

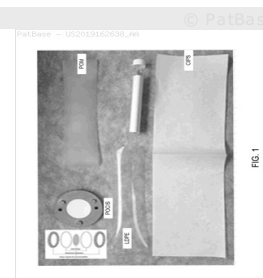
1) Family number: 67179053 (US2019162638A)

PASSIVE SAMPLER AND METHODS OF MAKING

Abstract: Source: US2019162638A Described herein are passive samplers, making of such samplers, and methods of use. In an example embodiment, a passive sampling membrane comprises, for example, a continuous mesoporous sequestration media having a sequestration phase and a support membrane configured to support the sequestration phase. The sequestration phase may include a hydrophobic region and a hydrophilic region. The continuous mesoporous sequestration media may be configured to simultaneously sequester polar and non-polar organic substances.

Probable Assignee: UNIV NORTH CAROLINA STATE

Earliest Publication Date: 20171012



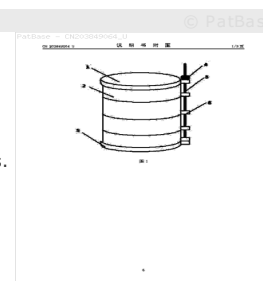
2) Family number: 57452076 (CN203849064U)

COMBINED ATMOSPHERIC PARTICULATE DRY PRECIPITATION PASSIVE SAMPLING BOX

Abstract: Source: CN203849064U The utility model discloses a combined atmospheric particulate dry precipitation passive sampling box, comprising a base, at least two filter membrane boxes and a fixing shaft, wherein the fixing shaft is fixed on the base; a fixing sheet is arranged at one end of each filter membrane box; a fixing axle hole is formed in each fixing sheet; the filter membrane boxes sequentially penetrate through the fixing shaft through the fixing axle holes. The sampling box disclosed by the utility model is simple in structure and convenient to use, and a plurality of parallel samples can be simultaneously collected.

Probable Assignee: UNIV NANJING INF SCI AND TECH

Earliest Publication Date: 20140924



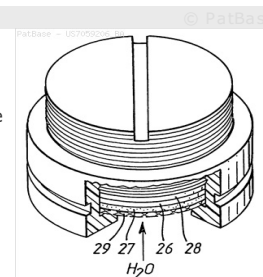
3) Family number: 15298109 (US7059206B)

AQUATIC PASSIVE SAMPLING DEVICE AND METHODS FOR ITS USE

Abstract: Source: US7059206B An aquatic passive sampling device is disclosed comprising a diffusion-limiting membrane and a receiving phase itself comprising an immobilised solid phase material supported by a solid support. The solid support and membrane features enable the device to be adapted for use for continuously monitoring a variety of micropollutants, including polar organic, non-polar organic and inorganic analytes. Furthermore, the analytes may be collected by short column extraction rather than batch extraction.

Probable Assignee: OF PORTSMOUTH UNIV

Earliest Publication Date: 20010301



4) Family number: 59755113 (CN104772127A)

PRODUCTION METHOD OF CARBON FIBER CLOTH SURFACE MOLECULAR IMPRINTING PASSIVE SAMPLING MEMBRANE FOR ORGANIC POLLUTANTS IN WATER ENVIRONMENT

Abstract: Source: CN104772127A The invention discloses a production method of a carbon fiber cloth surface molecular imprinting passive sampling membrane for organic pollutants in water environment. The method comprises the following steps: removing a pasting agent from the surface of a carbon fiber cloth, silanizing the surface of the carbon fiber cloth, and carrying out thermal initiation to realize the effective support of a molecular imprinting substance on the surface of the carbon fiber cloth. The above obtained product can be used to passively collect the organic pollutants in sewage. The surface molecular imprinting substance has construction predetermination property and special identity, and corresponding molecular imprinting substances can be prepared according to the difference of the kind of monitored pollutants, so the selectivity of a passive sampler is improved, and the environment matrix interference problem of traditional passive samplers is effectively reduced. The sampling membrane adopting the carbon fiber cloth with high mechanical strength and light mass as a carrier can be directly exposed to water, so the mass transfer uniformity of target pollutants in the passive enrichment process is improved, thereby the precision of a passive sampling device is improved.

Probable Assignee: UNIV NANKAI

Earliest Publication Date: 20150715

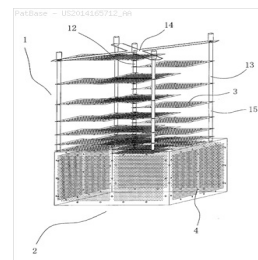
5) Family number: 53560136 (US2014165712A)

GRADUALLY-ASCENDING SPIRALED PASSIVE SAMPLER FOR MEASURING SEDIMENT-WATER DIFFUSION FLUX OF ORGANIC POLLUTANTS

Abstract: Source: US2014165712A The present invention discloses a gradually-ascending spiraled passive sampler for measuring sediment-water diffusion flux of organic pollutants, which comprises a sediment pore-water sampler and a water sampler arranged above the sediment pore-water sampler, wherein a plurality of sediment sampling units are vertically arranged in the sediment pore-water sampler, and the water sampler is provided with a plurality of water sampling units arranged transversely along the vertical direction in sequence.

Probable Assignee: GUANGZHOU INST OF GEOCHEMISTRY

Earliest Publication Date: 20130417



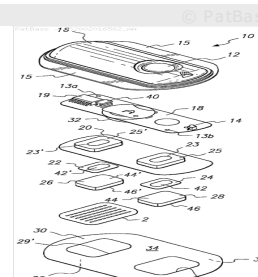
6) Family number: 28172141 (US2002016562A)

DEVICE AND METHOD FOR ENHANCING TRANSDERMAL FLUX OF AGENTS BEING DELIVERED OR SAMPLED

Abstract: Source: US2002016562A A percutaneous agent delivery or sampling device comprising a sheet having a plurality of microblades for piercing and anchoring to the skin for increasing transdermal flux of an agent and for improving the attachment of the device to the skin.

Probable Assignee: ALZA CORP

Earliest Publication Date: 19971224



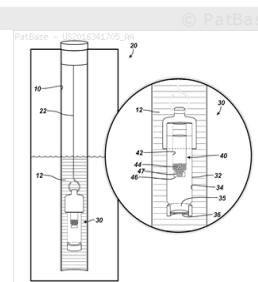
7) Family number: 64050203 (US2016341705A)

LONG-EXPOSURE, TIME-INTEGRATED SAMPLER FOR GROUNDWATER OR THE LIKE

Abstract: Source: US2016341705A A system, device, and method quantitatively measure average concentrations of target constituents (e.g., volatile organic compounds (VOCs)) in an ambient fluid (e.g., groundwater, surface water, air, etc.) over an extended period of time. The system uses a passive device having an outer equilibration chamber and an inner kinetic sampler. The device is placed in an ambient fluid for a specified period of time, wherein the target constituent(s) rapidly diffuse through a high-permeability membrane into the fluid-filled equilibration chamber. From there, the target constituents are taken up by an uptake rate the kinetic sampler that is configured to be less than an equilibration rate of the equilibration chamber.

Probable Assignee: GSI ENVIRONMENTAL INC

Earliest Publication Date: 20161124



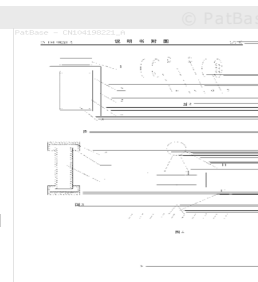
8) Family number: 57976227 (CN104198221A)

AQUATIC PLANT GREASE-CELLULOSE ACETATE COMPOSITE SEMIPERMEABLE MEMBRANE TYPE BIONIC PASSIVE SAMPLING DEVICE

Abstract: Source: CN104198221A The invention relates to an aquatic plant grease-cellulose acetate composite semipermeable membrane. Inexpensive and protogenetic aquatic plant grease is used as a main raw material, and highly hydrophilic cellulose acetate is used as an outer membrane material to prepare the aquatic plant grease-containing semipermeable membrane which has the advantages of uniform grease dispersion, large specific area and integrated structure. The balance time required for collection of hydrophobic organic pollutants in a water body can be shortened greatly, and costs of raw materials can be reduced significantly. The invention also provides a preparation tool and a preparation method for preparation of the aquatic plant grease-cellulose acetate composite semipermeable membrane. In addition, the invention provides a supporting external device suitable for in-situ sampling of organic pollutants in lakes, rivers and other water bodies. The simulation of aquatic plants can be realized for in-situ, accurate, convenient and low-cost monitoring of organic pollutants in water bodies.

Probable Assignee: NANJING INST GEOGRAPHY AND LIMNOLOGY CAS

Earliest Publication Date: 20141210



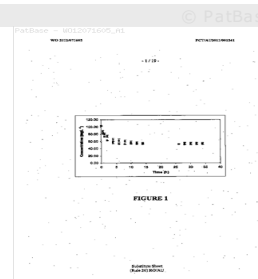
9) Family number: 51258270 (WO12071605A1)

PROCESS FOR PREPARING GOLD NANOPARTICLES

Abstract: The present invention generally relates to the field of nanoparticle formation and in particular to processes which generate gold nanoparticles on the surface of a polymer substrate. The invention particularly relates to processes for preparing monolayers of gold nanoparticles on the surface of polymer inclusion membranes (PIMs), and PIMs with gold nanoparticles deposited on the surface thereof.

Probable Assignee: UNIV MELBOURNE

Earliest Publication Date: 20120607



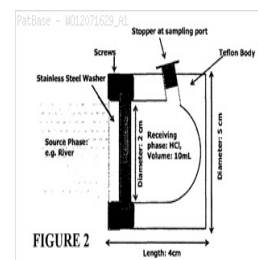
10) Family number: 51270274 (WO12071629A1)

DEVICE AND PROCESS FOR PASSIVE SAMPLING

Abstract: The present invention generally relates to the field of monitoring or analysing an aqueous system (both water or sediment) for analytes and in particular to processes and devices for sampling and analysing the concentration or levels of specific analytes or solutes in an aqueous system such as a natural water system (e.g., rivers, ponds, etc) or industrial effluent streams. The analytes or solutes may or may not be pollutants of said aqueous systems. The sampling device comprises a polymer inclusion membrane or a composite polymer inclusion membrane.

Probable Assignee: UNIV MELBOURNE

Earliest Publication Date: 20120607



11) Family number: 15752321 (JP2001296216A)

PASSIVE SAMPLER FOR COLLECTING CARBONYL COMPOUND

Abstract: Source: JP2001296216A PROBLEM TO BE SOLVED: To provide a passive sampler for collecting a carbonyl compound, capable of simply and efficiently collecting the carbonyl compound without requiring suction action by a pump or the like. SOLUTION: A membrane-like carrier contains a cation exchange body holding a derivative agent for the carbonyl compound.

Probable Assignee: SUMIKA CHEM ANALYSIS SERVICES

Earliest Publication Date: 20011026

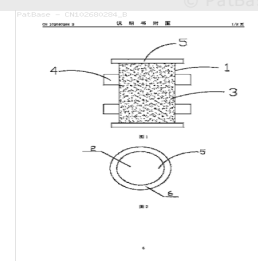
12) Family number: 51975432 (CN102680284A)

PASSIVE SAMPLING DEVICE FOR PERSISTENT ORGANIC POLLUTANTS (POPS) IN AIR

Abstract: Source: CN102680284A The invention relates to a passive sampling device for persistent organic pollutants (POPs) in air. The passive sampling device comprises a stainless barrel, wherein top covers are arranged on upper and lower ends of the stainless barrel; sampling fillers are arranged in the stainless barrel; low-density polyethylene films and stainless outer rings are arranged on the top covers; each low-density polyethylene film is fixed on each stainless outer ring; and the thickness of each low-density polyethylene film is 65 to 90 μm . The POPs in the air or waste air can freely pass through the film, particulate matters in the environment can be prevented from being contacted with the fillers, and gaseous POPs in the ambient air can be acquired, so that the subsequent extraction and purification of a sample are simplified; each low-density polyethylene film is fixed to each top cover, so that the passive sampling device has the advantages that the gas flow volume is larger, and the sampling speed is quicker compared with an X-ray diffraction (XRD) resin sampler; due to the sealed device, the influence of natural environment on the device is small; and the device is not required to be arranged in a special device compared with the conventional polyurethane foam (PUF) passive sampling device and the conventional semi-permeable membrane device (SPMD) sampler, so that the device can be simply and conveniently used.

Probable Assignee: UNIV DALIAN JIAOTONG

Earliest Publication Date: 20120919



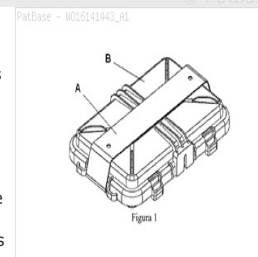
13) Family number: 63565448 (WO16141443A1)

KIT COMPOSED OF SAMPLERS FOR COLLECTING AIR CONTAMINANTS/POLLUTANTS

Abstract: The system consists of a series of passive samplers (APs) which sense up to 16 air contaminants or pollutants simultaneously by a diffusion process. The APs included in the kit are designed for collecting: sulphur dioxide (SO_2), nitrogen dioxide (NO_2), ozone (O_3), the sum of nitrogen monoxide and dioxide (NO_x), ammonia (NH_3), formaldehyde and acetaldehyde (HCHO and CH_3CHO), organic acids: formic and acetic acids (HCOOH and CH_3COOH), inorganic acids: sulphuric, hydrochloric and nitric acids (H_2SO_4 , HCl and HNO_3), and volatile organic compounds: benzene, toluene, ethylbenzene and xylenes (BTEX). The kit is formed by a rectangular polypropylene box containing cylindrical samplers with an inner diameter of 21 mm and a height of 12 mm, except for the AP for BTEX, which is 14 mm high. The APs have a movable portion that holds the means for immobilising the gas of interest in a filter impregnated with a specific reagent, with a teflon membrane and a stainless steel screen on the air inlet. In the AP for BTEX, the immobilising means is composed of activated carbon. The exposure time of the kit comprising APs can vary from three to 30 days, and yields integrated average atmospheric concentrations during this time, after chemical analysis of the immobilised species.

Probable Assignee: EDZA PLANEJAMENTO CONSULTORIA E INFORMATICA EIRELI

Earliest Publication Date: 20160915

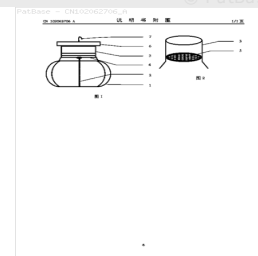


14) Family number: 48940458 (CN102062706A)

PASSIVE SAMPLING DEVICE FOR ATMOSPHERIC PARTICULATES

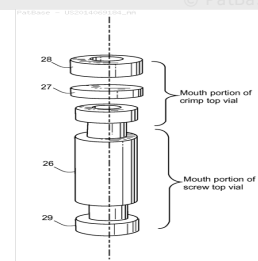
Abstract: Source: CN102062706A The invention provides a passive sampling device for particulates in the atmosphere, belonging to the technical field of atmospheric monitoring. The device comprises a wind turbine, a sampling tank and a rainproof top cover, wherein the sampling tank is fixed at an air low voltage region at the upper end of the wind turbine by virtue of a support and is vertically arranged, the upper part of the sampling tank is open, a base plate is uniformly provided with holes and is used for containing sampling filter membranes, and the rainproof top cover is fixed at the top of the sampling tank. The principle of air convection in the natural world is utilized to the design and combination of all the parts in the device provided by the invention smartly, any air convection in parallel direction is utilized to generate a vertical negative pressure at the sampling tank, thus particulates in the atmosphere are adsorbed onto the filter membrane and the device can be placed in the field for sampling; and the average daily collection capacity of the particulates is adopted as a data expression form for the device, and the passive sampling efficiency and the quantitative relation of the average daily collection capacity and the passive sampling efficiency can be obtained by combining the data expression form with active sampling, thus the concentration level of the particulates in the ambient atmosphere can be calculated according to the data of the average daily collection capacity.

Probable Assignee: UNIV BEIJING

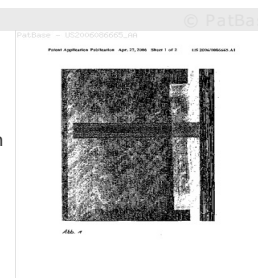


15) Family number: 55978463 (US2014069184A)**PASSIVE SAMPLING DEVICE AND METHOD OF SAMPLING AND ANALYSIS**

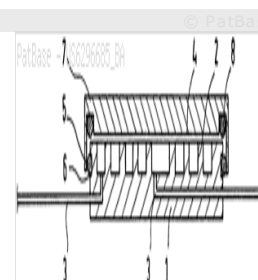
Abstract: Source: US2014069184A The invention provides a device and method to quantitatively measure concentrations of volatile organic compound vapors below the ground surface using a preferably "fully" passive device that is placed in a drilled or bored hole for a specified period of time, wherein the sampler constrains the uptake rate to match values that minimize or eliminate the starvation effect and provide acceptable sensitivity for most soil types as calculated via mathematical models.

Probable Assignee: GEOSYNTEC CONSULTANTS INC**Earliest Publication Date:** 20140313**16) Family number: 29388479** (US2006086665A)**METHOD FOR THE ACCELERATED DIALYTIC RECOVERY OF FOREIGN SUBSTANCES FROM PASSIVE COLLECTORS CONSISTING OF SEMIPERMEABLE MEMBRANES HAVING DIFFERENT DIMENSIONS**

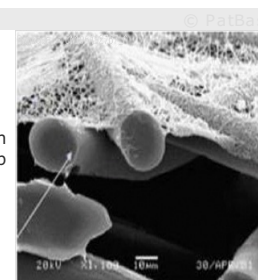
Abstract: Source: US2006086665A The invention relates to a dialysis method of recovering foreign substances, particularly low-molecular weight inorganic and/or organic substances, from semipermeable membrane of varying length and dimensions, using a PLE (pressurized liquid extraction) apparatus. The membranes are preferably in the form of a tube, for example semipermeable membrane devices (SPMDs) which, in the form of passive samplers, accumulate foreign substances/pollutants on an absorbent or adsorbent.

Probable Assignee: HELMHOLTZ ZENTRUM FÜR UMWELTFORSCHUNG GMBH UFZ**Earliest Publication Date:** 20031106**17) Family number: 13444507** (US6296685B)**DIFFUSION COLLECTOR FOR GASEOUS ANALYTES CONTAINED IN FLUID PHASES**

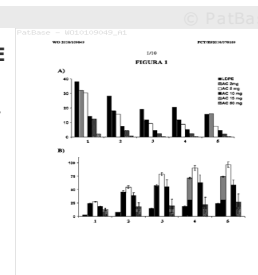
Abstract: Source: US6296685B A diffusion collector for analytes contained in liquid phases includes a planar housing which has channel-like cavities. A collecting phase is inserted into these channel-like cavities. The collecting phase is covered by a diffusion membrane through which the analyte can pass. The housing has at least one incoming pipe and one outgoing pipe allowing the fluid medium to pass through the channel-like cavities perpendicular to the direction of diffusion.

Probable Assignee: CAMMAN KARL**Earliest Publication Date:** 19980924**18) Family number: 65167540** (CN106492767A)**ADSORPTION MATERIAL USED IN PASSIVE SAMPLER AND PREPARATION METHOD THEREOF**

Abstract: Source: CN106492767A The invention belongs to the technical field of novel materials and especially relates to an adsorption material used in a passive sampler and a preparation method thereof. The adsorption material used in the passive sampler is prepared from a PUF membrane and a composite fiber filtering membrane which is produced in an electrostatic spinning technology. The adsorption material is 93-99.6 percent in filtering efficiency on POPs, pressure drop being 25-350 Pa. The invention particularly includes the preparation method of the adsorption material. The method includes the steps of: preparing a spinning solution, and electrostatic-spinning the spinning solution to produce the composite fiber filtering membrane supporting nano fibers in different appearances, and attaching the PUF membrane onto the composite fiber filtering membrane to obtain the adsorption material. Pore diameter in the surface of the PUF membrane is reduced, so that wind-drag coefficient is effectively reduced and efficiency of intercepting gas-phase pollutants or particle pollutants in air is greatly improved. In addition, production cost is greatly reduced.

Probable Assignee: INST OF URBAN ENV IUE CHINESE ACAD OF SCIENCES**Earliest Publication Date:** 20170315**19) Family number: 46982549** (WO10109049A1)**PROCEDURE FOR THE PASSIVE SAMPLING OF ATMOSPHERIC CONTAMINANTS BY THE "VERAM" DEVICE**

Abstract: Procedure for the passive sampling of atmospheric contaminants by means of the "VERAM" device. The present invention describes a versatile, easy and rapid procedure for the determination of organic contaminants in air by a passive-sampling device comprising a flat semipermeable membrane of polymeric-tube type of variable size filled with a solid phase or mixture of solid phases (VERAM). The utilisation of the said device ensures the direct determination of contaminants adsorbed through application of the technique of thermal desorption followed by the technique of injection into headspace by gas chromatography and mass spectrometry (HS-GC-MS). Furthermore, the present invention describes the development of mathematical models correlating the quantity absorbed by the sampler with the average concentration of contaminant in the air during the sampling period.

Probable Assignee: UNIV VALENCIA**Earliest Publication Date:** 20100927

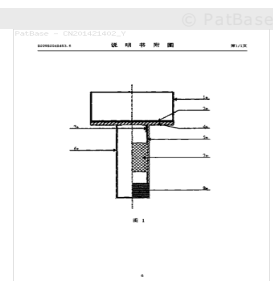
20) Family number: 44601551 (CN201421402Y)

SIMPLE DEVICE USED FOR SAMPLING OF ORGANIC POLLUTANT IN ATMOSPHERIC DEPOSITION

Abstract: Source: CN201421402Y The utility model discloses a simple device used for sampling of organic pollutant in the atmospheric deposition. The simple device comprises a quartz filter membrane and PUF sampling foam, and is characterized in that a sampling device consists of an upper part and a lower part which are communicated and connected with each other; the upper part is a Buchner funnel; the lower part is a glass cylinder; the bottom of the glass cylinder is communicated with the atmosphere; the quartz filter membrane is arranged at the bottom of the Buchner funnel; and the PUF sampling foam is arranged in the glass cylinder. The device is wholly supported by a triangular wood support. The device is not provided with an air pump, the structure is simple, the power supply is not needed, and the passive samplings carried out by means of atmospheric transmission and rainfall. The dry/wet particle phase collection and solution phase pollution collection to be analyzed and detected can be obtained by taking out a crossed glass strip 2 and loosening gauze 8. The simple device is applicable to be arranged at the sampling points with wide range, and can meet the sampling purpose of remote transmission research and monitoring of the organic pollutant in the atmospheric deposition.

Probable Assignee: NANJING INST SOIL SCI CAS

Earliest Publication Date: 20100310



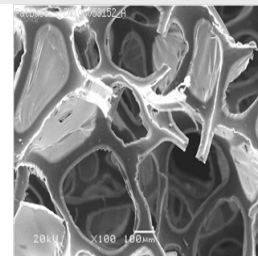
21) Family number: 63852565 (CN106053152A)

PASSIVE SAMPLING DEVICE FOR SAMPLING LONG-LASTING ORGANIC POLLUTANTS IN ATMOSPHERE

Abstract: Source: CN106053152A The invention relates to a passive sampling device for sampling long-lasting organic pollutants in the atmosphere, and belongs to the technical field of environmental atmosphere and waste gas monitoring. The passive sampling device comprises a cylinder, a passive sampling material rack, and a cylinder cover. The wall and bottom of the cylinder are both provided with a plurality of holes, which are uniformly arranged. The passive sampling material rack is hung in the cylinder. The top of the passive sampling material rack is provided with a filter membrane. A passive sampling material is arranged in the passive sampling material rack. The top of the cylinder is connected to the cylinder cover. The passive sampling material is prepared by loading polyethylene glycol 20M with a high absorption performance on polyurethane foams, the acting force between the passive sampling material and hexabromocyclododecane/short chain chlorinated paraffin is enhanced therefore; and compared with the conventional polyurethane foam passive sampling device, the provided passive sampling device has the advantages that the sampling capacity is large, the linear range is wide, and the detectable rate of hexabromocyclododecane in a gas phase and short chain chlorinated paraffin with a high carbon number and high chlorinated rate is increased.

Probable Assignee: UNIV DALIAN JIAOTONG

Earliest Publication Date: 20161026



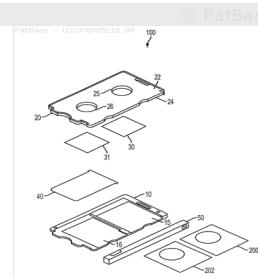
22) Family number: 41697586 (US2008085218A)

MOISTURE-PROOF, GAS PERMEABLE HOLDER FOR PASSIVE SAMPLERS

Abstract: Source: US2008085218A A holder for retaining a passive sampler and method of monitoring a user's exposure to a gas in ambient air using a passive sampler holder are provided. The holder includes a moisture-proof housing forming at least one hole in a first surface, and a moisture-proof, gas-permeable membrane position over the at least one hole to expose at least one compartment formed in the housing to accept a passive sampler to ambient air through the moisture-proof, gas-permeable membrane.

Probable Assignee: GARY W SHORT

Earliest Publication Date: 20080410



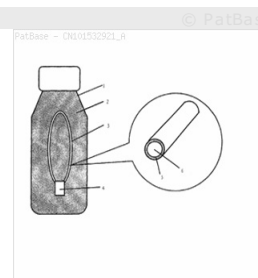
23) Family number: 43805608 (CN101532921A)

PASSIVE SAMPLING DEVICE WITH HOLLOW FIBER MEMBRANE

Abstract: Source: CN101532921A The invention provides a passive sampling device with a hollow fiber membrane. The passive sampling device comprises a passive sampler and a sampling bottle, wherein the passive sampler is arranged in the sampling bottle and is the hollow fiber membrane with the head and the tail connected in a closed manner; micropores in the wall of the hollow fiber membrane is full of liquid membrane solvent and the inner cavity of the hollow fiber membrane is full of acceptable phase. The passive sampling device is used for collecting the samples and finishing the pretreatment of an object to be tested in the collected samples before analysis. The passive sampling device has simple operation and saves time for collecting and gathering the object to be tested in the sample; in addition, after finishing sampling, the passive sampling device can test the content of the object to be tested in the sample without separating the object to be tested from the passive sampler; meanwhile, the hollow fiber membrane, the liquid membrane solvent and the acceptable phase are all commercial materials with low price and manufacturing cost and are disposable.

Probable Assignee: RES CT ECO ENVIRONMENTAL SCIEN

Earliest Publication Date: 20090916



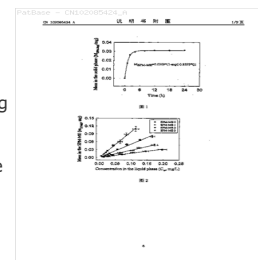
24) Family number: 49065609 (CN102085424A)

SEMIPERMEABLE MEMBRANE-BASED MICRO-EXTRACTION DEVICE

Abstract: Source: CN102085424A The invention discloses a novel semipermeable membrane-based micro-extraction method (SPM-ME) of passive sampling technology for measuring free dissolved hydrophobic pollutants in a complex environmental medium such as soil interstitial water and the like and providing a technical support for ecological risk evaluation and pollution repair of a polluted environment. A semipermeable membrane micro-extraction device is prepared by dissolving glycerol trioleate into trichloromethane to prepare solution of different concentrations, then adding a proper amount of glycerol trioleate-trichloromethane solution into a semipermeable membrane bag, volatilizing the trichloromethane solvent and thermally sealing a semipermeable membrane. The research results show that the semipermeable membrane micro-extraction device provided by the invention can effectively and accurately measure the concentration of the pollutants in the interstitial water. Meanwhile, the enrichment amount of the pollutants in the system is 1 percent less than that of the original system, so the technology is a non-exhausted micro-extraction technology. The device has good reproducibility and reliability on the measurement results of the free dissolved hydrophobic organic substances in the complex environment system.

Probable Assignee: UNIV NANKAI

Earliest Publication Date: 20110608



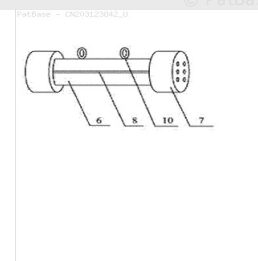
25) Family number: 52997613 (CN203123842U)

PREPARATION INSTRUMENT OF AQUATIC VEGETABLE BUTTER-CELLULOSE ACETATE COMPOSITE SEMIPERMEABLE MEMBRANE AND BIONIC PASSIVE SAMPLING DEVICE APPLYING SAME

Abstract: Source: CN203123842U The utility model relates to a preparation instrument of an aquatic vegetable butter-cellulose acetate composition semipermeable membrane and a bionic passive sampling device applying the same. The preparation instrument comprises a scraper and a tempered glass plate, wherein the upper surface of the tempered glass plate is provided with a rectangular glass groove, and the lower edge of the scraper can be erected on two side edges of the rectangular glass groove; and a matched external device of the preparation instrument comprises a stainless steel cylinder and stainless steel screw caps at two ends, wherein the screw caps are in threaded connection with the stainless steel cylinder and provided with small holes, and a stainless steel net is welded inside each screw cap; and the stainless steel cylinder is longitudinally and averagely divided into two halves, and the aquatic vegetable butter-cellulose acetate composite semipermeable membrane is arranged between the two halves. As cheap and protogenetic aquatic vegetable butter is adopted as a raw material, the cost of the raw material is greatly reduced, and the purpose of simulating aquatic plants to accurately and conveniently monitor organic pollutants in the water body in situ and at a low cost can be achieved.

Probable Assignee: NANJING INST GEO AND LIMNOLOGY

Earliest Publication Date: 20130130



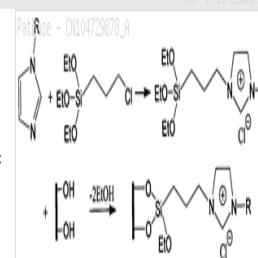
26) Family number: 59571701 (CN104729878A)

NOVEL PASSIVE WATER BODY SAMPLING TECHNIQUE BASED ON SUPPORTED IONIC LIQUID

Abstract: Source: CN104729878A The invention discloses a novel passive sampling device and a related technique for monitoring trace organic pollutants in a water body with a supported ionic liquid, namely silica-gel-supported dodecylimidazole, as a receiving phase. According to the device, supported ionic liquid particles are wrapped with a polyether sulfone membrane; the membrane is fixed by a ring-shaped organic glass flange plate and a silica gel gasket; the device can be suspended in water; passive collection on the trace organic pollutants dissolved in water is carried out; after sampling is ended, cleaning and freeze-drying treatment on a sampler are carried out; the supported ionic liquid receiving phase is shifted out; fractional extraction is carried out with methanol containing weak base by a solid-phase extraction device; and an extract liquid is concentrated and then is subjected to instrumental analysis. A simulation experiment result proves that the sampling device is capable of effectively collecting the organic pollutants in a water solution, for example, the concentration of perfluoro caprylic acid and perfluorooctane sulfonate in a sampler receiving phase linearly increases along with time within a certain period, and the concentration in the receiving phase is 3-4 orders of magnitudes higher than that in a water environment.

Probable Assignee: UNIV NANKAI

Earliest Publication Date: 20150624



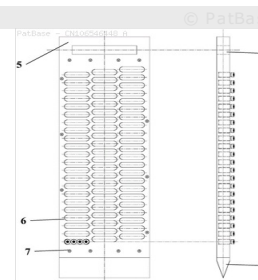
27) Family number: 65284753 (CN106546448A)

SYNCHRONOUS MEASURING SEDIMENT PORE-WATER INORGANIC AND ORGANIC MATTER CONCENTRATION PASSIVE SAMPLER

Abstract: Source: CN106546448A The invention discloses a synchronous measuring sediment pore-water inorganic and organic matter concentration passive sampler, and belongs to the field of environmental research. The synchronous measuring sediment pore-water inorganic and organic matter concentration passive sampler comprises a passive sampling system and a supporting framework. In applications, sampling small bottles are filled with ultrapure water, are preloaded with different chemicals or articles based on the difference of pollutants, are covered with 0.45 m microfiltration membrane, and are sealed with bottle caps provided with middle holes; the sampling small bottles are placed in grooves in the supporting framework; the whole synchronous measuring sediment pore-water inorganic and organic matter concentration passive sampler is immersed into water body sediment vertically under the action of self weight, and is allowed to stand; when balance is achieved, the synchronous measuring sediment pore-water inorganic and organic matter concentration passive sampler and the passive sampling small bottles are taken out from the water body sediment; and the concentrations of nutritive salts, heavy metals, and organic pollutants in water samples in the passive sampling small bottles are measured via corresponding methods, so that synchronous measuring of high resolution ratio sediment-water interface inorganic and organic pollutant concentration is realized.

Probable Assignee: RES CENTER FOR ECO ENVIRONMENTAL SCIENCES CHINESE ACAD OF SCIENCES

Earliest Publication Date: 20170329



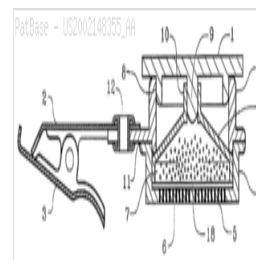
28) Family number: 28322761 (US2002148355A)

PASSIVE SAMPLING BADGE

Abstract: Source: US2002148355A A passive air sampler is designed to facilitate emptying granular or particulate adsorbent from it directly into a thermal desorption tube or other vessel for use in an analytical instrument. The preferred form has an adsorbent container in a conical or funnel-like shape.

Probable Assignee: SKC INC

Earliest Publication Date: 20021017



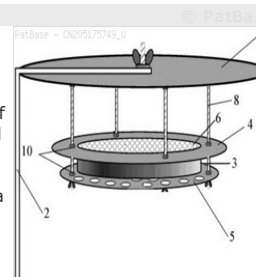
29) Family number: 61673879 (CN205175749U)

PASSIVE SAMPLE THIEF

Abstract: Source: CN205175749U The utility model discloses a passive sample thief. It includes upper cover plate, fixed bolster, fixer and stainless steel ware, the fixer constitute by the the annular clamped board of top and the backup pad of punching of below, be fixed with the stainless steel ware in the backup pad of punching, the top opening of stainless steel ware and the looping pit of the annular clamped inboard suit and fixed connection, the fixed one deck stainless steel meshwork that has cover of opening part of stainless steel ware, stainless steel ware bottom plate are quartz filter membrane bottom plate, upper cover plate, the annular clamped board and the backup pad three that punches through a plurality of dead lever fixed connection, the stainless steel ware in fill and to have the silica wool layer, fixed bolster and upper cover plate fixed connection. The utility model discloses a passive sample thief can the big air -seasoing sedimented particle thing of entrapment, and this big air -seasoing sedimented particle thing can be used for sample's OCEC ratio (carbon ingredient sign), and the coseparation entrapment corresponds the CO2 result for the 14C analysis.

Probable Assignee: GUANGZHOU INST GEOCHEM CAS

Earliest Publication Date: 20160217



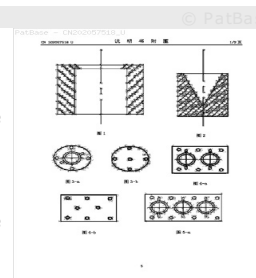
30) Family number: 50029888 (CN202057518U)

PASSIVE SAMPLING DEVICE FOR METAL IONS IN WATER ENVIRONMENT OR WATER IN SOIL PORE SPACES

Abstract: Source: CN202057518U A passive sampling device for metal ions in a water environment or water in soil pore spaces belongs to the field of environmental science and engineering and relates to passive sampling equipment used in water and water bodies in the soil pore spaces, in particular to a feeding device for water in the soil pore spaces. The passive sampling device mainly comprises a main body, a diffusion layer and a combined phase; the main body consists of a sampling container and a bottom board, the sampling container and the bottom board are fixed by screws, and a cylindrical hole is arranged inside the sampling container and internally provided with a cylinder with a conical cavity; the diffusion layer is selected from a dialysis membrane, a fluorine membrane, polyether sulfone, cellulose acetate or mixed cellulose; and the combined phase is selected from sodium polyacrylate or polystyrolsulfon acid. In the utility model, a DGT (diffusive gradients in thin-films) device with a liquid combined phase is convenient to operate; and the precision and accuracy of extracted heavy metal biological effectiveness can be improved.

Probable Assignee: UNIV NORTHEASTERN

Earliest Publication Date: 20111130



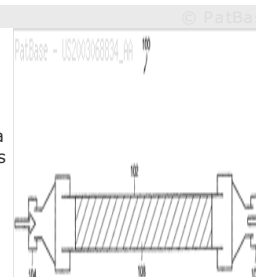
31) Family number: 30129910 (US2003068834A)

SYSTEM AND METHOD FOR DETERMINING AND CONTROLLING CONTAMINATION

Abstract: Source: US2003068834A A system and method for determining and removing contamination recognizes the need to determine contamination caused by a plurality of contaminants which includes refractory compounds, high molecular weight compounds and low molecular weight compounds operating at different rates. The system in accordance with a preferred embodiment of the present invention includes a collection device that emulates the environment of the surfaces of certain optical elements. The method for determining and preferably removing contamination includes maintaining an extended duration sampling time to enable the collection of a desirable mass of high molecular weight compounds. In a preferred embodiment, the collection device is operated past a breakthrough capacity to quantitatively measure high molecular weight compounds and other contaminants.

Probable Assignee: EXTRACTION SYSTEMS INC

Earliest Publication Date: 20030403



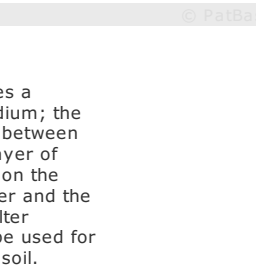
32) Family number: 63213945 (CN105865848A)

IN-SITU PASSIVE SAMPLER FOR WETLAND

Abstract: Source: CN105865848A The invention relates to an in-situ passive sampler for wetland. The sampler comprises a sampling network chamber which is composed of small sampling units, and each sampling unit is filled with sampling medium; the bottom part of the sampling network chamber is connected to a piece of base plate, a layer of sealing gasket is clamped between the sampling network chamber and the base plate, in order to isolate the sampling medium and an external solution; a layer of porous filter membrane is paved on the sampling network chamber, and a sampling window panel is placed and pressed on the porous filter membrane; screws are installed in reserved threaded holes on the base plate, the sampling network chamber and the edge of the sampling window panel, and the base plate, the sealing gasket, the sampling network chamber, the porous filter membrane and the sampling window panel are combined into a set of sampling apparatus. The sampling apparatus can be used for realizing in-situ monitoring of multidimensional spatial distribution of targeted monitoring objects in wetland deposits and soil.

Probable Assignee: INST OF URBAN ENV IUE CHINESE ACAD OF SCIENCES

Earliest Publication Date: 20160817

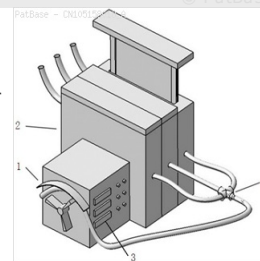


SEMI-PERMEABLE MEMBRANE CONTINUOUS SAMPLING DEVICE FOR PASSIVE SAMPLING OF WATER BODY

Abstract: Source: CN105158018A The invention relates to a semi-permeable membrane continuous sampling device for passive sampling of a water body. The device comprises a flow speed control unit, at least three parallel channel sampling boxes and a temperature control unit, wherein the to-be-sampled water body enters an inlet end of the flow speed control unit through a water supply pipe, an outlet end of the flow speed control unit is connected with an inlet end of a pipe joint, outlet ends of the pipe joint are connected with water inlets of the parallel channel sampling boxes in parallel respectively, and water outlets of the parallel channel sampling boxes are communicated with the outside; a temperature sensor and a heating element are arranged in each parallel channel sampling box, the temperature sensor is used for acquiring the temperature of an internal water body in real time, the heating element is used for heating the internal water body, the temperature sensor sends an acquired temperature value to the temperature control unit in real time, and the temperature control unit displays the received temperature value and controls the heating element to heat the water body in the corresponding parallel channel sampling box to the set temperature according to the temperature value.

Probable Assignee: RES CT ECO ENVIRONMENTAL SCIEN

Earliest Publication Date: 20151216



PASSIVE SAMPLING DEVICE FOR ATMOSPHERIC ORGANIC POLLUTANT

Abstract: Source: CN104697824A The invention relates to a passive sampling device for atmospheric organic pollutant and belongs to the field of atmosphere environment monitoring. The passive sampling device for the atmospheric organic pollutant is aimed to provide a passive sampler featured with fast sampling speed rate, and easiness and convenience in sample processing. According to the technical scheme, the sampling device comprises a sampling material holding bracket, a semi-permeable membrane and sampling material; the sampling material holding bracket is a hollow column body, and a connecting device is arranged at each lateral surface of the hollow column body to form an interlayer between the two lateral surfaces of the hollow column body; the semi-permeable membrane is placed in the interlayer of the sampling material holding bracket; the sampling material is placed in the semi-permeable membrane, and a semi-permeable membrane is arranged between the sampling material and the sampling material holding bracket.

Probable Assignee: ZHEJIANG ZHONGYI TESTING INST CO LTD

Earliest Publication Date: 20150610

