抗渗　除湿　防霉

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Unipa 优尼帕

地下空间 · 智慧环境创造专家

建筑智能电脉冲抗渗除湿防霉系统

BUILDING INTELLIGENT ELECTRIC PULSE ANTI-SEEPAGE
DEHUMIDIFICATION AND ANTI-MILDEW SYSTEM

优尼帕智能科技有限公司

Our Mission

Providing the most advanced solutions
for the intelligent development of
global underground space
Creating the First Brand in the Field of
Intelligent Environment
of Underground Space

为全球地下空间智慧发展提供最先进的解决方案

打造地下空间智慧环境领域第一品牌

地 下 空 间 智 慧 环 境 创 造 专 家

Underground space intelligence environment creation expert

Unipa 优尼帕

地下空间 · 智慧环境创造专家

公司致力于解决地下空间结构渗漏、潮湿发霉、空气浊臭等问题，提供整套地下空间智能科技的解决方案。

2011年，团队引进德国德累斯顿工业大学Dewen博士团队研发的低电压多脉冲防渗技术，并依托华中科技大学强大的科研力量，研发出新一代高效率、低能耗的建筑智能电脉冲抗渗防霉系统，广泛应用于国内外地下工程，成功解决了地下空间渗漏、结露、潮湿、发霉，空气质量等问题，使其长期保持干爽舒适、空气清新状态。

2016年，优尼帕智能科技有限公司成立，依托国家千人计划专家团队，打造重点领军型创新企业，面向全球推广运营“地下空间 · 智慧环境系统”。我们秉持客户至上，服务至上的服务理念；思辨慎行的经营理念；怀揣跻身世界500强的愿景，用科技铸造人类美好生活！

优尼帕智能科技有限公司作为尊重科技，自主研发生产的创新型公司受到政府高度重视与大力支持，获得了多项荣誉称号。优尼帕地下空间 · 智慧环境系统已申报多项国家发明专利，产品已通过国家3C认证，国际（欧盟）ROHS认证、欧盟CE认证、美国FCC认证、产品保险公司承保、参与行业标准CECS编制。

Underground Space · Intelligent Environment Creation Expert

Unipa focuses on solving the problems of underground space, such as leakage, dampness, and bad air quality and provid the solution of these problems using our intelligent technoloty.

In 2011, the company introduced anti dehumidifying technology of low voltage multi pulse by the Germany Dr. Dewen' research group of the Dresden University Technology. We developed a new generation of high efficiency, low energy consumption of the intelligent anti-seepage dehumidification system, relying on a strong scientific research support from Huazhong University of Science and Technology research team, which is now widely used in under-ground engineering both here and abroad to keep a dry, comfortable and fresh air condition.

In 2016, Younipa Intelligent Technology Co., Ltd. was established, relying on the national 1000-person project team of experts, to build key leading innovative enterprises, and to promote the operation of "Underground Space. Intelligent Environment System" globally. We adhere to the customer first , service first service concept; speculative and prudent business philosophy; cherish the vision of ranking in the world's top 500, with science and technology to create a better life for mankind!

As an innovative company respecting science and technology, Unipa Intelligent Technology Co., Ltd. has been highly valued and strongly supported by the government, and has won many honorary titles. Underground Space. Intelligent Environment System has declared a number of national invention patents. The products have passed national 3C certification, international (EU) ROHS certification , EU CE certification , US FCC certification , product insurance companies underwrite, and participate in the preparation of industry standard CECS.

Underground Future Development Analysis

地下空间未来的发展分析

1、我国城市地下空间开发利用进入快速增长阶段，"十三五"时期，我国城市地下空间建设量显著增长，年均增速达到20%以上，2017 - 2018年据不完全统计，地下空间与同期地面建筑竣工面积比例17%，之前10%。

2、至2020年新建人防工程使用面积62万平方米，人均使用1平方米

3、到2020年不低于50%的城市完成地下空间开发利用规划编制和审批工作，补充完善城市重点地区控制性详细规划中涉及地下空间开发利用的内容。

4、是开展地下空间普查，推进城市地下空间综合管理信息系统建设。到2020年，不低于50%的城市初步建立包括地下空间开发利用现状、规划建设管理、档案管理等的综合管理系统，有效提升城市地下空间信息化管理能力。

5、是健全地下空间开发利用各项管理制度，完善有关法律法规、标准规范的制定，地下空间开发利用依法管理工作取得较大进展，使管理水平能够适应经济社会发展需要。

1.The development and utilization of urban underground space in China has entered a rapid growth stage. During the 13th Five-Year Plan period, the amount of urban underground space construction in China has increased significantly, with an average annual growth rate of more than 20%. According to incomplete statistics from 2017 to 2018, the proportion of underground space to the completed area of ground buildings in the same period is 17% and the former 10%.

2. By 2020, the new civil air defense project will have an area of 620,000 square meters, with a per capita area of 1 square meter.

3. By 2020, no less than 50% of cities will complete the preparation and approval of underground space development and utilization planning, and supplement and improve the contents of the regulatory detailed planning of key urban areas involving the development and utilization of underground space.

4. To carry out underground space survey and promote the construction of urban underground space integrated management information system. By 2020, no less than 50% of cities will initially establish a comprehensive management system including the status quo of underground space development and utilization, planning and construction management, archives management and so on, so as to effectively enhance the information management ability of urban underground space.

5. Improve the management system of underground space development and utilization, improve the formulation of relevant laws, regulations and standards, and make great progress in the management of underground space development and utilization according to law, so that the management level can meet the needs of economic and social development.

我国最深的地铁线不过地下30米，所以目前看来，浅、表、中层是目前国内地下空间开发的合适深度。

The deepest subway line in China is only 30 meters underground, so it seems that the shallow, surface and middle layers are the appropriate depth for the development of underground space in China.

Urban Underground Space Layout

城市地下空间竖向布局一览表

Unipa 优尼帕

城市地下空间竖向布局一览表			
	0 ~ -15米（浅层）	-15 ~ -30米（次浅层）	-30米及以下（次深层及以下）
城市市政道路下空间	地下道路、人行地道、地下车库、共同沟、地下街	地下河、地下道路（干道）、地下物流设施、基础设施（导水管、高压煤气管等）	地下骨干设施（高压变电站、地下水处理中心等）
城市水域下空间	城市公用的网络、隧道、道路		
城市绿地、广场下部空间	局部区域开发地下休闲、娱乐设施等配套设施	地下公共停车库、地下车站等	地下骨干设施（高压变电站、地下水处理中心等）
建设用地下部空间	地下商业街、办公用房、公共建筑、地下车库、地下泵站、变电站、区域性供暖等	地下车库、地下设施（泵站、变电所）	地下骨干设施（高压变电站、地下水处理中心等）
老城区	储藏、设备用房	市政设施	地下骨干设施（高压变电站、地下水处理中心等）

地下空间未来的发展分析

根据我国城镇化进程和地下空间开发利用发展趋势，"十三五"时期城市地下空间开发利用还将特有相当大的规模（特别是一线、二线城市）。

虽然我国部分城市地下空间开发利用进入迅速发展价段，但是大多数地下空间开发技术处于起步阶段，建设发展需求旺盛但系统性、整体性不足、有关立法和规划定相对滞后，如竣工后结构迎水面渗漏水，潮湿发霉根本解决不了，空气污浊恶臭让健康舒适地下空间生活充满遗憾！

渗水、潮湿、发霉的地下空间，对人生活的健康困扰！

渗水会导致建筑结构寿命，钢筋腐蚀、维护维修成本增加，影响公共建设设施使用；长时间渗水导致装修材料发霉，空气恶臭；并且渗水会直接破坏各种电器设备，造成巨大损失。

地下空间潮湿的原因

管线破裂
Pipeline Rupture

管路老化
Pipeline Aging

地下水的渗入
(地下室潮湿发霉问题的根源)
Groundwater InPltration

地面下沉开裂
Ground Subsidence And Cracking

管路老化、地面下沉、人为破坏导致管路漏水；地下室外部渗水通过结构渗入（结构本是毛细孔状构成），水分子可移动或渗漏；防水层破坏结构下沉开裂，拼接缝脱离。

Pipeline aging, ground subsidence and man-made destruction lead to pipeline leakage; basement external seepage through the structure inPltration (the structure is composed of capillary holes), water molecules can be moved or leaked; waterproof layer destroys the structure subsidence and cracking, splicing joints are separated.

Traditional Solutions

传统解决方案（被动方法）

堵漏
Leakage Stoppage

卷材防水
Coil WaterproOng

防水膜
WaterproOng Membrane

隔空双墙
Diaphragm Double Wall

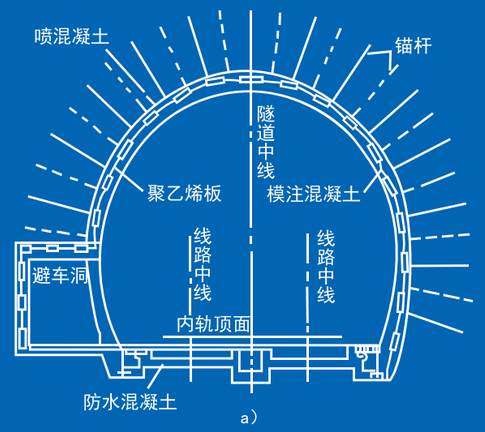
很多人都在抱怨，明明做了多层防水，为什么还会返潮？

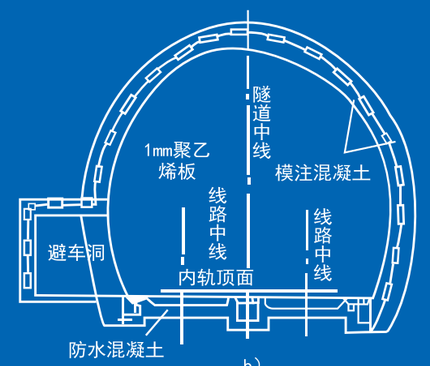
90%的地下室都有液态水的存在，地下室的液态水来源只有两个

结构存在毛细孔，结构外则跟水土层接触，水分子移动导致湿度很高，长时间会出现结构渗水到漏水一个过程。

There are capillary holes in the structure, but outside the structure, it contacts with the water and soil layers. The movement of water molecules leads to high humidity, and a process of seepage and leakage of the structure will occur for a long time.

传统解决方案
（被动方法）





Working Principle Of Intelligent Electrical Pulse Anti-seepage Dehumidification And Mould ControlSystem

智能电脉冲
抗渗除湿防霉控制系统

优尼帕建筑智能电脉冲抗渗防霉系统设备，采用智能低电压多脉冲防渗技术，可结合智能空气除湿系统，智能控制设备可连接移动APP，可远程控制地下室各种状态。彻底解决地下空间结构渗漏、空间潮湿问题，同时优化空气质量，真正达到健康、舒适、生活的地下空间。

优尼帕系统在工作室，地下空间水份分解成氢和氧，系统产生正负离子，氢往室外负极移动，氧离子形成氧气通过结构毛细孔往室内移动，向室内空气释放，在中央控制器源源不断的驱动下，地下空间形成了一个天然大氧吧，构筑起干爽舒适、空气清新的健康生态环境。

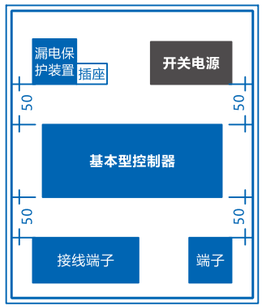
UNIPA intelligent anti seepage and dehumidi Pcation system adopts intelligent multi pulse seepage control technolog and is combinded with intelligent air dehumidi Pcation system; The system can be connected with your mobile APP, then you can have long-range control. This system thoroughly solve the problems of leakage and humidity in the underground space, and optimize the air quality, so provide you a comfort and livability undergroud space.

When UNIPA is working, the water was decomposed into hedrogen and oxygen, the system generates nagative and positive ions. The positive hydrogen ions move to the negative electrod of the outdoor. The negative oxygen ions become oxygen air and moves into the room through the capillary structure. A natural oxygen bar is then formed in your besement space which build a dry and comfortable and fresh air healthy ecological environment for you.

控制系统 Control System

控制器由控制主体、控制客体和控制媒体三部分组成， 具有自身目标和功能的智能化管控设备。除外部箱体外，内部主要部件包括控制主板、开关电源、安全报警装置、显 示屏、I/O接线板等。

The controller is composed of three parts: control subject, control object and control media. It has its own goal and function of intelligent control equipment. In addition to the external box, the main internal components include control motherboard, switching power supply, safety alarm device, display screen, I/O wiring board, etc.



基本型控制器与配电设备共用箱体，箱内设备为装配式，内部构造。

The basic controller shares the box with the distribution equipment. The equipment in the box is assembled. The internal structure is shown in the Pgure.

智能型控制器、工程型控制器与配电设备分箱安装，具有单独的控制箱体。

Intelligent controller, engineering controller and distribution equipment are installed in separate boxes, with separate control boxes.

触摸显示屏主要用于显示系统的各项参数名称、状态及要求

Touch display screen is mainly used to display the name, status and requirements of various parameters of the system.

触摸显示屏的主要显示内容 Main Display Content of Touch Display Screen

参数名称 Parameter Name	状态 State	要求 Requirement
结构除湿控制开关	启动/停止	除湿系统启动/停止
实时电流（mA）	0~50000 (根据产品型号而定)	0~50000 (根据产品型号而定)
设计电流（mA）	0~50000 (根据产品型号而定)	0~50000 (根据产品型号而定)
按面板参数进入各个房间查看	湿度显示	湿度显示

系统特点 System Characteristics

主动控制潮湿

采用电化学脉冲电压电解电离水分子的原理搭建大型电化学系统，根据地下空间的实际环境，主动除去墙体结构中的水分子和地下空间空气中的水分子，控制潮湿、发霉。

Based on the principle of electrochemical pulse voltage electrolysis to ionize water molecules, a large electrochemical system was built. According to the actual environment of underground space, water molecules in wall structure and air in underground space were removed actively to control humidity and mildew.

智能清新空气

水分子在控制器的电解电离作用下产生氢气和正离子，往室外负极移动；控制器的电解电离作用产生氧气和负离子。负氧离子能清新空气，形成地下空间“氧吧”。

Water molecule produces hydrogen and positive ions under the electrolysis ionization of the controller, and moves to the outdoor negative pole. The electrolysis ionization of the controller produces oxygen and negative ions. Negative oxygen ions can clean the air and form the underground space "oxygen bar".

智能传感网络互联

通过搭建检测反馈调节的智能控制系统，实现抗渗防霉、清新空气系统的目的。根据湿度传感器实时反馈的信息，对智能控制系统进行智能化主动调节。当室内湿度大时，传感器电阻变小，系统除湿效率提高；反之，当室内湿度小时，传感器电阻变大，系统除湿效率降低。

The purpose of anti-seepage, anti-mildew and fresh air system is realized by setting up an intelligent control system for feedback regulation of detection. According to the real-time feedback information of humidity sensor, the intelligent control system is adjusted intelligently and actively.

APP掌上远程功能

抗渗防霉系统具有掌上APP操作功能，安卓用户直接安装优尼帕提供的APK格式安装包；iOS登陆应用商店，搜索 TsBrowser 下载安装后即可使用。

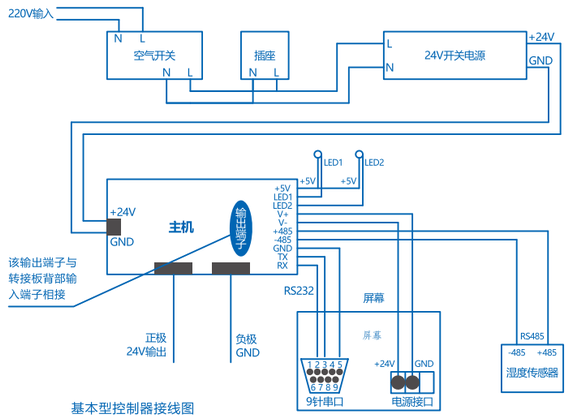
Anti-seepage and anti-mildew system has palm APP operation function, Android users directly install the APK format installation package provided by Unipa; iOS landed in the application store, search TsBrowser for download and installation, and then use it.

Working Principle Of Intelligent Electrical Pulse Anti-seepage DehumidiÞcation And Mould Proof System

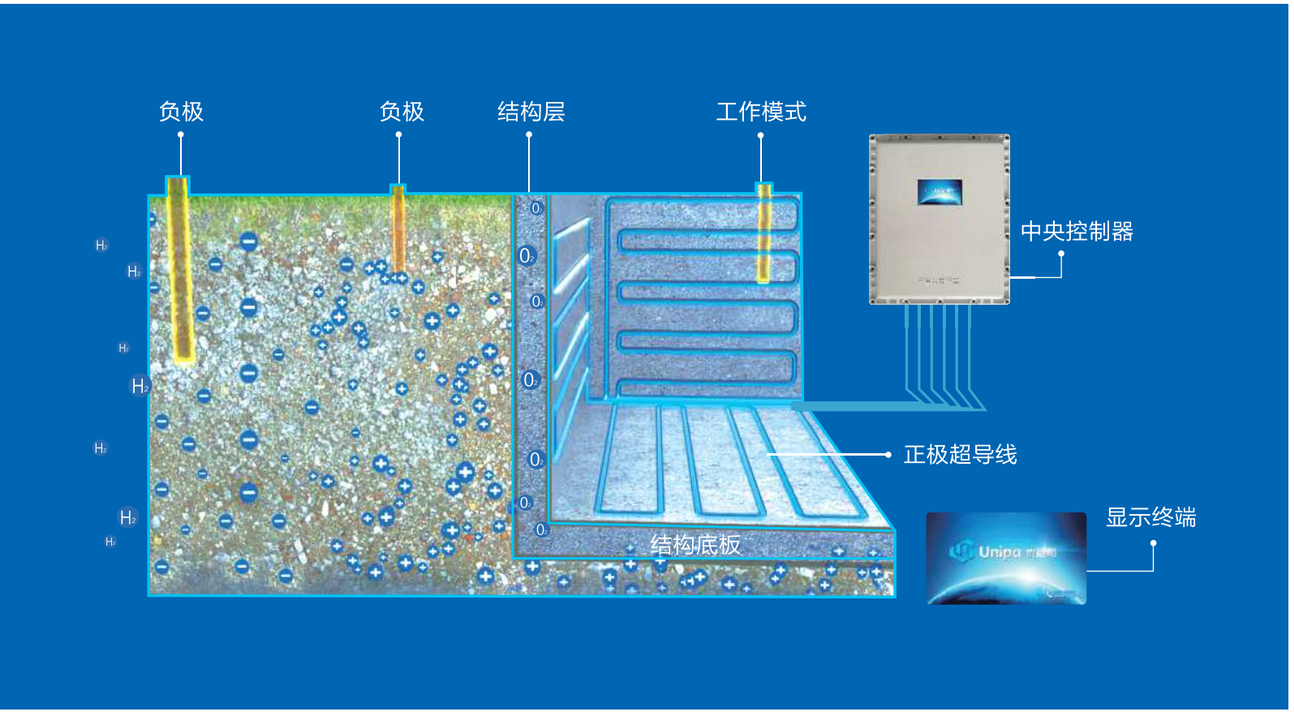
智能电脉冲抗渗除湿防霉系统工作原理

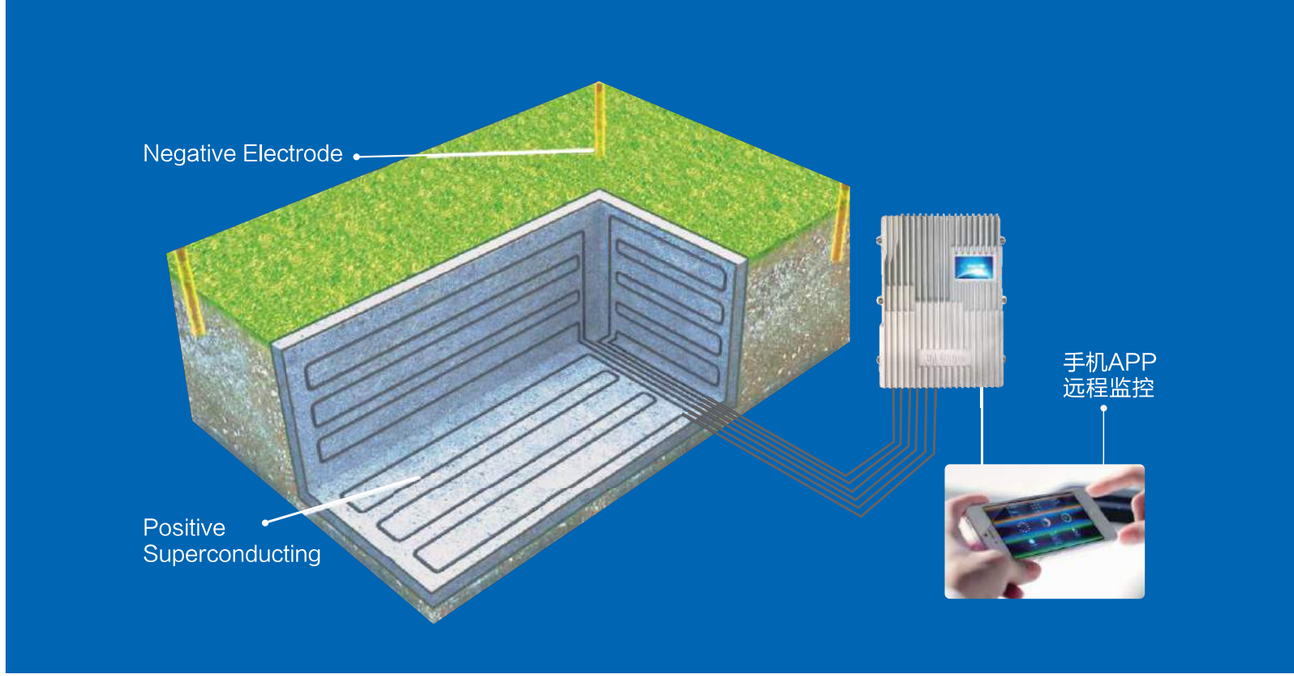
优尼帕系统由智能控制主机及正负极施工安装连接构成，正极超导线预埋在地下空间地面和墙体粉刷层，负极金属棒埋在结构土层迎水面，当系统工作时，水分子分解成正负离子，由正极向负极移动，当地面或墙体传感器检测到数据与原来设定值有偏差时，输出信号给智能控制主机，智能控制主机切换到工作模式，当达到设定值时，系统停止工作，可远程实时监控系统工作状态。

The UNIPA intelligent system consists of a central controller, a display terminal, a positive electrode wire, a negative electrode rod, a super conducting wire embedded in the unddergrond and the wall, and the negative metal oad is buried outdoors. When the system is working, the wate molecules are decomposed into positive and negative ions and move to the negative electrode. When the ground or wall sensor detects the deviation of the data from your original set value, a signal will be send to the central controller, which then switch to the operating mode unitl the original value is achieved. You can monitor the operation of data in real time through the mobile APP.



基本型控制器接线图





Unipa Anti-seepage And Anti-mildew System

优尼帕抗渗防霉系统

1.采用220伏电源，输出低压直流最高24伏，安全可靠
1.220V power supply, the output ultra-low pressure straight current up to 24 volts, safe and realiable.

2.低能耗，每1000平方米，约2度/天
2.low energy consumption, per 1000 square meter, about 2 degrees/day

3.安装简捷
3.smiple installation.

4.抵抗高压水60bar（600m）
4.resistance to high pressure water 60bar(600m).

5.干燥时间为1-3个月
5.the dey time is 1-3 months.

6.综合成本低，无需后期维护费用一次投入终身受益
6.low comprehensive, no post-maintenance costs, one time investment and lifetime beneÞt.

7.低电压多脉冲抗渗防霉系统
7.active anti-seepage, dehumidiÞcation.

8.结构永久保持干爽状态
8. the structure is permanently dry.

9.防止砼老化开裂，钢筋不锈蚀
9.to preven the aging of concrete cracking steel is not rust.

10.智能调节结构内侧空气湿度、空气质量
10.the inner aire humidity and air quality of the intelligent adjustment structure.

11.保护结构内侧面不发霉及物品不损坏
11.the inside of the protective structure is not moldy and damaged.

12.多领域结构渗漏处理经验
12.Rich experience in multi-Þeld structural water seepage treatment

13.可以通过手机APP，远程实时监控系统工作状态
13.romote real-time monitoring of data starus through mobile APP.

14.系统工作时，产生了负氧离子，向室内输送
14.When the system works, the negative oxygen ion is produced. and the source is continuously transported to the room.

Product Advantage
产品优势

1.技术成熟 安全环保
系统运用于多领域结构渗成功安装处理经验，“一次投入，终身受益”，使用交流电压220伏，输出直流电压24伏、36伏，人体可直接接触，无任何电伤及电磁辐射风险。

1. Technological Maturity
The system is applied to the successful installation and treatment experience of multi-Peld structure seepage, using 220 volts AC voltage and 24 volts DC voltage and 36 volts DC voltage. It can be directly contacted by human body without any risk of electric injury and electromagnetic radiation.

2.抗高压水渗透 防止结构钢筋腐蚀
防止混凝土老化、钢筋锈蚀、开裂的风险，提高结构耐久性，延长使用寿命。

2. High Pressure Water Penetration Resistance
Prevent the risk of concrete aging, steel corrosion and cracking, improve the durability of the structure and prolong the service life.

3.安装方便 综合造价低
系统设备可靠运行跟建筑同寿命，系统综合造价低，让你的装修永保价值。

3. Easy Installation
The reliable operation of the system equipment is the same as the life of the building, and the comprehensive cost of the system is low, so that your decoration will be of eternal value.

4.排内阻外 固若金汤
建筑智能电脉冲抗渗防霉系统,主动将地下水锁在地下结构外侧的水或土壤中，抵抗水分子的渗入；同时将结构内侧的水分子排到结构外侧去，从而保持结构干爽，延长建筑结构使用寿命。

4. Exclusion Of Internal Resistance
Intelligent electrical pulse anti-seepage and anti-mildew system of building actively locks groundwater in the water or soil outside the underground structure to resist the inPltration of water molecules; at the same time, the water molecules inside the structure are discharged to the outside of the structure to keep the structure dry and prolong the service life of the building structure.

5.智能调节 稳定节能
智能系统随着墙体结构的潮湿程度、空气湿度及空气质量等变化，自动调节，保持结构及空气干爽，净化空气。

5. Stable Energy Saving
Intelligent system can adjust automatically with the change of humidity, air humidity and air quality of wall structure, keep structure and air dry and purify air.

6.渗漏潮湿 永久终结
永久解决渗透及潮湿发霉问题，并能够使结构及地下空间保持长期的干爽状态。

6. Permanent Solution
Permanently solve the problems of penetration and wet mildew, and can keep the structure and underground space in a long-term dry state.

7.智能互联 实时监控
智能控制系统与移动app实现互联，实时监控，并可在手机端直接操作管理。后台实时监控系统工作状态，让使用者无忧。

7. Intelligent Interconnection
Intelligent control system and mobile app are interconnected, real-time monitoring, and can be directly operated and managed on the mobile terminal. Background real-time monitoring system work status, so that users worry.

8.科技领先 自主创新
已获得国家多项发明专利
专利号
201730473741.6
201710596703.9
201720882403.2
201810180186.1

8. Independent Innovation
Has been granted a number of national invention patents.
Patent number
201730473741.6
201710596703.9
201720882403.2
201810180186.1

9.负氧离子
系统在工作时，结构中间的水份经过低压脉冲后，转换成正负离子，负离子为氧离子。氧离子在医学界享有“维他氧”“空气维生素”等美称，能降解中和空气中的有害气体，调节人体生理机能、抗氧化防衰老、消除疲劳、改善睡眠、预防呼吸道疾病、改善心脑血管疾病、降血压、增强皮肤弹性。

9. Negative Oxygen Ion
When the system works, the water in the middle of the structure is converted into positive and negative ions after low-voltage pulse, and the negative ions are oxygen ions. Oxygen ion enjoys the reputation of "vitamin oxygen" and "air vitamin" in medical circles. It can degrade harmful gases in neutralized air, regulate human physiological function, anti-oxidation, anti-aging, eliminate fatigue, improve sleep, prevent respiratory diseases, improve cardiovascular and cerebrovascular diseases, reduce blood pressure and enhance skin elasticity.

Design Flow
设计流程

Unipa 优尼帕

现场勘测，制定解决方案

1.技术人员核对室内平面图纸，标注室内各功能区域需要施工的位置，确认施工条件是否达成。

2.技术人员勘测室外，确认室外泥土层位置、高度、类型，确认负极安装方式及位置。

3.针对现场室内外情况设计技术解决方案，同时做出项目预算。

4.联系项目负责人，与水电施工对接，确认进场施工时间，做好施工前准备。

现场勘测 → 工程设计 → 签订合同 → 系统调试

施工进场 → 施工准备 → 隐蔽工程建档 → 移交客户验收

1.放线

现场施工人员按照设计图纸标识的数据在需要施工的墙面和地面弹线，对于需要改变的位置需要及时通知项目设计人员，按照实际修改后的施工数据修改图纸并存档保留（放线边距：除墙面顶部300mm，其余均为150mm，中距为500-800mm根据现场情况而定）。现场单个回路总长度不超80m，总回路不超30个。

1. Release Line

According to the data identified in the design drawings, the site builders should inform the project designer in time about the location that needs to be changed, modify the drawings according to the actual modified construction data and keep them on file (setting-out margin: except 300 mm at the top of the wall, the rest are 150 mm, and the mid-distance is 500-800 mm according to the site conditions). The total length of single circuit is not more than 80m, and the total circuit is not more than 30.

2.切槽

现场施工人员根据画好的线条进行切割，切槽宽度为20mm，深度20mm，切割出来的槽应横平竖直，槽底平整，槽宽大体一致。

2. Grooves

The field workers cut according to the drawn lines. The width and depth of the groove are 20 mm and 20 mm respectively. The trough should be horizontal and vertical, the bottom of the trough should be flat, and the width of the trough should be roughly the same.

3.清理

在开槽完成后，对场地进行清理，保证槽内干净，无颗粒，灰尘及杂物，检查槽内有无裸露钢筋。如有，先用水泥或绝缘漆覆盖，保证预埋超导线时不直接接触到钢筋，最后槽内刷一遍水泥浆。

3. Clean Up

After the grooving is completed, the site is cleaned to ensure that the groove is clean, free of particles, dust and debris, and check whether there are bare steel bars in the groove. If yes, first cover with cement or insulating paint to ensure that the embedded superconductor does not directly touch the steel bar, and finally brush the cement slurry once in the tank.

4.安装正极超导线

使用木楔子固定超导线在槽的中央，不接触到底面与壁面，拐角处要有弧形弯曲，严禁直角，以防止超导线折断。

4. Installation Of Positive Superconductors

Use a wooden wedge to fix the superconductor in the center of the groove, without touching the bottom and the wall, and at the corner. With curved bending, right angles are strictly prohibited to prevent the breaking of superconductors.

5.搅拌回填料

回填料为专用超导粉、灌浆料和水的混合物，比例为1:6:1.7，施工人员应严格按照比例进行搅拌均匀后再进行回填。

5. Stirring Back Packing

The backfilling is a mixture of special superconducting powder, grouting material and water with a ratio of 1:6:1.7. The constructors should stir uniformly according to the proportion before backfilling.

6.回填灌浆料

使用灰刀把灌浆料回填入槽内确保完全覆盖超导线，回填料不得高出施工墙面或地面。回填槽应连续潮湿养护7-10天。

6. Backfill Grouting Material

Use the grey knife to fill the grouting material back into the groove to ensure the complete coverage of the superconducting wire, and the backfilling should not be higher than the construction wall or ground. The backfill tank should be kept moist for 7-10 days.

7.正极超导线接入接线箱

将所有正极超导线与连接线连接，确保接头密封防水，将正极连接线连接至接线箱。接线完成后，在灌浆之前，用万用表测试线路是否两端导通。正负极控制线采用国标JB8734-98/GB5023-2008 BVR线，正极采用红色BVR1.5mm的线，负极采用蓝色BVR2.5mm的线。

7. Positive Superconductor Connection Box

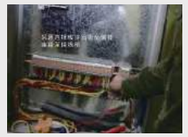
Connect all positive superconductors to the connecting wires to ensure the sealing and waterproofing of the joints, and connect the positive connecting wires to the junction box. After the wiring is completed, before grouting, the multimeter is used to test whether the two ends of the line are connected. The positive and negative control lines adopt national standard JB8734-98/GB5023-2008 BVR lines, the positive ones adopt red BVR1.5mm lines, and the negative ones adopt blue BVR2.5mm lines.

8.室外安装负极棒

室外负极选用直径为22mm的铜棒：室内负极选用直径为16mm的铜棒。室外负极孔深为地基下300mm-600mm，离外墙面不少于500mm且不与地面结构平行，每个工程最少安装2根以上负极数量，安装完负极后应用回填混合物填埋，混合物比例为6:1。室内墙面负极安装为斜向45度，离地高度在300mm以下。

8. Outdoor Installation Of Negative Rods

Copper rods with diameter of 22 mm were used for outdoor negative electrode and 16 mm for indoor negative electrode. The hole depth of outdoor negative pole is 300 mm-600mm under the foundation, not less than 500mm away from the outside wall and not parallel to the ground structure. At least two or more negative poles are installed in each project. After the installation of negative poles, backfilling mixture is used for landfill. The proportion of mixture is 6:1. Indoor wall negative pole installation is inclined 45 degrees, the height from the ground is below 300 mm.



9.负极接入接线箱

采用连接线将负极金属棒连接至接线箱。导线必须采用PVC套管保护，PVC穿线管（阻燃穿线管）目前执行的标准有公安部行业标准GA305-2001，建设部标准JG3050-2000和地方标准DB51-169-96以及企业相关标准。

9. Anode Access Box

Connect the negative metal rod to the junction box by connecting wires. Conductors must be protected by PVC bushing. Currently, the standards of PVC bushing pipe (flame retardant bushing pipe) are GA305-2001, JG3050-2000, DB51-169-96 and related enterprise standards.

10.安装电源

配电箱根据业主的需求，采用壁挂式或嵌入式，将主机、电源、指示灯等相关部件统一安装在符合国家标准GB7251的配电箱内，位置可根据业主装修合理安排。每个正极回路中的控制线单独接入专用的接线端子中，剥离芯线外的塑料保护层使其裸露10mm，用螺丝刀拧紧接线端子。控制箱正面应贴有公司统一规范的标识牌，箱门的背面应贴有公司统一规范的区域对照表。

10. Installation of Power Supply

Distribution boxes are wall mounted or embedded according to the owner's requirements. The main engine, power supply, indicator lamp and other related components are installed in the distribution boxes conforming to the national standard GB7251. The location can be reasonably arranged according to the owner's decoration. The control line in each positive circuit is connected to the special terminal separately. The plastic protective layer outside the core wire is stripped to expose it for 10mm. The terminal is tightened with a screwdriver. The front of the control box should be affixed with the logo of the company's unified standard, and the back of the box door should be affixed with the regional comparison table of the company's unified standard.

11.调试系统正常运行

主机与显示终端之间的通讯线采用带屏蔽（符合国家GB/T9327-2008标准）的8芯网络连接线，长度不得大于30米。配电箱接线完毕后逐项检查连接情况，确保无异物掉入机壳内，连通主机电源，红色指示灯（POW）点亮，系统正常运行后，绿色指示灯（RUN）亮，检查所有的连接线雾凇岛，状态良好测试当前的墙体湿度和空气湿度，并记录。查看显示屏上的各项参数是否在正常值内，使用示波器或万用表监测各个回路点电流输出是否正常。待系统正常运行后，固定区域每星期测试一次，每次测试结果留档，一并移交或业主。

11. Normal Operation Of Debugging System

The communication line between host computer and display terminal adopts 8-core network connection line with shield (conforming to national GB/T9327-2008 standard), and the length should not exceed 30 meters. After the connection of the distribution box is completed, check the connection condition one by one, ensure that no foreign body falls into the chassis, connect the main power supply, light up the red indicator light (POW). After the normal operation of the system, the green indicator light (RUN) lights up, check all the connection lines of the fog island, test the current wall humidity and air humidity in good condition, and record. Check whether the parameters on the display screen are within the normal value, and use oscilloscope or multimeter to monitor whether the current output of each circuit point is normal. After the normal operation of the system, the fixed area will be tested once a week, and the test results will be filed for transfer or owner.

12.移交客户验收归档

所有隐蔽工程材料归档，测试数据保存，整理资料移交业主，现场教授操作使用。

12. Transfer Customer Acceptance To Archive

All concealed engineering materials are filed, test data are saved, data are handed over to the owner, and field professors operate and use them.

Application Range

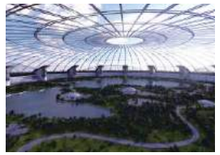
应用范围

地下房屋

(地下室、别墅地下空间、博物馆等)

Underground Houses

(basements, villas underground spaces, museums, etc.)



地下结构

(地下商场、游泳馆、矿山、地下车库、地下油库等)

Underground Structures

(shopping malls, swimming pools, mines, garages, oil depots, etc.)

水利水电

(发电站、大坝、海洋工程、港岸工程等)

Water Resources and Hydropower

(Power Station, Dam, Marine Engineering, Port and Coastal Engineering, etc.)

公路铁路

(城市地铁、地下人行道、山体隧道、海底隧道等)

Highway and Railway

(Urban Subway, Underground Pedestrian, Mountain Tunnel, Submarine Tunnel, etc.)

军事工程

(地下指挥中心、防空洞、重要军事设施等)

Military Engineering

(Underground Command Center, Air Defense Shelter, Important Military Facilities, etc.)

Application Selection
应用选择

什么时候选择优尼帕抗渗防霉系统

1.在项目设计同步进行，前期考虑优尼帕抗渗防霉系统解决方案

2.在地下工程装修时与水电施工同步进行

3.工程渗水长期维修，未能解决请用优尼帕抗渗防霉系统

4.在城市规划发展时，使用优尼帕抗渗防霉系统

When to Choose Unipa Anti-seepage and Anti-mildew System

1. The project design is carried out synchronously, and the solution of Younipa anti-seepage and anti-mildew system is considered in the early stage.

2. When underground engineering is renovated, it is synchronized with hydropower construction.

3. Long-term maintenance of Engineering seepage, failing to solve the problem, please use Unipa anti-seepage and anti-mildew system.

4. Use the Anti-seepage and Anti-mildew System of Younipa in the Urban Planning and Development .

Product Specification
产品规格

智能型主机 Intelligent Host

系统型号 Model	输入电压 Input Voltage	输出功率 Output Power	产品规格 Product SpeciPcation	适用面积 Applicable area
UZ-10-B	AC 220V	10w / 240w	450x350x140mm	50~400平方米
UZ-20-B	AC 220V	10w / 480w	450x350x140mm	400~800平方米
UZ-30-B	AC 220V	10w / 720w	450x350x140mm	800~1500平方米

特点 I Characteristic：系统设备一体化，集结构防渗防潮空气除湿整体解决方案，手机远程监控，可自动调节，机型更灵活，适用于更大面积

Integrated system and equipment, integrated solution of anti-seepage and moisture-proof air dehumidiPcation, remote monitoring of mobile phone, It can be automatically adjusted, more ßexible and suitable for larger area.

智能工程机 Intelligent Engineering Machine

系统型号 Model	输入电压 Input Voltage	输出功率 Output Power	产品规格 Product SpeciPcation	适用面积 Applicable area
UG-35-A	AC 220V	10w / 1200w	600x500x210mm	1500平方米
UG-35-B	AC 220V	10w / 1200w	600x500x210mm	1500平方米
UG-50-A	AC 220V	10w / 1800w	600x500x210mm	2000平方米

特点 I Characteristic：系统设备一体化，集结构防渗防潮空气除湿整体解决方案，手机远程监控，可自动调节，机型更灵活，适用于更大面积

Integrated system and equipment, integrated solution of anti-seepage and moisture-proof air dehumidiPcation, remote monitoring of mobile phone, It can be automatically adjusted, more ßexible and suitable for larger area.

系统使用寿命100年以上

The service life of the system is more than 100 years

Service Guarantee

服务保障

优尼帕专业的售后服务团队

Unipa Professional After-sales Service Team

质量保证期

1.系统使用寿命100年以上。

2.质量保修期从设备出厂日期开始计算。

3.主机设备保修3年，施工系统保修5年。

4.主机设备保险公司承保。

保养服务

1.优尼帕系统正常运行后，每个月（半年内）定期检测系统工作情况；每3个月（半年后）检测一次；每半年（一年后）检测一次。

2.优尼帕系统运行期间，如出现任何故障，请24小时内通知当地经销商或拨打电话：**400-010-007**，我方2-3天内快速派人到现场进行处理。

Quality Assurance Period

1. The service life of the system is more than 100 years.

2. The warranty perior of the quality is calculated from the date of production.

3. The maniframe is guaranteed for 3 years, and the system engineering warranty is period is 5 years.

4. Main Equipment Insurance Company underwrites insurance .

Maintenance service

1.After the normal operation of the Uounipa system, (the Þrst half years)the working condition of the system was regularly detected every months. (the second half years)After six monthes, it was detected every 3 months, (after Þrst year)atfer a year, it was detected every six months.

2. If there is any problem during the operation of Younipa system, please ontify the local dealer within 24 hours or call 400-010-007, and we will send our engineer to the scene within 2-3 days.

Enterprise Honor & Qualifications

企业荣誉与资质

Product CertiÞcations & Patents

产品认证及专利

温州市国家大学科技园

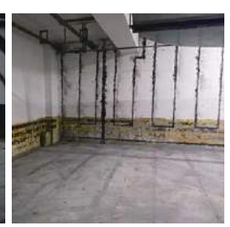
Wenzhou National University Science Park

本项目是温州市重点建设智能制造产业国家大学孵化基地，本园区将打造地下空间智慧环境于地下室工程经常发生渗水、潮湿、返潮和发霉现象，致使地下室的无法正常使用，给地下室带来无限的烦恼。政府园区领导跟优尼帕公司详细的交流对接，我公司技术人员针对温州市国家大学科技园对其地下室出现的问题，做出针对性的解决方案。

鉴于地下室本身的结构原因，地下室的外墙和底板都深埋在地下，受到土中水和地下水的浸渗，因此，防潮防渗问题是地下室设计中所要解决的一个重要问题。一般可根据地下室的标准和结构形式、水文地质条件等来设计优尼帕抗渗、防潮方案，实施整套系统的安装运用。

This project is the incubation base of Wenzhou National University for Intelligent Manufacturing Industry. The park will create an intelligent environment for underground space. Water seepage, dampness, moisture return and mildew often occur in basement projects, which results in the normal use of basement and brings inPnite troubles to basement. The leaders of the government Park communicate and dock with Unipa in detail. Our technicians make targeted solutions to the problems in the basement of Wenzhou National University Science Park.

In view of the structural reasons of the basement itself, the basement exterior walls and ßoor are deeply buried in the ground, and are inPltrated by water in the soil and groundwater. Therefore, the problem of moisture-proof and seepage-proof is an important problem to be solved in the basement design. Unipa anti-seepage and moisture-proof scheme can be designed according to the basement standard and structure form, hydrogeological conditions, etc., and the installation and application of the whole system can be implemented.



Unipa Service Coverage Area Distribution Map

优尼帕服务覆盖区域分布图

在未来，优尼帕不忘初心，以客户为本，持续创新，智造精益求精的优质产品，致力于打造成为地下空间智慧环境解决方案服务商的领跑者。为世界各地的地下工程提供安全、舒适、环保、智能化的生活环境。

In the future, Younipa will never forget its original intention, customer-oriented, continuous innovation, Intelligent and excellence quality products, and strive to become the leader of intelligent environmental solutions service providers in underground space. To provide safe, comfortable, environmentally friendly and intelligent living environment for underground projects around the world.

展望未来

Looking Forward To The Future

地下空间 · 智慧环境创造专家

在未来，优尼帕不忘初心，以客户为本，持续创新，智造精益求精的优质产品，致力于打造成为地下空间智慧环境解决方案服务商的领跑者。为世界各地的地下工程提供安全、舒适、环保、智能化的生活环境。

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