ZHENGZHOU WINSEN ELECTRONICS TECHNOLOGY CO., LTD

# SENSE THE WORLD

## INNOVATE THE FUTURE

ONE-STOP SENSOR SOLUTIONS PROVIDER

ZHENGZHOU WINSEN ELECTRONICS TECHNOLOGY CO., LTD

# About Us

## Zhengzhou Winsen Electronics Technology Co., Ltd.

ONE-STOP SENSOR SOLUTIONS PROVIDER

FROM April 25, 2003

BASE Zhengzhou · China

BUSINESS 7 Series 200+ Categories 300+ detecting indicators

INDUSTRY STATUS
Globally renowned sensor company
A leading gas sensor player in China

# Industrial Layout

## Tai Yuan R&D Center

In April 2019, Winsen collaborated with Shanxi Tengxing to establish the Taiyuan R&D Center, further expanding our R&D capabilities.

## Shanghai R&D Center

In November 2021, the Shanghai R&D Center was officially established. Winsen embraced the Yangtze River Delta region, strengthening its R&D capabilities.

## Shenzhen R&D Center

In May 2021, the technology-driven solutions company was officially inaugurated, with Weisheng Technology establishing its presence in the Pearl River Delta region.

## Wuhan R&D Center

In April 2023, the Wuhan Optoelectronic Technology Research Center was established, attracting more top talents and expanding the boundaries of technology.

# Process Management

The company consistently adheres to the quality policy of "Fine Craftsmanship, Scientific Innovation, Pursuit of Excellence, and Value-Added Service." By formulating production process control plans and work instructions, it has established a standardized, accountable, and regulated process management system. Additionally, the company has independently developed an MES production management system, enabling comprehensive and visual management across the entire workflow.

Raw Materials

Nano Synthesis

Formula

Sensitive Materials & Electrodes

Sensitive Core

**Raw Material--Sensor--Module--Application Solution**
**The entire production chain is controllable and stable.**

Sensor → Encapsulation → Aging → Test → Package → Solution

Module → Module Aging → Automatic Calibration → Automatic Testing → Module Inspection → Automatic Packaging

MES system, whole process traceability

# Core Competence

## 30+ YEARS OF EXPERIENCE
R&D, manufacture and sales of sensors and sensing solutions.

## QUALITY GUARANTEE CONTINOUS IMPROVEMENT
Complete and rigid process flow control, coupled with significant improvements.

## INTERNATIONAL MARKET
Deliver sensing products to more than 100 countries and regions.

Core Competence

## STABLE SUPPLY CHAIN RELIABLE PRODUCTION
Core components not subject to constraints, advanced equipments for manufaturing and test.

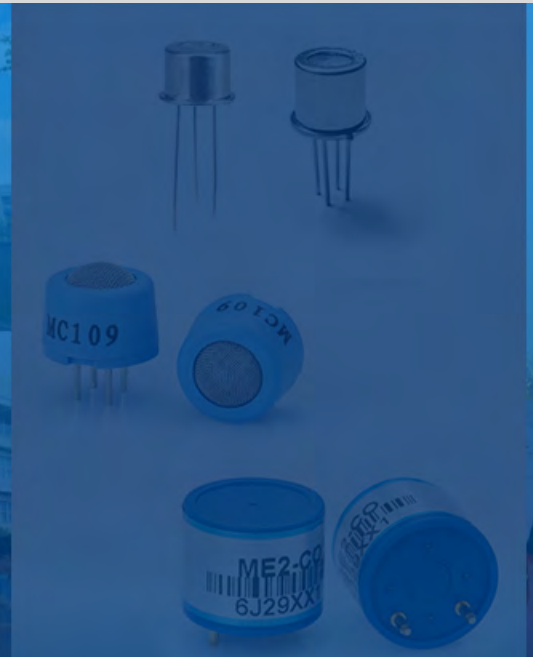
## R&D STRENGTH TECHNOLOGY INNOVATION
200+ patents, 180+ R&D team members, self-built labs for continous innovation.

## ONE-STOP SERVICE
Professional consultation, fast delivery, 24 hours after-sales support.

- In 1998, the parent company Hanwei Electronics was established
- In 2003, Hanwei Group updated its business structure, and Zhengzhou Winsen Electronics Technology Co., Ltd. was established.

## Incubate · Initial Start

## 1998-2003




- Products of semiconductors, catalytic combustion, electrochemical, and flat surfaced semiconductor sensors have been successfully developed and patented.

## Create · Industry Based

## 2003-2008

- The parent company, Hanwei Group, has officially been listed on the Shenzhen Stock Exchange.
- NDIR infrared gas sensors, pyroelectric, pressure, MEMS sensors, and water quality sensors have been successfully developed and launched on the market.

## Expand · Tech-oriented

## 2009-2017

- Initiated the First World Sensor Conference;
- Joint with Shanxi Tengxing to consolidate its leading industry position;
- Established the Henan Intelligent Sensor Innovation Center;
- Established sealing and testing lines and mass produce MEMS, thermopile sensors.

## Lead · Innovation Spirit

## 2018-2020

- Winsen has passed the ITAF16949 automotive system certification;
- Established subsidiaries in Shanghai, Shenzhen, Xinyang, Taiyuan, and other places;
- The MEMS testing building was successfully capped.

## Bloom · Strategic Growth

## 2021-Now

# Product Milestone

**1998**
The first MQ smoke and gas sensors were launched into the market.

**2003**
The MQ hazardous gas series and the catalytic MC series were launched in bulk.

**2005**
The launch of ME series of electrochemical products broke the foreign monopoly.

**2007**
NDIR series were launched and received widespread acclaim from customers.

**2010**
Pyroelectric human body inductive products were launched in bulk

**2011**
Flow sensors and T.&H sensors have gained widespread market recognition.

**2012**
MEMS silicon-based micro hot plates and MEMS sensors small batch trial production

**2014**
Ceramic pressure sensors launched in bulk quantities.

**2015**
The infrared and laser dust sensors were successfully developed and smoothly launched into the market.

**2016**
Water quality sensors were mass-produced and introduced into the market.

**2018**
The new RDA series of digital pyroelectric products and thermopile temperature sensors were launched and entered mass production.

**2020**
The new flame sensors were successfully develped and launched into the market.

**2021**
PID sensors were launched into the market and gained customer approval.

**2023**
The infrared refrigerant product were successfully launched and received multiple technical awards.

**2024**
Laser methane sensor was launched in bulk. The performance upgrade of MPn-4C was completed.

**Future**
Moving forward...

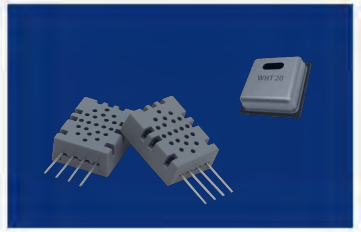
# 7 Product Series

## Gas Sensors

- Semiconductor Gas Sensor
- Electrochemical Gas Sensor
- Catalytic Combustion Gas Sensor
- Infrared (NDIR) Gas Sensor
- Photoionization (PID) Gas Sensor
- Laser (TDLAS) Gas Sensor
- Hot Wire Gas Sensor
- Thermal Conductivity Gas Sensor
- Solid Electrolyte Gas Sensor

## PM Sensors

- Infrared Dust Sensor
- Laser Dust Sensor



## Temperature& Humidity Sensors

- Humidity Sensitive Resistor
- Humidity Sensitive Capacitor
- Digital T&H. Sensor

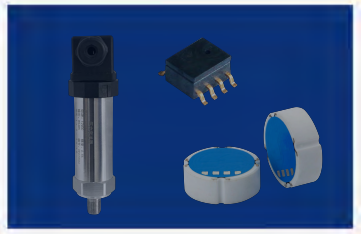
## Water Quality Sensors

- Dissolved Oxygen
- ORP
- pH
- Residual Chlorine
- Ammonia Nitrogen
- TDS

## Infrared Detection

- Pyroelectric Human Inductive Sensor
- Thermopile Temperature Sensor
- Pyroelectric Flame Sensor
- Photoconductive Sensor

## Gas Flow Sensors



## Pressure Sensors

- Ceramic Pressure Sensor/Transmitter
- Diffused Silicon Pressure Sensor/Transmitter
- Flexible Pressure Sensor

## Application Solutions

- Household
- Energy
- Environment
- Smart Firefighting
- Automotive
- Medical
- Industrial
- Agriculture & Aquaculture

More...

The application of sensors has penetrated into every area of modern life, becoming the core force driving intelligence and automation.

**Household Appliances**

**Energy Storage**

**Environmental Monitoring**

**Smart Firefighting**

**Automotive Electronics**

**Medical & Health**

**Industrial Safety**

**Agriculture Aquaculture**

# Household Appliances Sensing Solutions

## Safety Detection

Laser TDLAS CH4 Sensor

Combustible Gas Sensor/Module

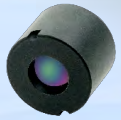
Burnt Smell Detection Module

CO Module

Refrigerant Module

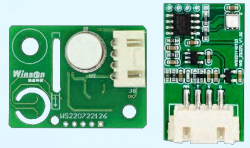
Food Freshness Detection Module

Human Induction Module

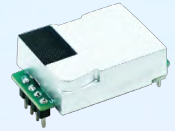


Ultrasonic Distance Measurement Module

## Air Quality



VOC+T.&H. Module



CO2 Sensor

EC HCHO Sensor

PM Sensor

Pollen Sensor

Multi-in-one Air Quality Module

# Automotive Electronics Sensing Solutions

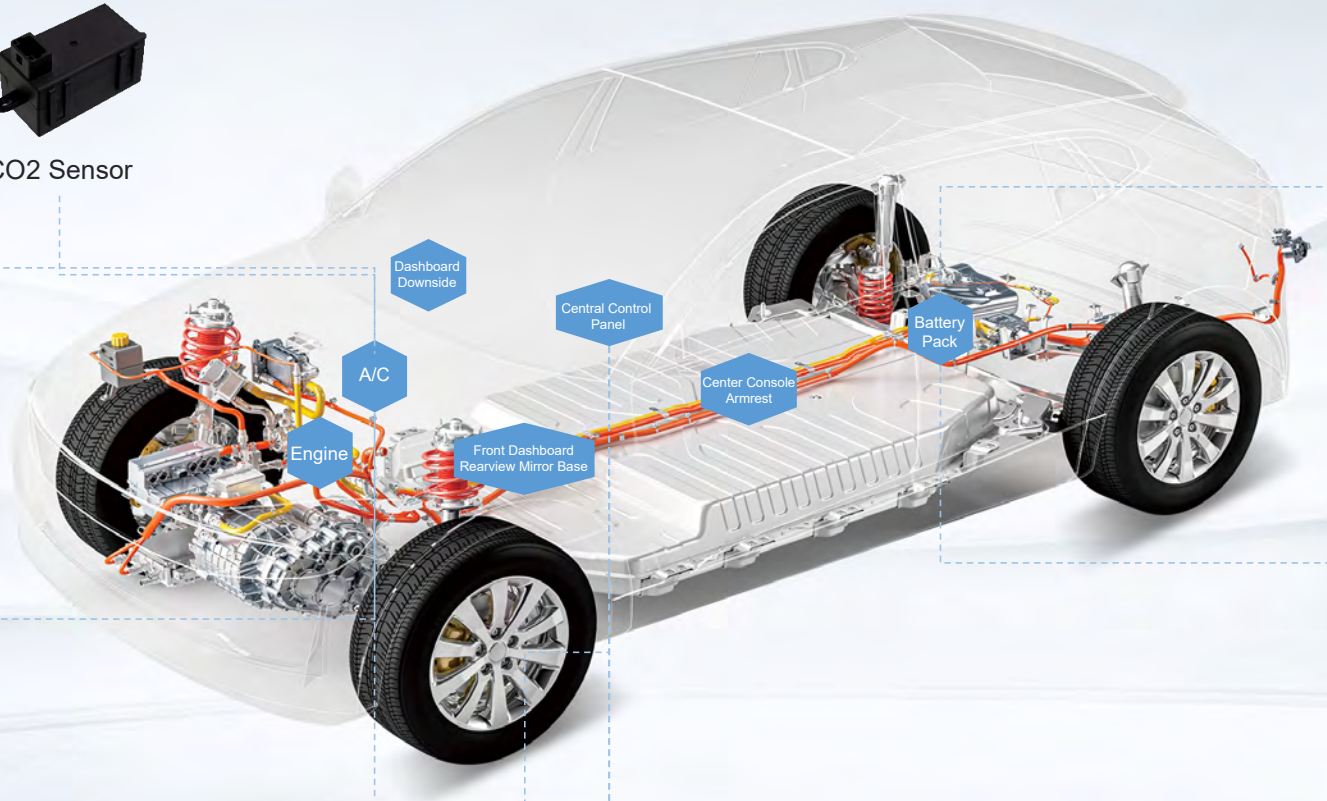
## Comfort Product Line

Air Quality Sensor (AQS)

CO2 Sensor

Multi-in-one
Air Quality Sensor

Laser Particulate Matter Sensor
(Single/Dual Channel )



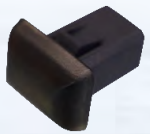

## Safety Product Line

CH4 Leakage Sensor

Alcohol Tester

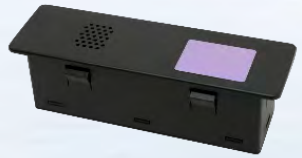
## Intelligent Product Line

Anti-intrusion Sensor



Light Sensor

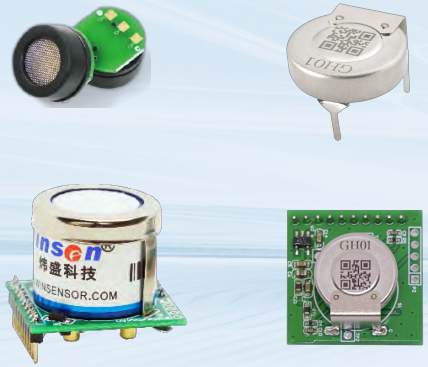
Light and Rainfall
Composite Sensor



Life Presence Sensor

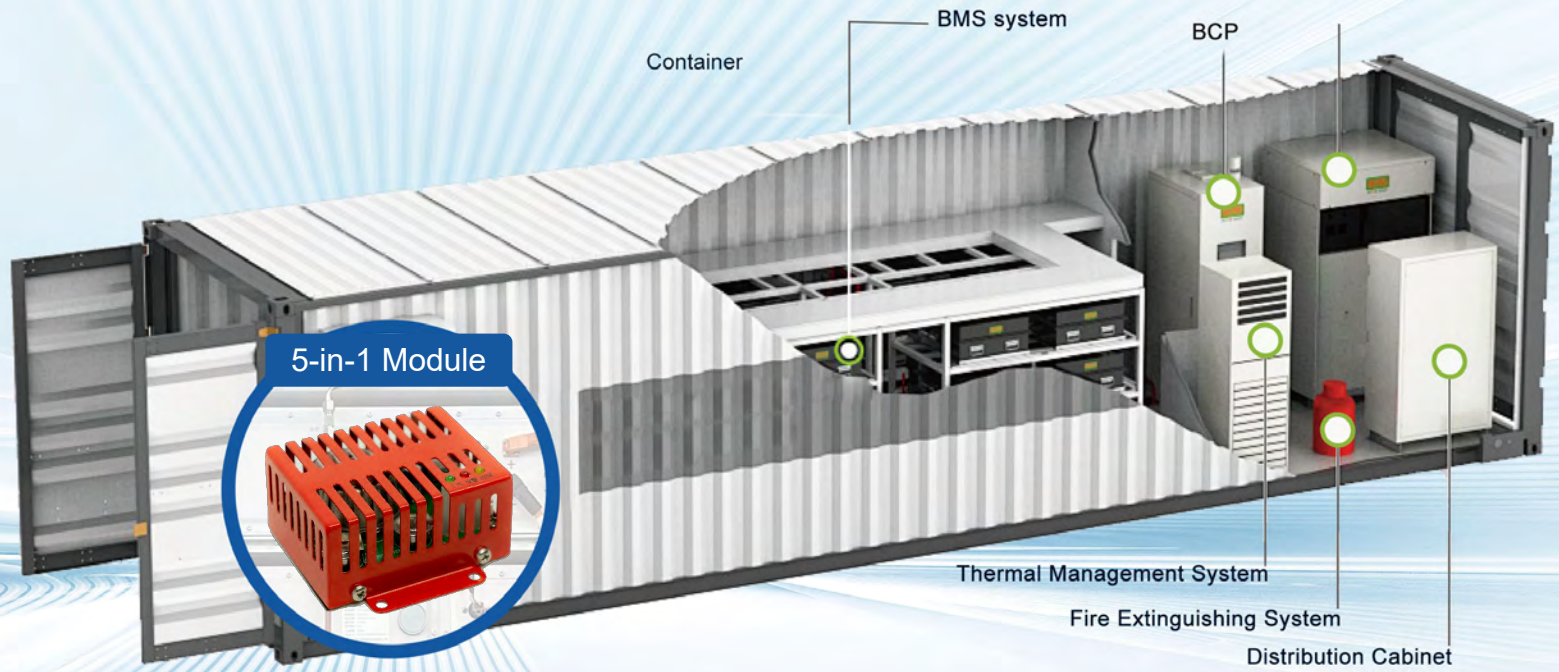
# Energy Storage Safety Sensing Solutions

## H2 Detection



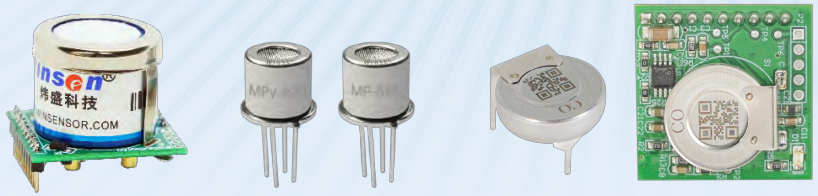
## 5-in-1 Module





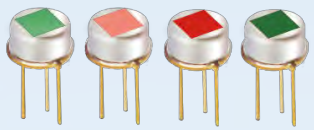

## VOC Detection

## CO Detection

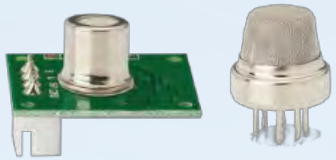


## T.&H. Detection

## Flame Detection



## Smoke Detection



# Medical & Health Sensing Solutions

## Medical Oxygen Measurement

Oxygen Sensor MED-$O_2$-LA/LB

Ultrasonic Oxygen Sensor
US1001/US1010

## Breath Test

H2S Sensor

EC Breath Test Sensor

Cooled PbSe Infrared
Photoconductive Sensor

MEMS Breath Sensor

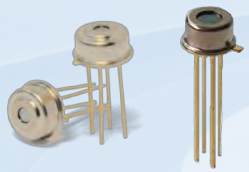
## Gas Flow Measurement

Ventilator
Anesthesia Machine

Home Use Ventilator

Breath Test

## Temperature



Thermopile Temperature
Sensor MRT511/MRT311

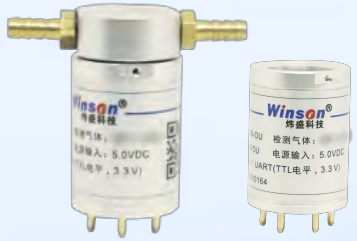
## Blood Pressure Monitor Sensor

Plastic Package
Pressure Sensor
WPAS01/WPAS02

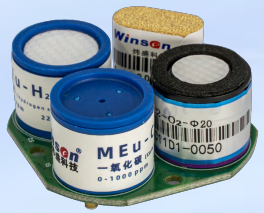
# Industrial Safety Sensing Solutions

## Hazardous Gas Detection

EC Gas Sesnor/Module
$SO_2$/CO/$NH_3$/$PH_3$/$H_2S$/$NO_2$...




Odor Gas Series




4-in-1 Gas Module

## Pressure Measurement



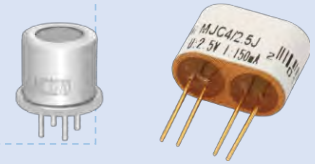
Ceramic Pressure Sensor/Module

General Type Isolated Diaphragm Pressure Sensor

Pressure Transmitter

Liquid Level Transmitter

## Combustible Gas Detection



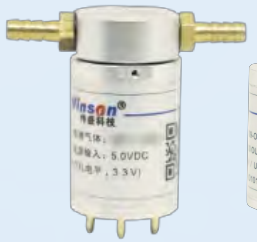
Catalytic Combustion Gas Sensor

Infrared Methane CH4 Sensor

Laser Methane CH4 Sensor

# Environment Monitoring Sensing Solutions

## Pollution Monitoring



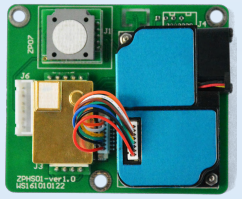

Odor Series Module

Hazardous Gas Monitoring

## Water Quality Monitoring

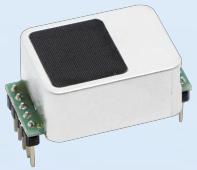
DO/ORP/CL/NH3-N/TDS..

## Indoor Air Monitoring

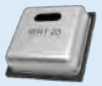


Multi-in-One Air Quality Module

Laser Dust Sensor



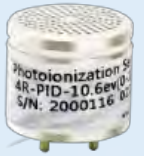
CO2 Sensor



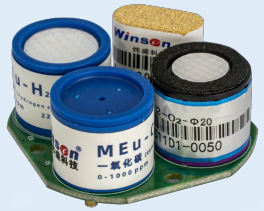
T.&H. Sensor

## Atmospheric Monitoring

Atmospheric Monitoring Sensor




PID Sensor

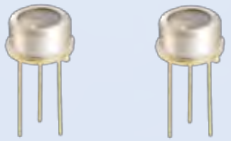



4-in-1 Gas Module

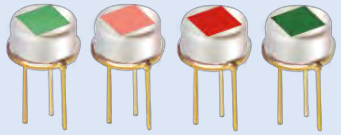
SO2, NO2, CO, O3、T.&H.

# Smart Firefighting Sensing Solutions

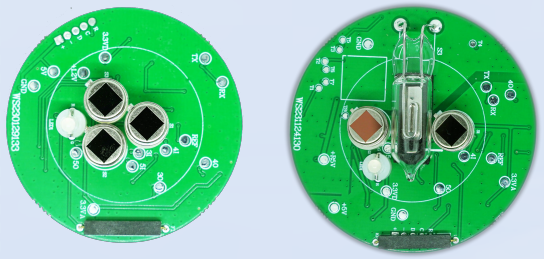
## Flame Detection



PbSe/PbS Infrared Photoconductive Sensor



Pyroelectric Flame Sensor

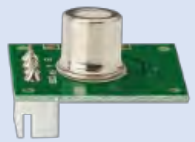


Pyroelectric Flame Module

## Smoke Detection

MEMS Smoke Sensor

MP Smoke Sensor

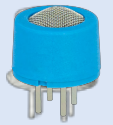


Smoke Module

MQ Smoke Sensor

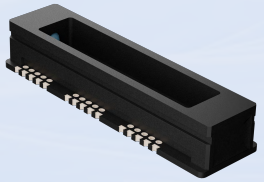
## Combustible Gas Detection

Catalytic Hot Wire Gas Sensor



Catalytic Combustion Gas Sensor

Flat MOS Combustion Gas Sensor



Home Use Laser Methane Sensor

# Agriculture Aquaculture Sensing Solutions

## Grain Storage Safety Monitoring

Hazardous Gas Sensor/Module

MEMS T.&H. Sensor

Infrared CO2 Sensor



T.&H. Sensor

## Aquaculture

- ORP
- pH
- Residual Chlorine
- Ammonia nitrogen
- Dissolved Oxygen
- TDS
- Conductivity
- Turbidity

# Partial Client Portfolio Presentation

Please be advised that the listing above is presented in a non-hierarchical manner, with no implied ranking or prioritization among the featured clients.

## Leading the Industry, Innovative & Controllable Technology

With robust R&D capabilities, we maintain sustained input in R&D and unwavering commitment to technological innovation. This not only ensures that we remain at the forefront of industry but also drives continuous innovation, leading the future trend of the sensing industry.

We firmly believe that technology serves as the fundamental driving force behind enterprise development and the cornerstone of our ability to deliver exceptional products and services to our clients.

Through continuous research and innovation, we are committed to creating enhanced value for our customers while actively contributing to the advancement and progress of the sensing industry.

**10%**

### R&D Input

The average annual R&D input exceeds 10% of the annual revenue.

**5+**

### R&D Layout

With Zhengzhou headquarters as the core, a nationwide R&D and innovation system is being established, encompassing cities of Shanghai, Wuhan, Shenzhen, and Taiyuan.

**180+**

### R&D Team

There are over 180 R&D personnel, including more than 10 with doctoral degrees and over 50 with master's degrees, who have an average of more than 8 years of experience in sensor development.

## Industry Association

- Vice President of the Micro-Nano Devices and Systems Branch of China Instrument and Control Society (CIS)
- Standing Council of Sensor Branch of China Instrument and Control Society (CIS)
- Council Member of Sensing and Microsystems Technology Branch, Chinese Institute of Electronics (CIE)
- The Deputy Director and Secretary-General Member of the Gas and Humidity Sensing Technology Committee of the Sensor and Microsystem Technology Branch, Chinese Institute of Electronics (CIE)
- National Technical Committee for Standardization of Explosion-Proof Electrical Equipment (SAC/TC9)
- The Standardization Technical Committee for Instrumentation and Components of China Machinery Industry (CMIF-TC17)

## Rearch Centers

- Nationally Certified Enterprise Technology Center (the only one in Chinese sensor industry)
- Henan Province Gas Sensing Functional Materials and Gas Sensor Engineering Technology Research Center
- Henan Internet of Things Engineering Research Center
- Henan Engineering Research Center for Trace Gas Detection Technology and Instrumentation
- The Zhengzhou Engineering Technology Research Center for Trace Gas Detection Instruments
- Zhengzhou Coal Mine Safety Monitoring Engineering Research Center

## 20+

### Experiment Types

Gas-related, Climatic Environment, EMC, Electrical Performance, Mechanical Performance, etc.

## 10+

### Advanced Laboratories

CNAS Laboratory, MEMS Laboratory, UL Laboratory, Nanocomposite Materials Laboratory, etc.

## 400+ sets

### Leading R&D Equipment

Cube Storage, Die Bonder, Lithography Machine, Coating Machine, SMT Placement Machine, Automatic Probe Station, etc.

Testing & Inspection Equipment

MEMS Automated Production Line

Self-developed Automated Production Equipment

Comprehensive management system lays a solid foundation for the company's delicacy management and high-quality sustainable development.

- ISO9001 QMS
- ISO14001 EMS
- ISO45001 OHSAS
- IATF16949 Automotive Quality
- GB/T29490 Intellectual Property
- QC080000 Hazardous Substance

In 2006, Winsen obtained the certification of import and export, and its products have passed multiple standards, regulations, and certifications.

| | | |
|---|---|---|
| 20+ CE | 250+ RoHS | 100+ REACH |

With professional qualifications and a wealth of industry awards,
Winsen has earned widespread acclaim and trust in the market.

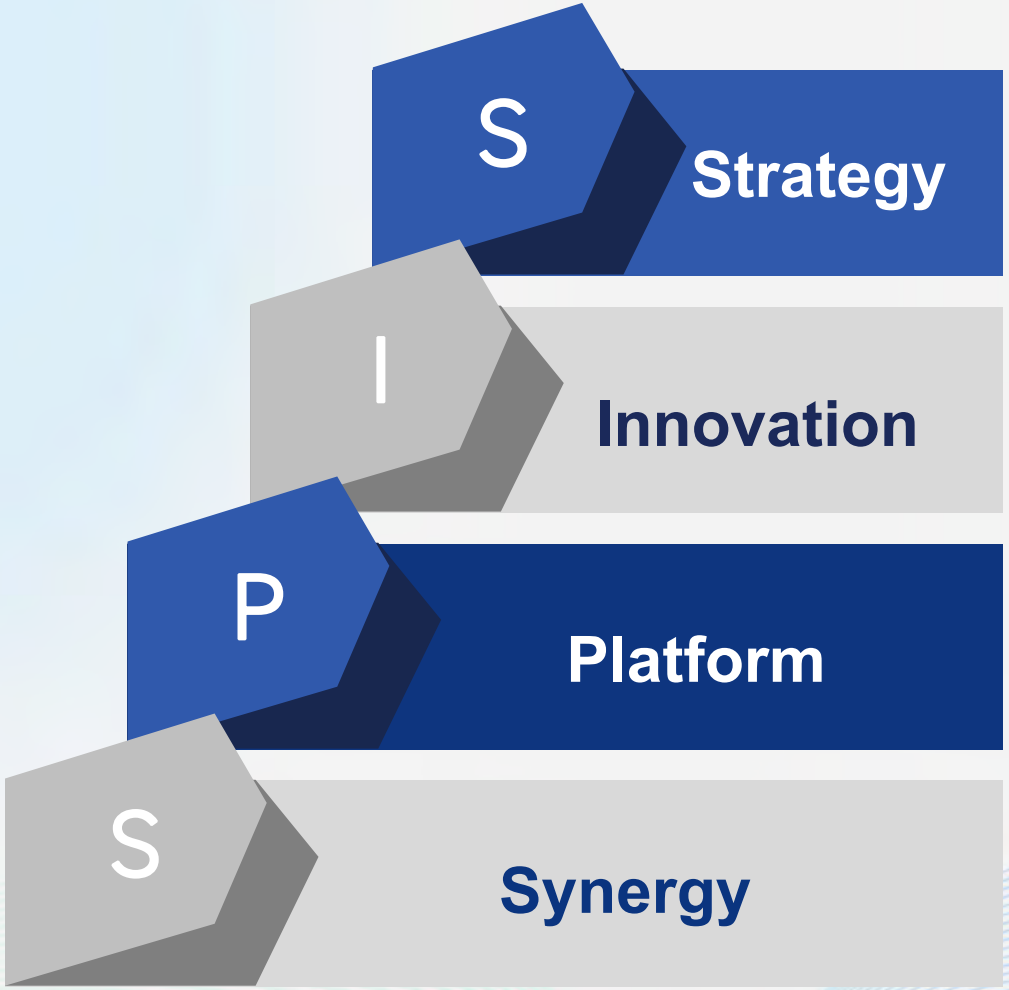
## 200+ Authorized Patents

- ✓ **30+** Invention patent
- ✓ **100+** Utility model patent
- ✓ **70+**Appearance design patent

## 50+ Sci-Tech Achievement Award

- ✓ **20+** Appraisal of Sci-Tech Achievements
- ✓ **10+** Science and Technology Progress Award
- ✓ **10+** Domestic Leadership Award
- ✓ **10+** International Advanced Award

**3A Trustworthy Enterprise** ▶




Winsen adheres to the guiding principle of “Strategy-driven, Innovation-powered, Platform-supported, and Synergy-enhanced”. It is intensifying its efforts in the research and development of new technologies for sensors that detect water, air, particulate matter, light, and sound, thereby strengthening the core competitiveness of its sensor technologies.

Simultaneously, we are accelerating the strategic deployment in emerging sectors such as smart home technologies, hydrogen energy, fuel cell safety, cabin air quality management, and healthcare. This initiative aims to seize market opportunities, cultivate new growth drivers for our business performance, and consolidate our leading position in the industry.