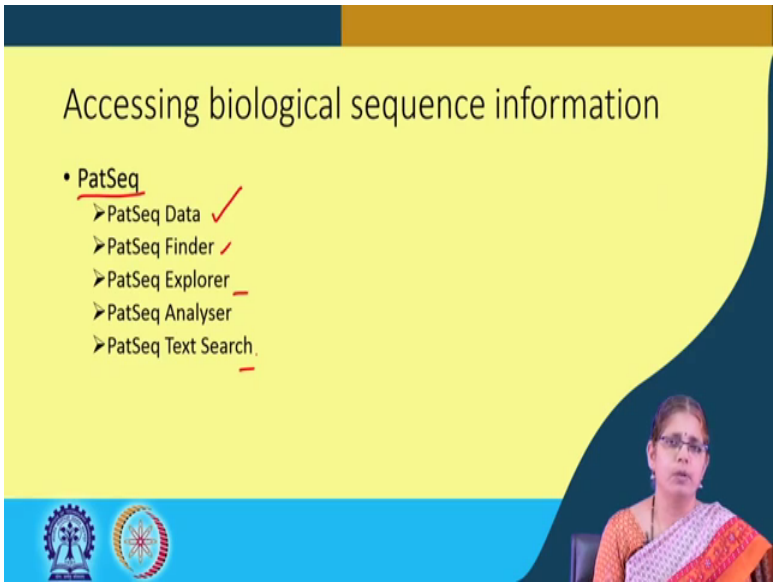
Besides the information in relation to the publication type, one can actually also look at the information in relations to work cited and citing patents. So, here what you see in the first panel is a representation of such information.

This provides important leads into understanding the value of citing patents as well as the value of a literature information in relation to a given area. One can actually also look at which are the most active regions in the world which are actually working in this space.

So, here you see an area map with the names of the technologies and in the bracket you see the number which indicates that those are the number of patents for instance here you can find instrumentation is represented by a given number of patents hardware and architecture by a given number of patents computer networks and communications.

So, in a glance one can understand which are the major areas that are represented in this particular area.

(Refer Slide Time: 18:01)

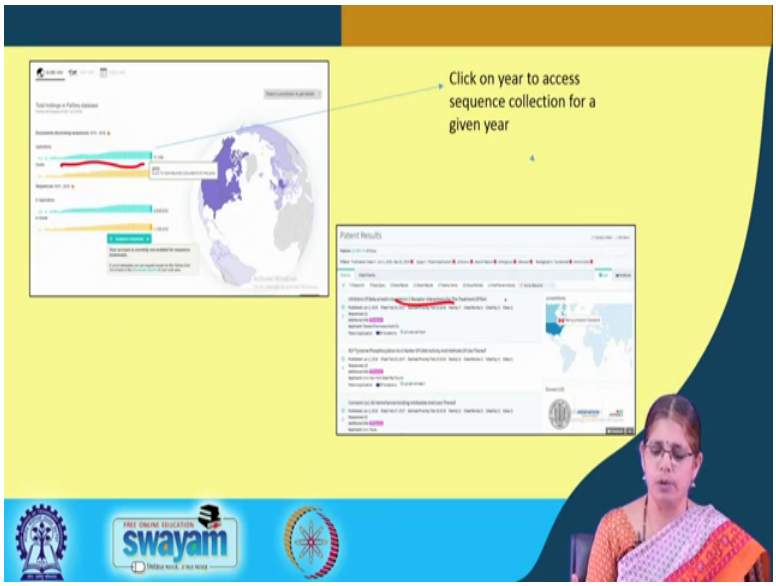


One of the important areas for patents search especially in the area of biotechnology is sequence search. In some of the earlier lectures we discussed about the why the need for sequence search and how one can utilize the databases for sequence search where we discussed the aspect of the importance of sequences.

The lens provides the tool for assessing sequences. In this case there are these different options available under PatSeq which is the basic tool. So, one can actually look at the sequence data one can find sequences, one can explore sequences from the point of view of the presence, one can analyze sequences from the point of view of looking at a similar sequences and one can also carry out a text search where one can look at the gene across different genomes.

So, let us understand some of this in detail.

(Refer Slide Time: 19:15)



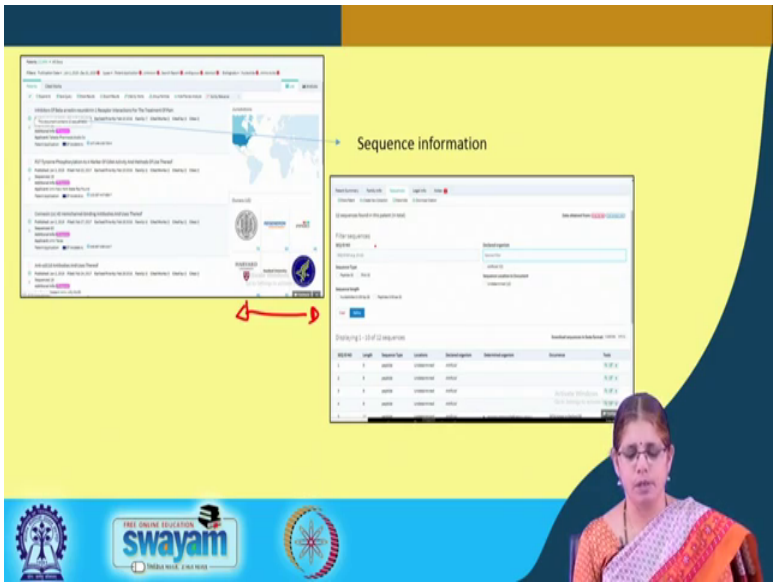
So, this is the basic interface that opens up when you click on the PatSeq or the pattern sequence database. Here you have the graph where you have the representation of applications grants in a particular database.

So, this database supports a whole lot of sequences and the total number of sequence information is actually provided in this particular window. So, if you see the representation here it actually means different years in which the sequences are available.

So, if you click on the last bar which is the sequences that are available for 2019 and if you click on that, you go to the sequence collection for the year 2019 and if you do a mouse over one can understand that these are the sequences present or documented in lengths for the year 2019 similarly one can look at the grants information as well. So, one can actually get information in relation to not only the sequence but also the background patent information.

So, patents disclose a lot of sequences which are taken as part of the patent. So, the basic patent description is also available in the patent lens. So, here we have different sequence deposited and accordingly the sequences can be any different type. So, for instance in the very first one talks about inhibitors for beta here it is basically a receptor interaction and so, in this patents there are a few set of proteins or genes which are disclosed.

(Refer Slide Time: 21:11)

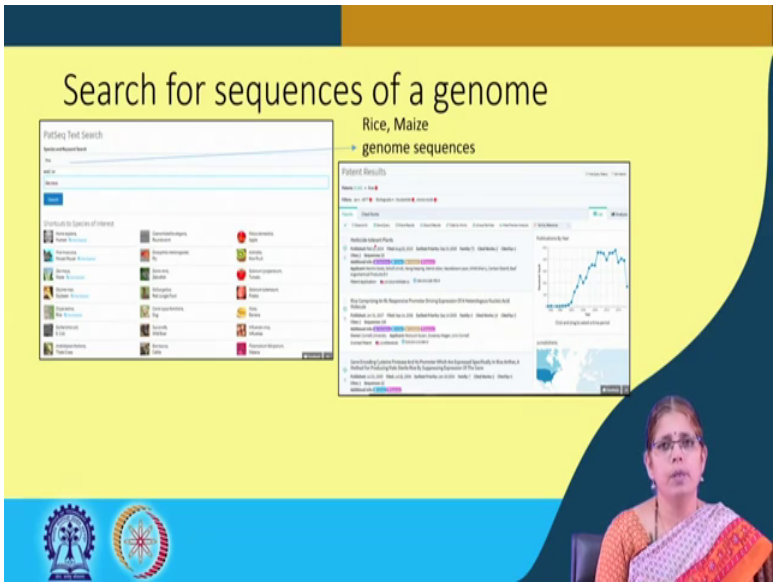


So, one can again look at the portfolio in relation to institution which you see as this particular part of the frame in the right side, which represents the jurisdictions and the owners in relation to that set of patents. So, if you click on the link for sequence one can actually go to the sequence that that particular patent discloses and here is this frame where you can see the display of the sequences.

So, it tells you what is the sequence type, what is the sequence id typically in every patent you have different sequence ids that are disclosed, the length of the sequence and which is the claimed organism from where this sequence is being isolated. So, these are this is how one can actually look at then one can actually also filter sequences based on specific interest.

So, for instance when you look at this particular sequence under this particular patent, you get the window where 12 sequences are represented; that means, this patent has 12 different sequences. So, those are listed one by one.

(Refer Slide Time: 22:29)



One can also search for sequences in a genome by using the text search option. Here you have the sequence where you provide the species name from where the sequences of interest is or you can give a keyword. So, for instance, I can give the species name rice and I can also call for another genome maize for instance rice and maize are cousins.

So, I am interested in knowing the entire set of sequences for rice and maize or I may specify rice and I may specify this the particular gene in question. So, in which case you are looking at that particular gene. So, the database also supports the certain genomes.

So, what you see here is a listing of those genomes. So, in the genomes that are available one can actually conduct the search. So, here you have when the search is conducted you know that what are the set of patents that represents the genes claimed from rice or from and from maize.

When is when one is looking at understanding biological sequences especially for a patent searcher in this particular area, one should understand that sequences are in this particular area claim broadly; that means, the relevance of a sequence is realized in relation to many genomes and in many contexts.

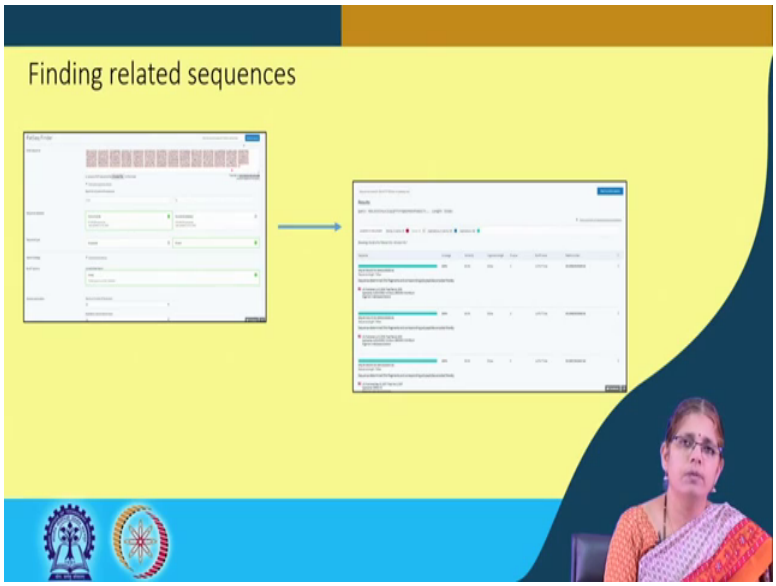
So, for instance if I am looking at a receptor like kinase let us say in rice, the first thing to keep in mind is that there could be many different type of receptor like kinases.

So, in which case if I give receptor like kinase, I will get the entire set of genes in relation to whatever receptor kinases are known I may ask for information in relation to a specific receptor kinase in which case I would give the keyword Receptor-like kinase 1 or RLK1.

So, it is important to understand that in this case of biological sequence search it may be useful to do a general search to understand what are all the sequences that are already claimed as a part of that particular gene set. Not only that it is also important to understand if sequences from other genomes are also being taken as part of patents so; that means, one may look at the comparable sequences from maize or other genome, which are again similar to the rice receptor like kinase. So, understanding the patent scope from the point of your claim spoke is very relevant.

So, that will give us an idea of the monopoly over one particular set of genes or the gene context. So, that would allow you to understand the level of the growth already in that particular area. So, one can also see the graphical representation in terms of the growth of the sequences in terms of the publications per year jurisdiction information all of that one can find out.

(Refer Slide Time: 26:10)

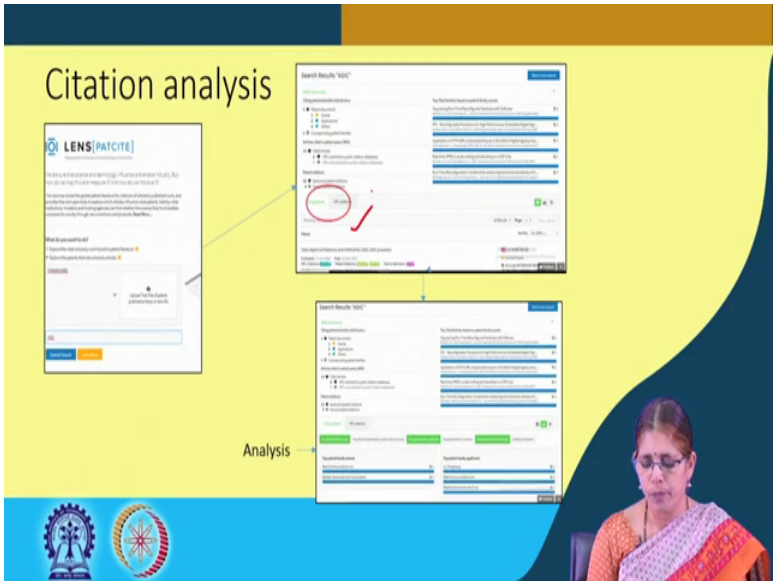


One can actually look at the finding sequences option, where under the PatSeq finder you can actually upload the sequence information or copy paste a sequence information. Now in this case the protein sequence information is provided and then you can select what is

the counterpart information that you require either the gene information or the protein information and then search in the database.

So, the results are shown in the next frame, where you find the sequences from different contexts that appear on this particular screen. So, here you can find out which are all the sequences which are similar to the original sequence that you pasted in the query window and that way you can understand how many sequences are already part of the monopoly that is already claimed as part of patents.

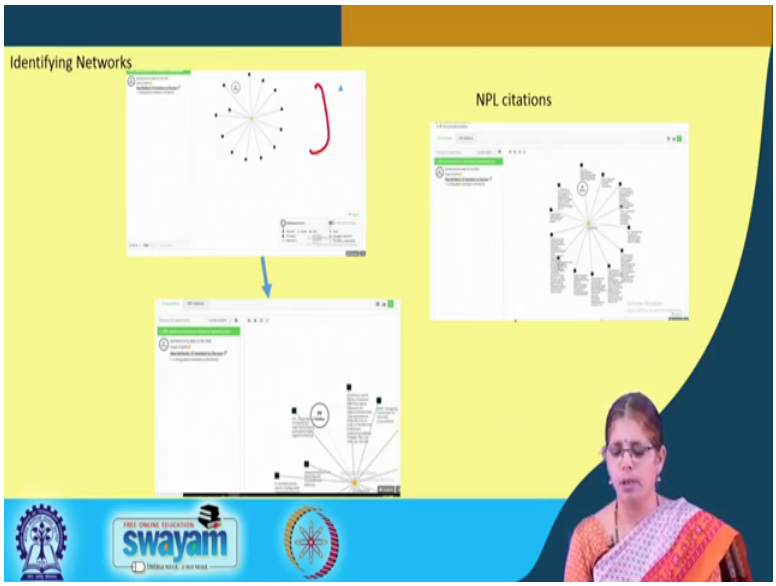
(Refer Slide Time: 27:22)



Citation analysis is what is available under the pat site and this is again I an analysis which provides you information in relation to the citations. What is also available is the not only the citing patents also the non-patent literature citation, as you can see in this particular window.

So, one can actually get the top cited articles information from this particular search in relation to citations. It also gives you statistics in relation to what are the corresponding patent families, how one can look at the institution based distribution of the citing patents.

(Refer Slide Time: 28:14)



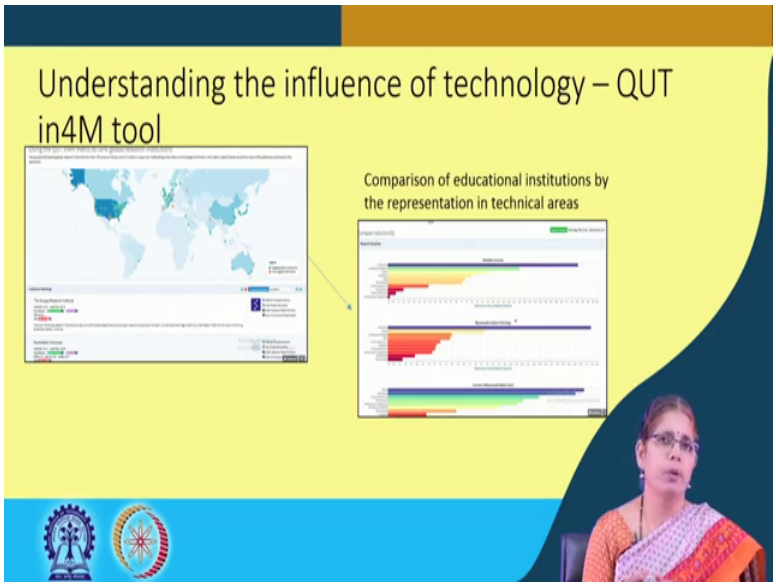
We had started the lecture on patent analytical tools by indicating that one of the areas which is of importance where analysis is not relevant is the area of understanding networks. The lens database has the identifying networks option where one can look at network information in relation to a given area or a given patent.

So, by providing the key term one can ask actually ask for a network to be created and this is how one can visualize the network from the overall visualization part.

So, here is a simple picture which you can see representing different points and connections. Now as you go closer in to understanding each of these points, this opens up the portfolio in relation to that particular information and that is how you can see the spread of the data which you can see it as a network and in this case we are saying the NPL citations as a network.

So, by an interactive way of dragging on this particular figure, one can understand the entire network in relation to the citations. So, this provides for that enhanced view into the particular area.

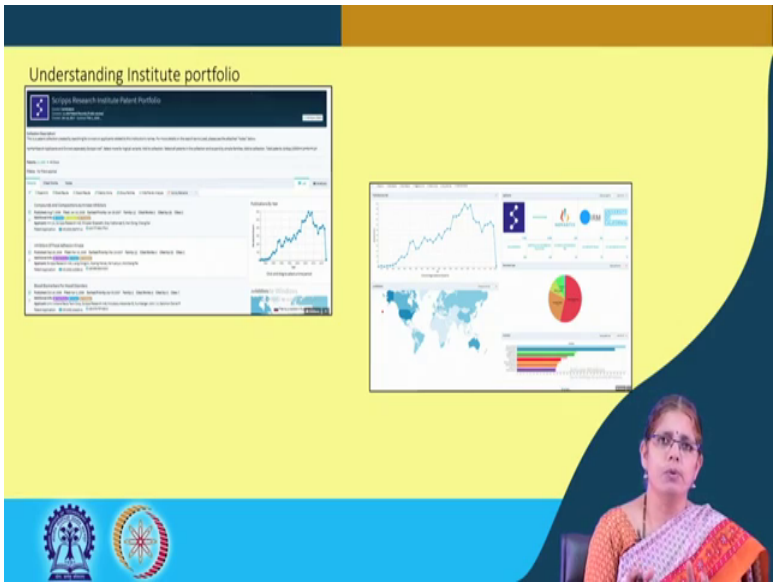
(Refer Slide Time: 30:00)



One of the important things in relation to patent analysis is understanding the influence of a technology based on the patent analysis. The QUT in 4M tool provides that mapping of information where it is helpful for decision makers whether in industry or in the government or specific agencies to understand what is the growth and does the technology impact a particular domain.

So, one can actually compare different institutions and companies based on the technology space. So, here is a representation of the comparison of the educational institutions in different technical areas. So, based on the technical areas you can have the different institutions that helps in understanding relatively with respect to different areas what is the growth of an institution and there is also a ranking system whereby one can rank top educational institutions which the tool inherently has so that you understand which are the top ranking institutions for certain areas.

(Refer Slide Time: 31:34)



For instance, you can go by institution one by one. Here you have one of the institutions and its institution patent portfolio represented in this particular window. Since the tool inherently has a mechanism of ranking institutions all one needs to do is to click on that institutions name and immediately you can see the strength of the patents and the analysis information provided.

One can actually select out certain patents and the literature information to download and do further analysis. This is one representation of this institution in relation to the filings, the geographical presence, area wise distribution as well as the technology wise distribution.

So, across institutions one can see the relative growth of a particular technology, this can be useful for people who are looking at funding, people who are looking at the impact of funding to an institution for a given area.

So, today we have different tools which can also provide for information in relation to technology space and the impact of technology in relation to a given area.

(Refer Slide Time: 32:59)

The demo of the patent lens tool is what we will be now undertaking as a part of this lecture.