

Tutorial

Prior Art Evaluation with percipio<BigData>

<https://percipio-big-data.com/>

What is Prior Art?

- Prior art is constituted by all information that has been made available to the public in any form before a given date that might be relevant to a patent's claims of originality.
- If you want to file a patent it is important to check if this idea has already been published.
- If an invention has been described in the prior art or would have been obvious from what has been described in the prior art, a patent on that invention is not valid.
- Prior art search is researching various data sources. It is determining if there is prior art that discloses your invention. Prior art includes existing patents, patent applications, and non-patent literature. It can be found anywhere around the world. Prior art is any existing documents that show or describe the invention.

How to Search for Prior Art

Prior art is any existing documents that show or describe the invention, e.g. patents, patent applications, and non-patent literature.

- Describe your idea.
A good concise description is simpler and easier to use than a long explanatory one.
- Define key words.
The description is used to develop a good set of keywords.
- Choose your sources.
The more places searched the more complete the search.
- Use the keywords to search.
Download relevant documents for later reference and study.
- Review your first results.
Assess, evaluate, and refine keywords to narrow the results.
- Expand your search.
An exhaustive search includes a variety of databases, prior art can come from anywhere.

How to Improve Your Search

- One of the challenges in prior art search is the utilization of as many sources as possible and the efficient adaption of keywords.
- In many cases the identification of new keywords and the utilization of additional sources pose some effort and might need smart approaches.
How? → Try **percipio**<BigData> and explore a more comprehensive approach based on searchable word clouds, covering patent and non-patent literature.

Example [Step 1]

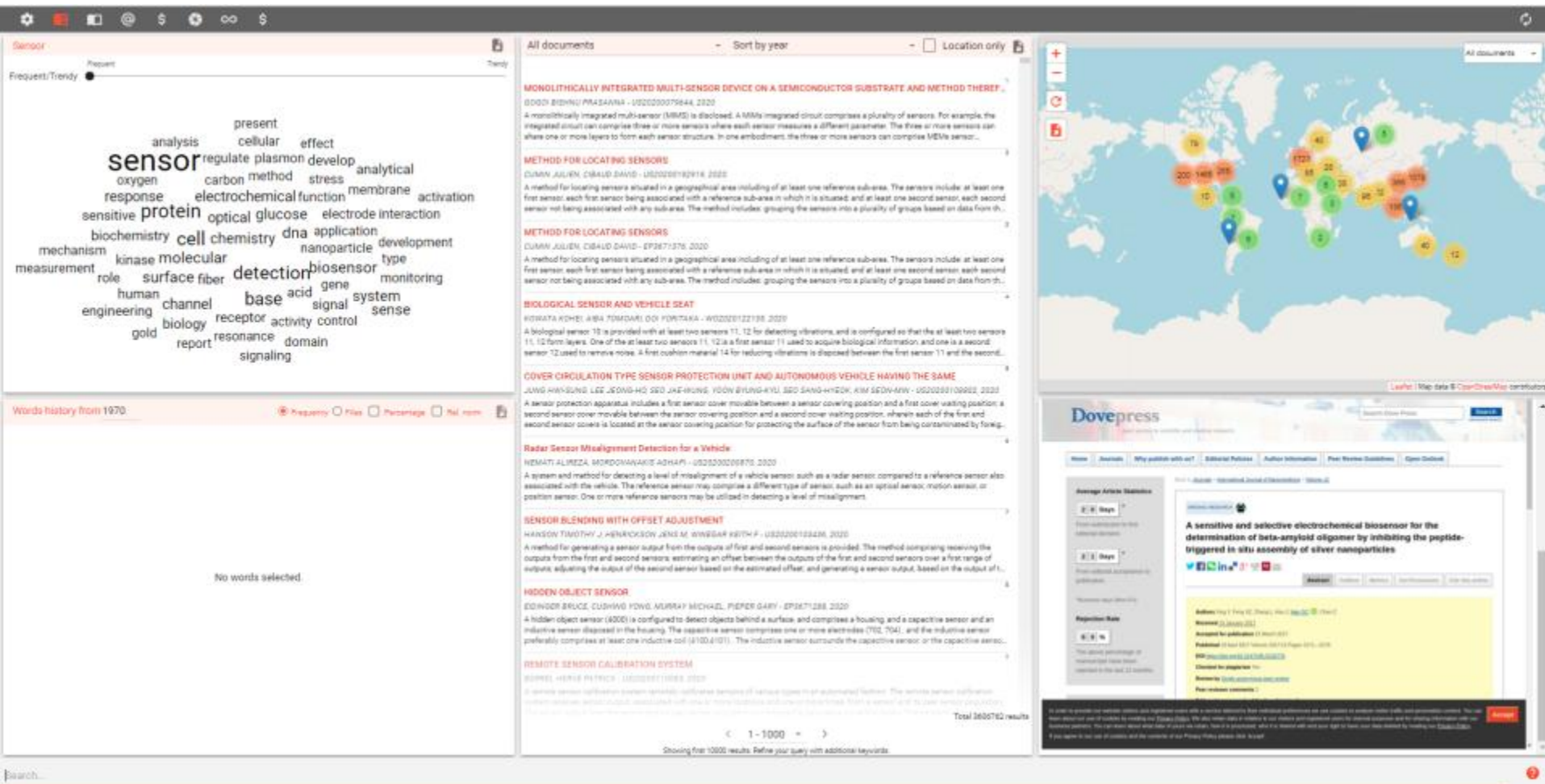
You think about filing a patent related to a novel kind of biosensor.

- Describe your invention
Biosensor based on nanoparticles for the detection of certain peptides.
- Define initial keywords
E.g. “sensor, biosensor, nanoparticles, peptides, ...”
- Choose your plan ([percipio sign up and choose plan.pdf](#) ([percipio-big-data.com](#)) and send keywords to **percipio**<BigData> ([info@percipio-big-data.com](#))
- **percipio**<BigData> will set up your individual search engine based on initial keywords.



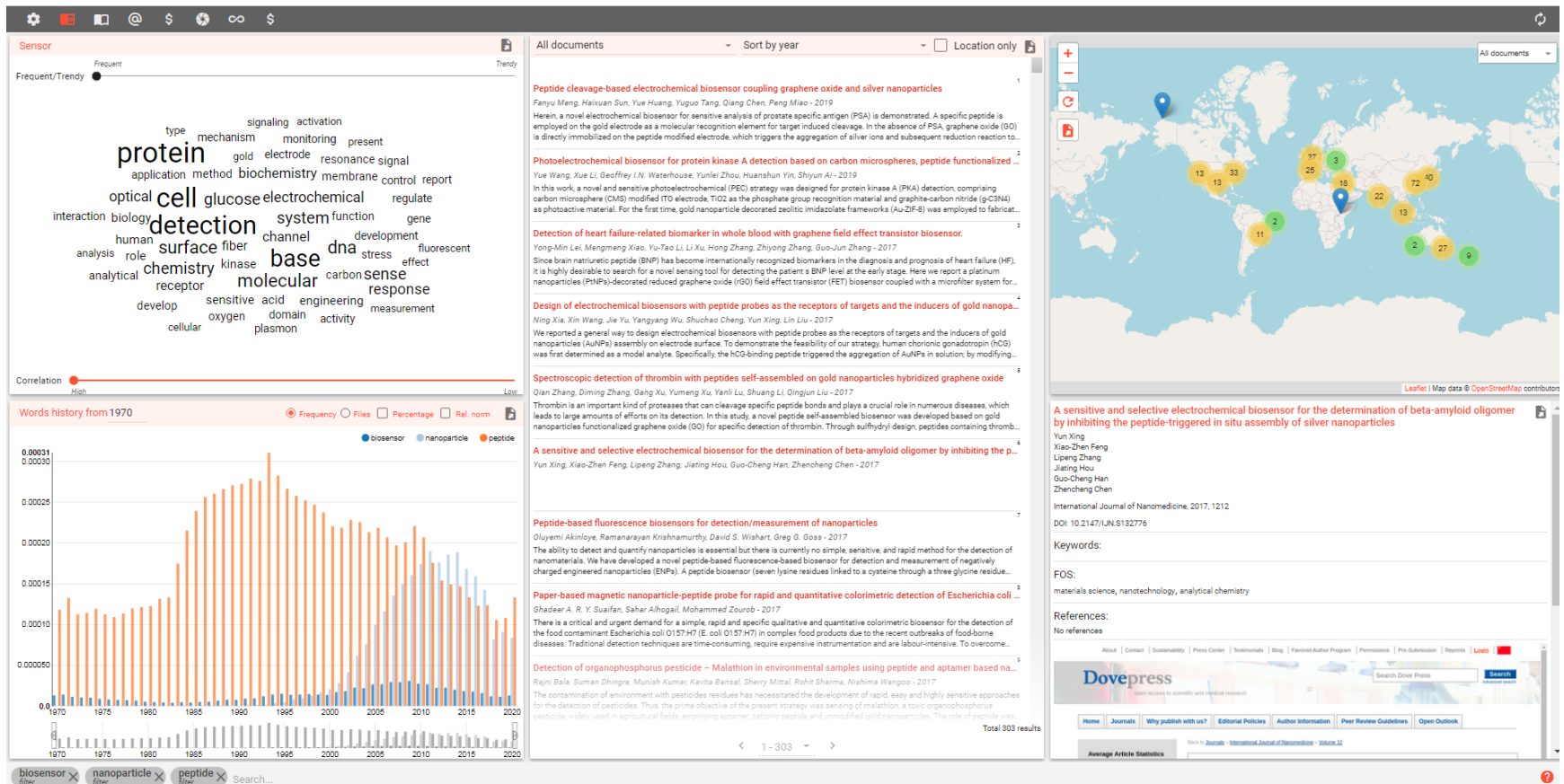
Example [Step 2]

Your screen might look like this, showing the specific word cloud, a comprehensive list of patents and articles, the localization of scientists and more.



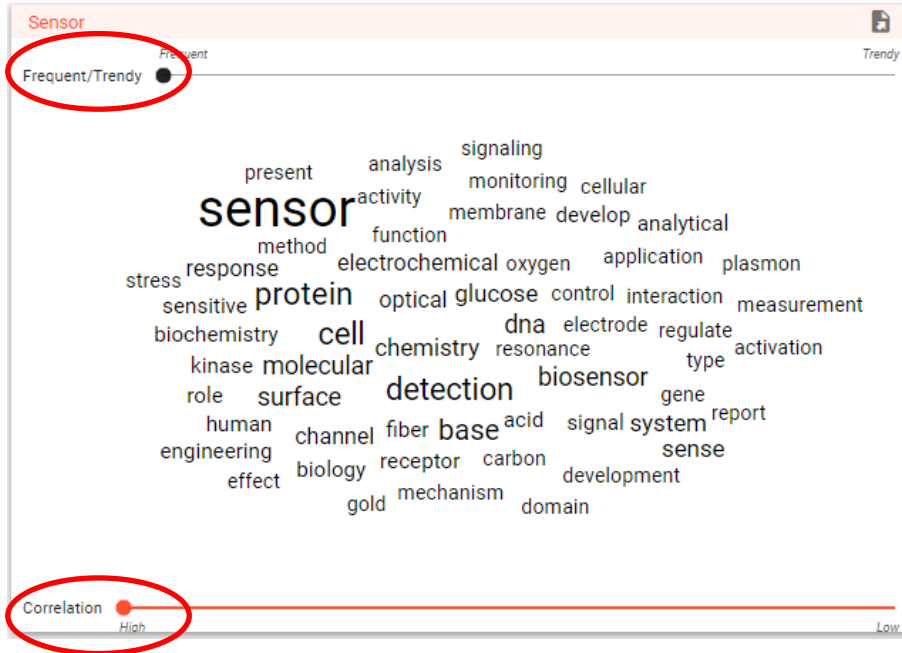
Example [Step 3]

Utilize the power of **percipio**<BigData> to modify the word cloud by clicking on interesting words, adding new words, use the sliders to change correlation and frequency of words,

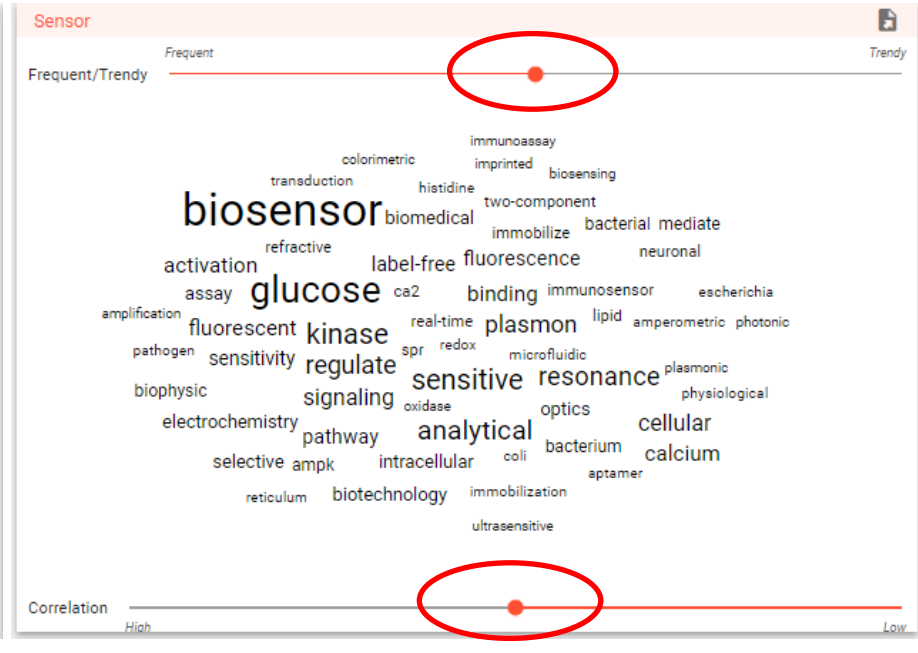


Example [Step 4]

Use the sliders to modify your word cloud by changing word frequency and correlation.



- Slider “Frequent/Trendy = 0 (most frequent words of the search are displayed)
- Slider “Correlation” = 100 (highly correlated words are displayed)



- Slider “Frequent/Trendy = 50 (words with moderate frequency are displayed)
- Slider “Correlation” = 50 (words with a somewhat less correlation are displayed)

Example [Step 5]

Browse the literature and patent list, sort by year or relevance, evaluate, modify search until prior art is detected or is most probably non existent.

All documents Sort by year Location only

CTC detection SPR sensor having high sensitivity and dual selectivity and preparation method thereof 1
CHEN HONGXIA - CN110646382, 2020
The invention discloses an SPR biosensing system for detecting a CTC. The SPR biosensing system includes an SPR biosensor, a cell membrane functionalized nanoparticle and a folate modified nanoparticle; the SPR biosensor includes an immunochip having a surface modified by a JUP antibody; the cell membrane functionalized nanoparticle contains a JUP protein and a folate receptor; the cell membrane...

Electrochemical biosensor for detecting base excision repair enzyme and preparation method and application of elect... 2
ZHANG CHUNYANG, CUI LIN, ZHAO MINHUI - CN110687171, 2020
The invention provides an electrochemical biosensor for detecting a base excision repair enzyme and a preparation method and application of the electrochemical biosensor. The biosensor comprises a beta-CD/FeCN/GCE electrode, the beta-CD/FeCN/GCE electrode is prepared by modifying iron rich nitrogen carbon nanotubes and cyclodextrin on a glassy carbon electrode; the electrochemical biosensor further...

SYSTEM AND APPARATUS FOR POROUSLY-ENCAPSULATED MAGNETIC-NANOPARTICLE BIOSENSORS 3
WEAVER JOHN B, GIMI BARJOR, GRISWOLD KARL - US20200110085, 2020
A system for measuring analyte concentrations has porous-walled nanocontainers containing multiple magnetic nanoparticles, the magnetic nanoparticles coated with a selective binder that is analyte-responsive and binds a the analyte, an indicator substance releasable from the selective binder by the analyte, or an indicator substance cleavable by the analyte, apparatus for exposing the nanocontainers to a fluid...

MAMC-MEDIATED BIOMIMETIC NANOPARTICLES (Machine-translation by Google Translate, not legally binding) 4
JIMÉNEZ LÓPEZ CONCEPCIÓN, VALVERDE TERCEDOR CARMEN, PEIGNEUX NAVARRO ANA, JABALERA RUIZ YLE... - ES275... - 2020
Biomedical magnetic nanoparticles comprising MamC. The present invention provides magnetite comprising superparamagnetic biometric nanoparticles, which can be manufactured by a scalable process. Furthermore, these nanoparticles have promising properties, since, if functionalized, they can become drug transporters or contrast agents for clinical imaging. They can be used in clinical settings also to purg...

Nano immunosensor for detecting penicillin G residues in dairy product and preparation method of nano immunosensor 5
LI HAN, XU SHUNQING, PENG YANG, ZHOU YIN, LI YUANYUAN, XU BING - CN110646483, 2020
The invention provides a nano immunosensor for detecting penicillin G residues in a dairy product based on a double-layer lipid membrane and a preparation method of the nano immunosensor. The nano immunosensor is composed of a working electrode, the double-layer lipid membrane, Ag@Au core-shell nanoparticles and a penicillin G antibody. The nano immunosensor has the advantages of being simple...

Nanoparticle based simple electrochemical biosensor platform for profiling of protein-nucleic acid interactions 6
Yifan Dai, Liang-Yuan Chiu, Yongkun Sui, Quanbin Dai, Srinivasa Penumutthu, Niyati Jain, Liming Dai, Christian A. Zorman, BL... - 2019
The analysis of protein-nucleic acid interactions is essential for biophysics related research. However, simple, rapid, and accurate methods for quantitative analysis of biomolecular interactions are lacking. We herein establish an electrochemical biosensor approach for protein-nucleic acid binding analysis. Nanoparticle based sensors are fabricated by highly-controlled inkjet printing followed by plasma conversion...

BIOSENSOR FOR DIAGNOSING ALZHEIMER S DISEASE USING RAYLEIGH SCATTERING AND COLORIMETRIC ASSAY O... 7
SIM SANGJUN - US20190338360, 2019
The present invention relates to a nanoplasmonic sensor based on gold nanoparticle to which an antibody or an aptamer binds, the antibody or the aptamer recognizing Aβ 1-40, Aβ 1-42, and τ protein, which are Alzheimer's disease onset markers that are present in blood, and a multi-detection method of Alzheimer's disease using Rayleigh scattering phenomenon and colorimetric assay of the sensor. The present...

NANOPARTICLE SENSOR HAVING A NANOFIBROUS MEMBRANE SCAFFOLD 8
ZHONG CHUAN-JIAN, POLIKS MARK D, HSIAO BENJAMIN S, KANG NING, YAN SHAN, LI JING, SHAN SHIYA... - US201900038... - 2019
Nanoparticle-fibrous membrane composites are provided as tunable interfacial scaffolds for flexible chemical sensors and biosensors by assembling gold nanoparticles (Au NPs) in a fibrous membrane. The gold nanoparticles are functionalized with organic, polymeric and/or biological molecules. The fibrous membranes may include different filter papers, with one example featuring a multilayered fibrous...

Investigation of a low cost tapered plastic fiber optic biosensor based on manipulation of colloidal gold nanoparticles 9
Sonali Prava Dash, Sumanta Kumar Pattnaik, Sukanta Kumar Tripathy - 2019
We demonstrate a low cost Tapered Fiber Optic Biosensor (TFBS) based on manipulation of colloidal gold nanoparticle in the evanescent field of tapered fiber. The sensor consists of a biconical tapered plastic optical fiber with colloidal gold nanoparticles coated on the tapered region. The strength of evanescent field absorption as a function of gold nanoparticle size is evaluated using Finite Difference Time Domain...

Total 8121 results

All documents Sort by relevance Location only

Application of nanoparticles in electrochemical sensors and biosensors 1
Xiliang Luo, Aoife Morrin, Anthony J. Killard, Malcolm R. Smyth - 2006
The unique chemical and physical properties of nanoparticles make them extremely suitable for designing new and improved sensing devices, especially electrochemical sensors and biosensors. Many kinds of nanoparticles, such as metal, oxide and semiconductor nanoparticles have been used for constructing electrochemical sensors and biosensors, and these nanoparticles play different roles in...

fluorescent conjugated polymer nanodot and sensor including the same and magnetic nanoparticle 2
이학용, 김대준 - KR20160040881, 2016
The present invention relates to polymer nanoparticles comprising a conjugated compound, to a chemical sensor using the same and magnetic nanoparticles, and to a biosensor and, more specifically, to polymer nanoparticles in which specific polypeptide is surrounded, to a sensor comprising the same and magnetic nanoparticles in which amine is introduced, and which has a positive charge, and to a method fo...

A colorimetric gold nanoparticle biosensor: effect of particle size on sensitivity 3
Nidhi Nath, Ashutosh Chilkoti - 2002
We have previously developed a label-free optical method to study biomolecular interactions in real time at the surface of an optically transparent substrate. The method relies on the change in the absorbance spectrum of a self-assembled monolayer of gold nanoparticles on glass as a function of biomolecular binding at the surface of the immobilized nanoparticles. Here, we report upon optimization of this sens...

Nanoparticle-Based Biobarcode DNA Sensor for the Rapid Detection of pagA Gene of Bacillus Anthracis 4
D. Zhang, Michael J. Anderson, Michael C. Huang, Evangelyn C. Alcocija - 2011
Bacillus anthracis is a bioterrorism agent classified by the Centers for Disease Control and Prevention (CDC). A highly amplified, nanoparticle-based, biobarcode electrochemical biosensor for the rapid detection of pagA gene (accession number = M22589) in Bacillus anthracis is reported in this paper. The biosensor system is mainly composed of two nanoparticles: gold nanoparticles (AuNPs) and...

Magnetically Labeled GMR Biosensor With a Single Immobilized Ferrimagnetic Particle Agent for the Detection of Extr... 5
Ping Zhang, Naganivetha Thiagarajah, Seongtae Bae - 2011
It was numerically and experimentally demonstrated that "one giant magnetoresistance (GMR) biosensor + single ferrimagnetic nanoparticle or micro particle sensor agent" architecture is more technically suitable for the detection of extremely low concentration of biomolecules than the "one GMR biosensor + single superparamagnetic nanoparticle sensor agent" architecture. The large remnant magnetization of a...

DNA and RNA sensor 6
Liu Tao, Lin Lin, Zhao Hong, Jiang Long - 2005
This review summarizes recent advances in DNA sensor. Major areas of DNA sensor covered in this review include immobilization methods of DNA, general techniques of DNA detection and application of nanoparticles in DNA sensor.

Ultrasensitive nanosensor based on gold nanoparticles to detect vascular endothelial growth factor (VEGF) 7
Jairo P. Oliveira, Rp Arruda, Wanderson Keijok, Maria A. Cicilini, Breno Valentim Nogueira, Mcc Guimaraes, Adilson R. Prado... - 2015
We report on the use of new biosensor that enable a surface Plasmon resonance (SPR) sensor to detect VEGF in tissue extracts and cell lysates. This sensor consist of gold nanoparticles functionalized with antibodies anti-VEGF. To analyze the optical properties and their sensing ability was held optical absorption experiments in band plasmon resonance. We demonstrate that this approach makes it possible...

Advances in Giant Magnetoresistance Biosensors With Magnetic Nanoparticle Tags: Review and Outlook 8
Shan X. Wang, Guansheng Li - 2008
We present a review of giant magnetoresistance (GMR) spin valve sensors designed for detection of magnetic nanoparticles as biomolecular labels (nanotags) in magneto-nano biodetection technology. We discuss the intricacy of magneto-nano biosensor design and show that as few as approximately 14 monodisperse 16-nm superparamagnetic nanoparticles can be detected by submicron spin valve sensors at room...

Sensors and biosensors based on magnetic nanoparticles 9
Teresa A.P. Rocha-Santos - 2014
Magnetic nanoparticles (MNPs) have attracted a growing interest in the development and fabrication of sensors and biosensors for several applications. MNPs can be integrated into the transducer materials and/or be dispersed in the sample followed by their attraction by an external magnetic field onto the active detection surface of the (bio)sensor. This review describes and discusses the recent applications of...

Total 8121 results

Example [Step 7]

- Having created a satisfactory number of interesting scientific papers and patents, stop the session and have a look at your results
- Titles and abstracts of the search results should be read for the first level of screening
- Once most of the relevant prior arts have been shortlisted, their citations can be checked to discover more results around the shortlisted ones
- If you are not sure about the completeness of your results, repeat your search procedure by defining new keywords as described in steps 4 & 5
- **percipio**<BigData> specialists are glad to support you any time (info@percipio-big-data.com)

Example [Step 8]

percipio<BigData> offers a lot of additional features.
Refer to the manual on the website or contact us.



Recommended Links

- **Prior Art Searching**
<https://www.epo.org/learning/materials/inventors-handbook/novelty/searching.html>
- **Prior Art Search: Everything you need to know**
<https://www.greyb.com/prior-art-search/>
- **The Importance of Patent Searching Prior to Filing**
<https://ip.com/blog/importance-patent-searching-prior-filing/>
- **Artificial intelligence: Simplifying the process of prior art patent search**
<https://blog.ipleaders.in/artificial-intelligence-simplifying-process-prior-art-patent-research/>
- **Patenting an idea: importance of a prior art search**
<https://www.lexology.com/library/detail.aspx?g=af99d61d-b2ab-4e64-9325-48ebe205ddc1>
- **Percipio Instruction Manual**
https://percipio-big-data.com/files/percipio_user_manual.pdf

That's by far not all

Based on your private database you may expand your research by further built-in functionalities.

- Evaluation of technology maturity
- Identification and location of experts in technologies of interest
- Performing dynamic searches based on pre-defined technologies
- Exploring of “unknown unknowns” by using the “frequency versus correlation” algorithm
- A “news button” provides you with the latest news about and around your technology of interest
- Classic search of patents and scientific articles, prior art search
- and many more

Don't hesitate and go for a trial ...

<https://percipio-big-data.com/>

