

# WELCOME

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# NiSAN

Electronics Instrumentations Company, Incorp.

A background image showing a business meeting. In the foreground, a man in a dark suit and blue striped tie is reaching out with his hand, palm facing up, as if offering a handshake. In the background, two other people in business attire are visible, slightly out of focus.

## ABOUT US

NiSAN Electronic Instrumentation Company Incorporation was incorporated in 1997 as an Electronic Instrumentation Trade and Service Company, headquartered in Ankara.

Prior to the incorporation, NiSAN Inc. was a company with unlimited liability with the name NORM Electro-Technical Services had been established in 1981.

# LINE OF BUSINESS

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# NiSAN

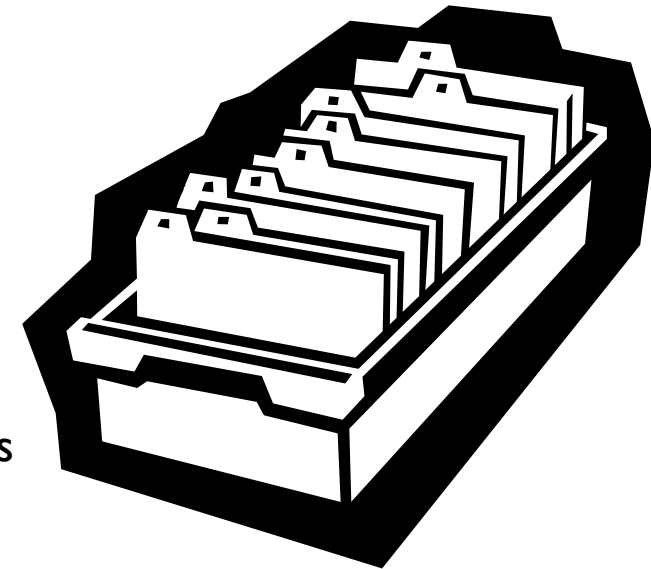
Electronics Instrumentations Company, Incorp.

As an engineering company; NiSAN is working with a special focus on the process instrumentation concerning test and measurement systems.

NiSAN is ready to cooperate for the following facilities that those are can be considered as strategic facilities in any country.

- Water quality online test and measurement systems
- Air quality online test and measurement systems
- Instrumental analysis laboratories

Our engineering services include planning and design, supervision of construction/fabrication, commissioning and implementation and plant operation.



# WORKING TEAM



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Our greatest strength is that we have expertise in all of the fields which we handle, depending on the work volume the utility outsourcing specialist as well. Our team members renowned expert in;

- Electronics engineering
- Electrical engineering
- Environmental engineering
- Pharmacy
- Chemical engineering
- Food engineering
- Civil engineering
- Mechanical engineering
- Financiers, investment specialists, government business follow-up specialist



# STAKEHOLDERS



**NiSAN Incorporation - Turkey**



**DKK-TOA Corporation - Japan**



**GRANTCHESTER Limited – United Kingdom**

We are passionate about the sustainable civilization in the clean air. Our key concern testing and inspection projects for the air pollution with our technological know-how and experiences going back many years.



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# HUMANITY NEVER DESERVE THIS



DKK-TOA Air Quality





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# AIR QUALITY MONITORING FROM DKK-TOA JAPAN



DKK-TOA Air Quality





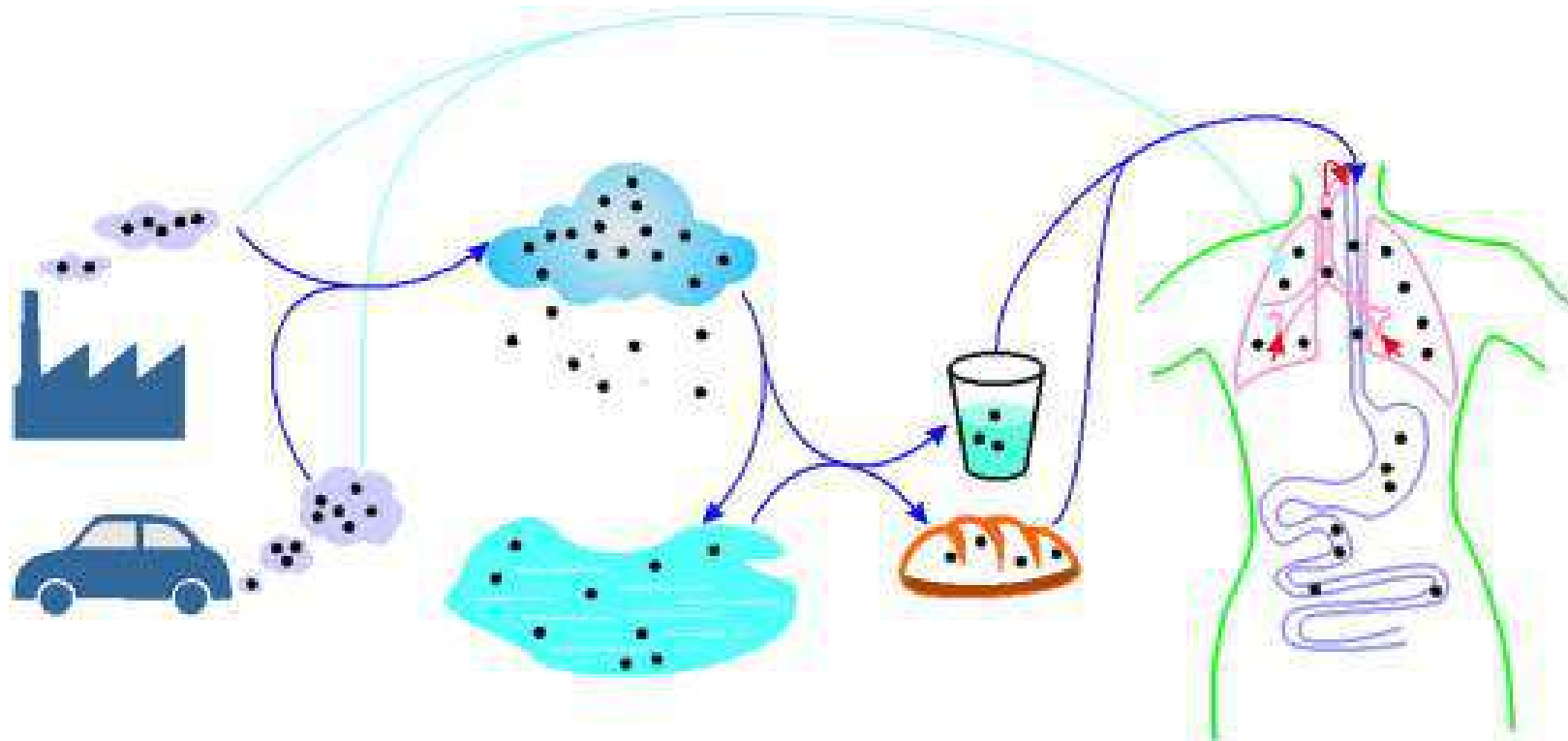
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# FIGHTING FOR AIR POLLUTION FOR A CLEANER WORLD WE LIVE IN





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# FOR THE MOTHER NATURE



**DKK-TOA Air Quality**







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# FOR HUMANITY AND CIVILISATION



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# **WE ARE HONORED TO MEET YOU INTRODUCING OURSELVES**





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PRESENTATION

DEMONSTRATION

WORKSHOP

SEMINAR

SYMPOSIUM

CUSTOMER VISIT



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PRESENTATION

DEMONSTRATION

WORKSHOP

SEMINAR

SYMPOSIUM

CUSTOMER VISIT





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# INSTRUMENT DEMONSTRATION



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# WORKSHOP



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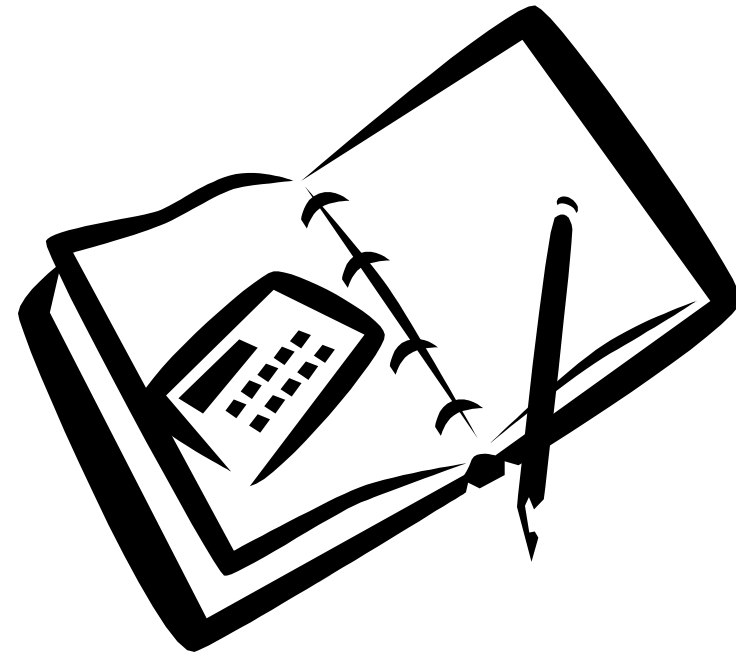
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# PREREQUISITIES & PRELIMINARY STUDIES

- Project feasibilities
- Estimated cost
- Targeted parameters and locations
- Estimated cost of analysis
- Basic process description
- List of necessary analysers
- Systems validation & SOP's and certifications

# PROJECT BUDGETARY WORKS

- Investment Costs
  - Measuring area surveying
  - Infrastructure
  - Selection of analysers
  - Installations
  - Trainings
  - Others
- Running Costs
  - Energy
  - Maintenance and repair
  - Personel & labor
  - Depreciation and amortization
  - Others





# DOCUMENTATION

- Certification
- Internal audit
- Uncertainty calculation
- Analytical validation
- Standard operation procedures
- Instruction manuals
- Technical services manuals
- On the job training document



# ACCEPTANCE

- The project is furnished with utility systems
- The utility systems consist of sample in-take attachments
- Sample preparation devices



## Acceptance Tests



**FAT** : After manufacturing, assembling, testing the equipment and certification by the manufacturers then following factory acceptance test the equipment transported directly to the site

**SAT** : Site acceptance test to integrate the equipment in the measuring location



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# DKK-TOA AIR QUALITY



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# 40 Years

# Manufacturing

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# Biggest Supplier in Japan

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# 852

# Stations in

# Japan

## DKK-TOA Air Quality

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# 2554

# Instruments in

# Japan

## DKK-TOA Air Quality

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**Good  
Quality**

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# International Market

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# US / EPA

# Approval

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# Product Range

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<b>NOx</b>	<b>GLN</b>	<b>Series</b>
<b>O3</b>	<b>GUX</b>	<b>Series</b>
<b>SO2</b>	<b>GFS</b>	<b>Series</b>
<b>CO</b>	<b>GFC</b>	<b>Series</b>
<b>PM</b>	<b>FPM</b>	<b>Series</b>
<b>THC</b>	<b>GHC</b>	<b>Series</b>



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# Standard Version



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# Enhanced **Version**



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# Pollutants

## Health Effects

## How We Measure



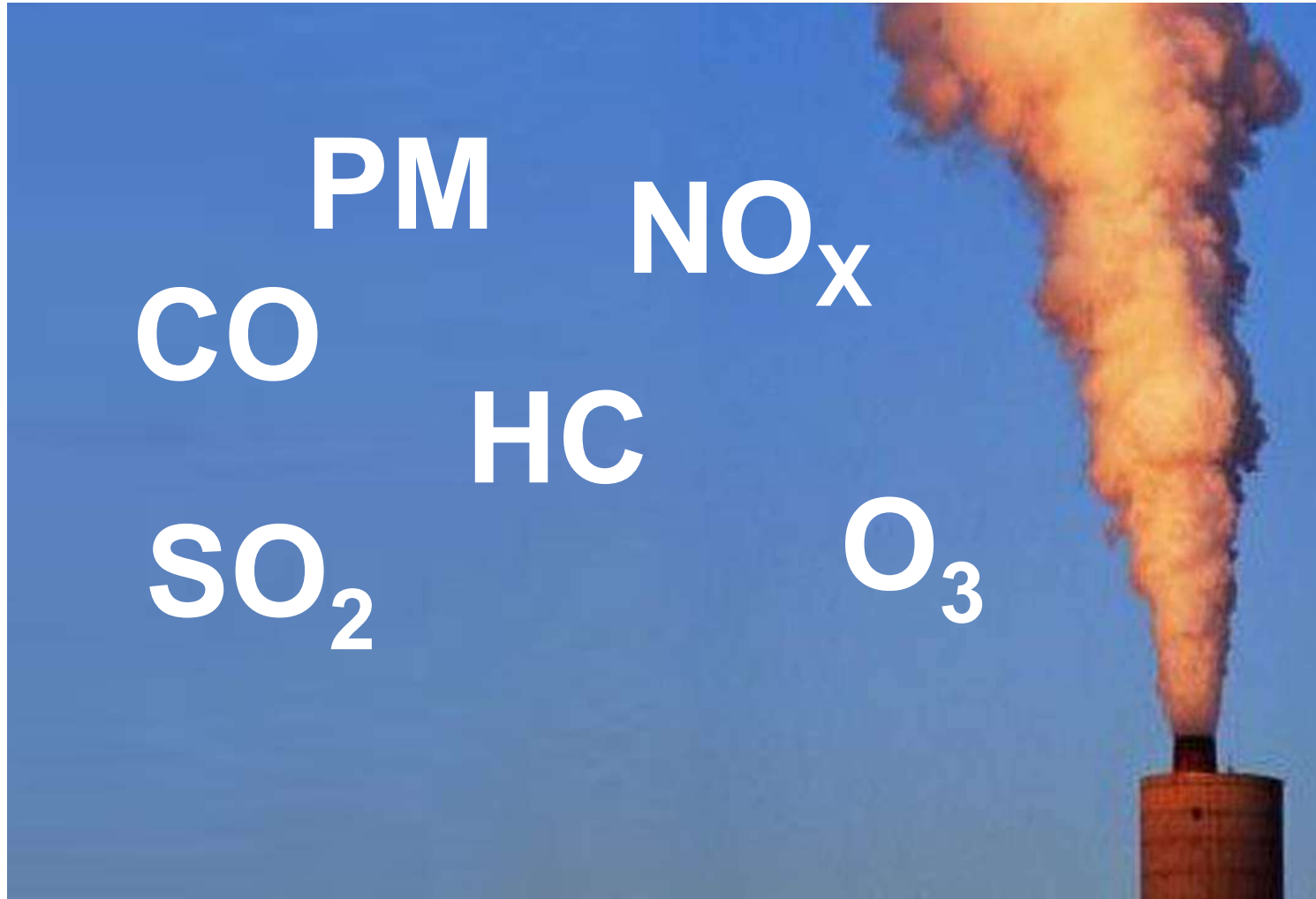


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CO NO<sub>x</sub>  
SO<sub>2</sub> **CO**  
PM O<sub>3</sub> HC



# Carbon Monoxide

## What is it ?



**Colourless, odourless, tasteless gas**

**“Silent Killer”**



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# **Carbon Monoxide**

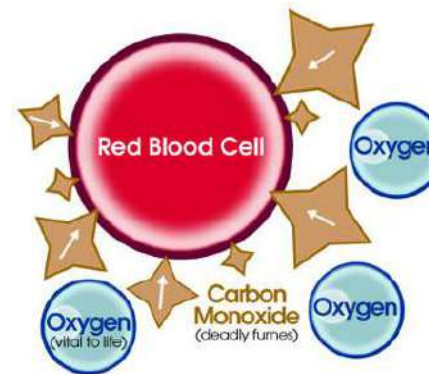
## **What causes it ?**

**Cause: incomplete combustion**

**Source: transportation sector, energy production, residential heating units, some industrial processes**



# Carbon Monoxide Health Affects



**Reacts with haemoglobin in blood**

**Forms carboxyhemoglobin (HbCO) instead of oxyhemoglobin (HbO<sub>2</sub>)**

**Prevents oxygen transfer**



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# **Carbon Monoxide**

## **Health Affects**

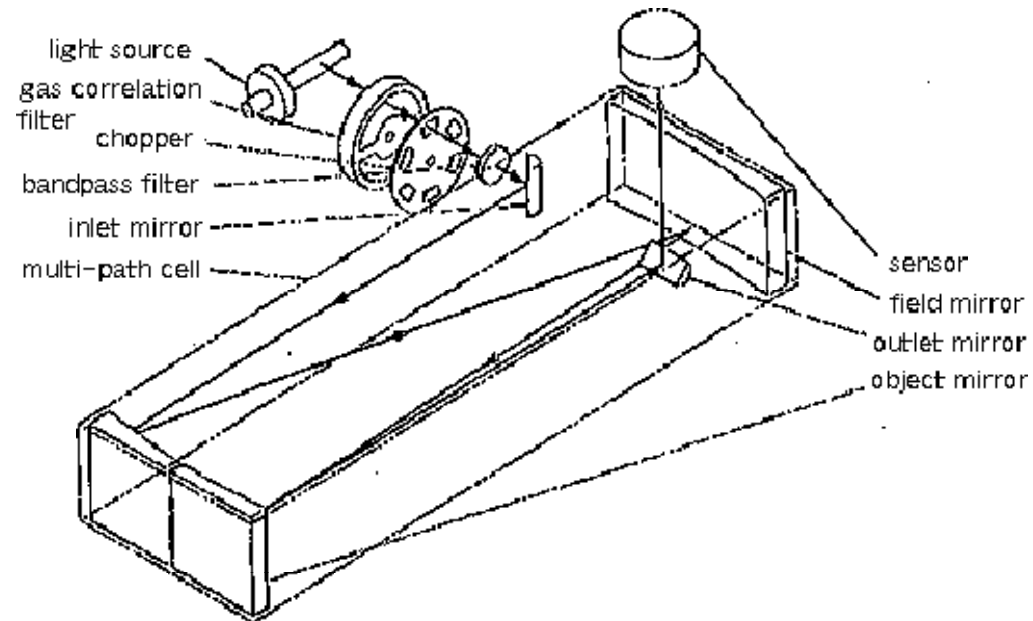
**Headaches/Nausea/Fatigue to Possible Death**

**Oxygen Deficient People Especially Vulnerable**

**(anemia, chronic heart or lung disease, high altitude residents, smokers)**

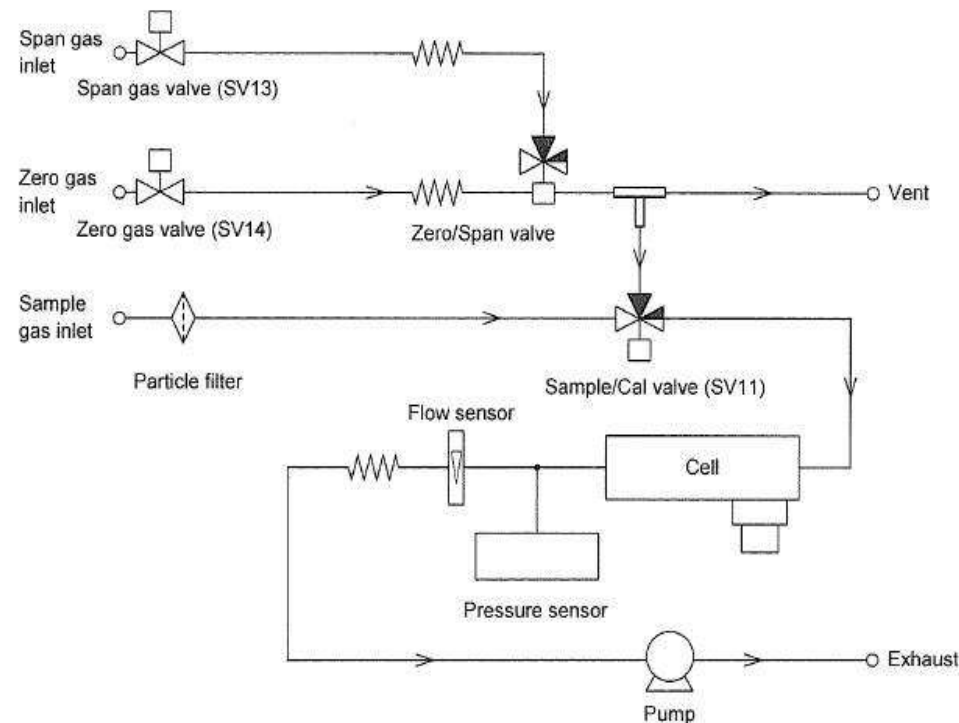
# Carbon Monoxide

## How Do We Measure It



# Carbon Monoxide

## How Do We Measure It





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# Carbon Monoxide GFC Series Analyzers



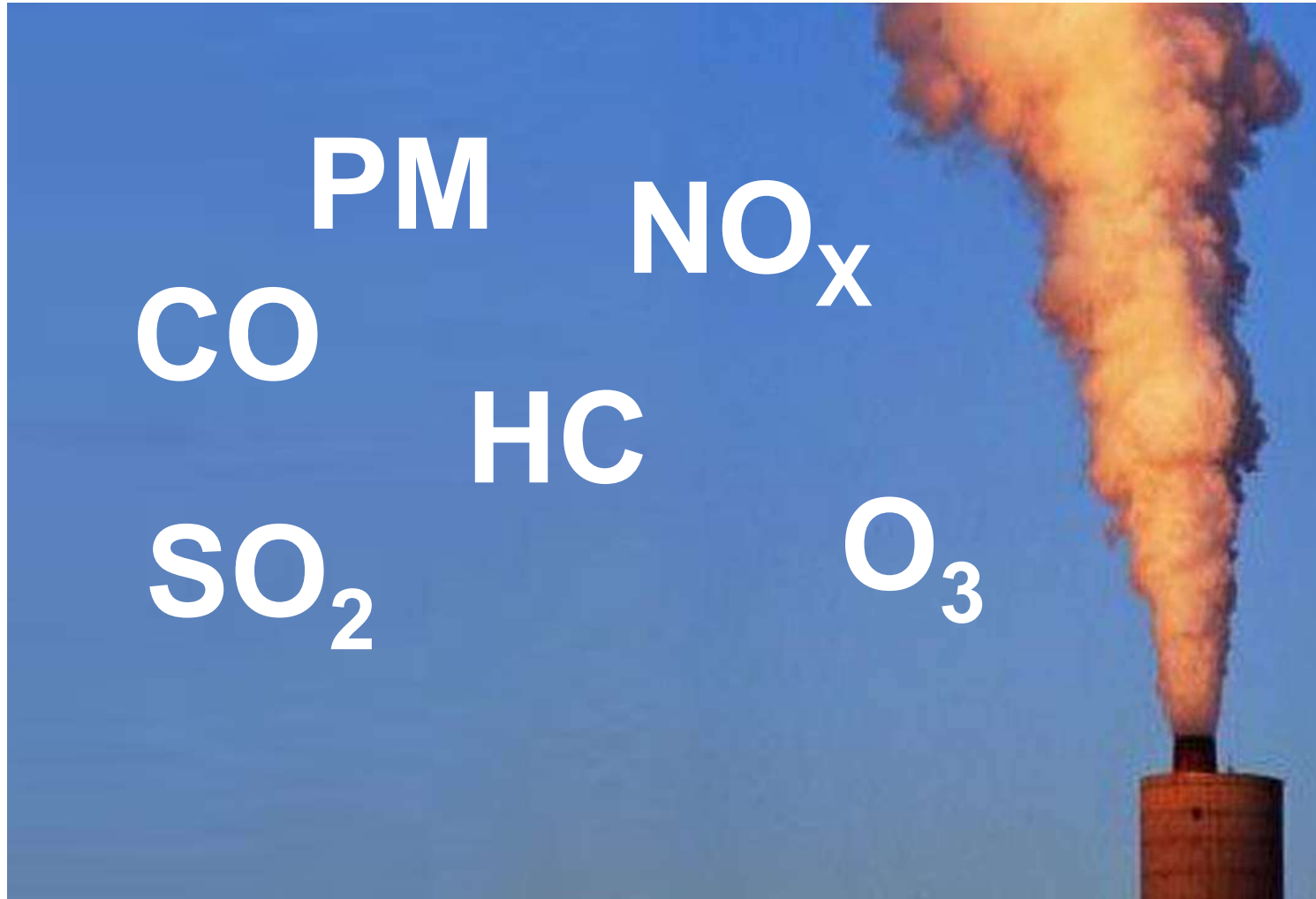


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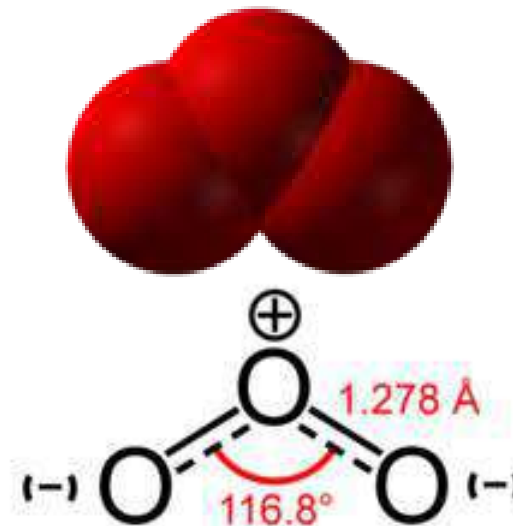
Electronics Instrumentations Company, Incorp.

CO NO<sub>x</sub>  
SO<sub>2</sub> O  
PM O<sub>3</sub> 3 HC



# Ozon

## What is it ?



Colourless gas with a pungent, irritating odour





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# Ozon

## What causes it ?

**Cause: product of photochemical rxns**

**Source: cars, power plants,  
combustion, chemical industries**



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# Ozon

## Health Affects?

**Severe E/N/T (ear/nose/throat) irritation**

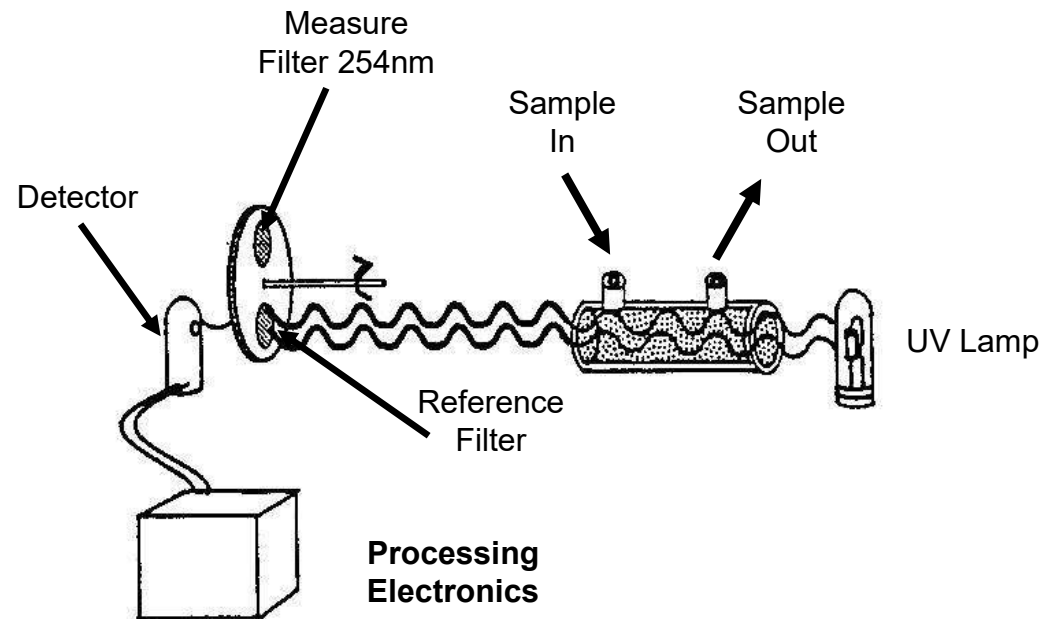
**Eye irritation at 100 ppb**

**Interferes with lung functions**

**Coughing at 2 ppm**

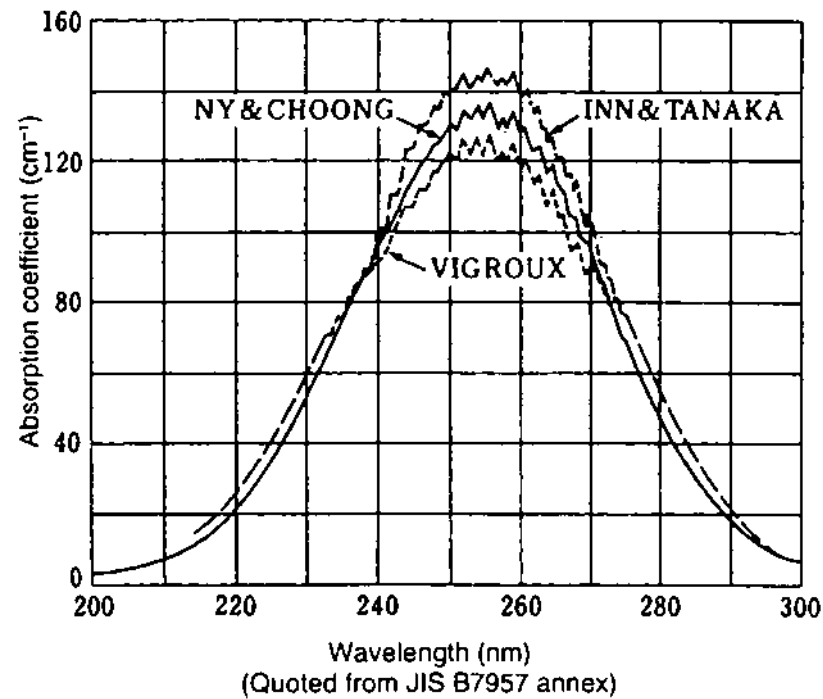
# Ozon

## How Do We Measure it?



# Ozon

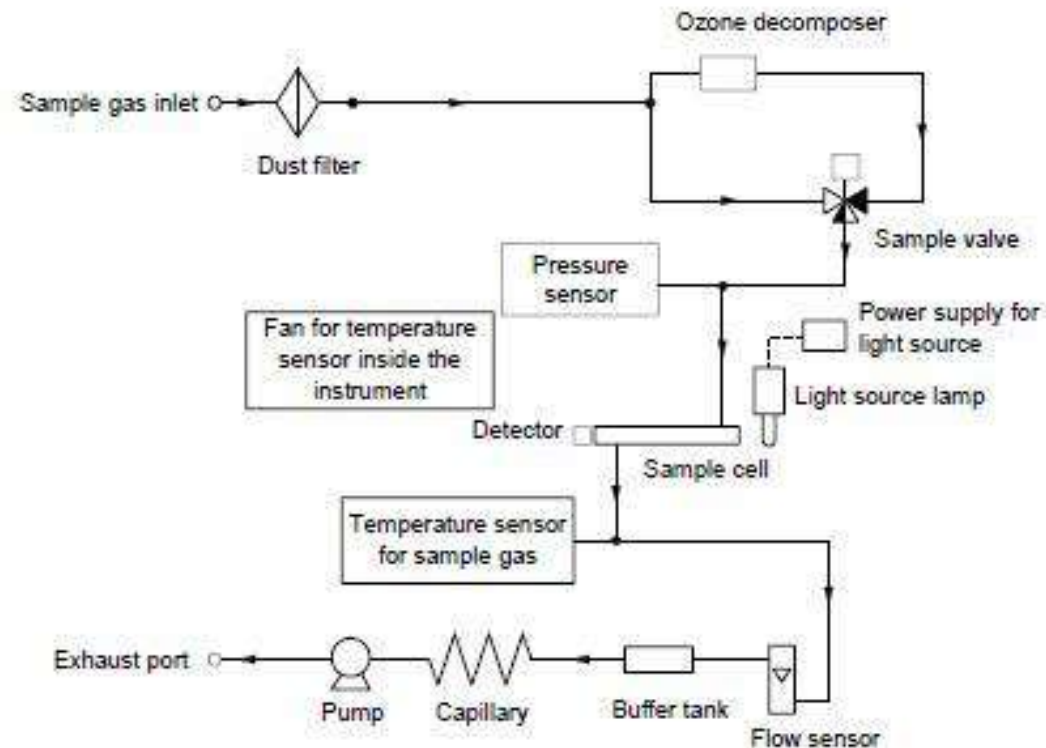
## How Do We Measure it?



Absorption spectrum of ozone

# Ozon

## GUX Series Flow Schematic





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# Ozon

## GUX Series Flow Analyzer



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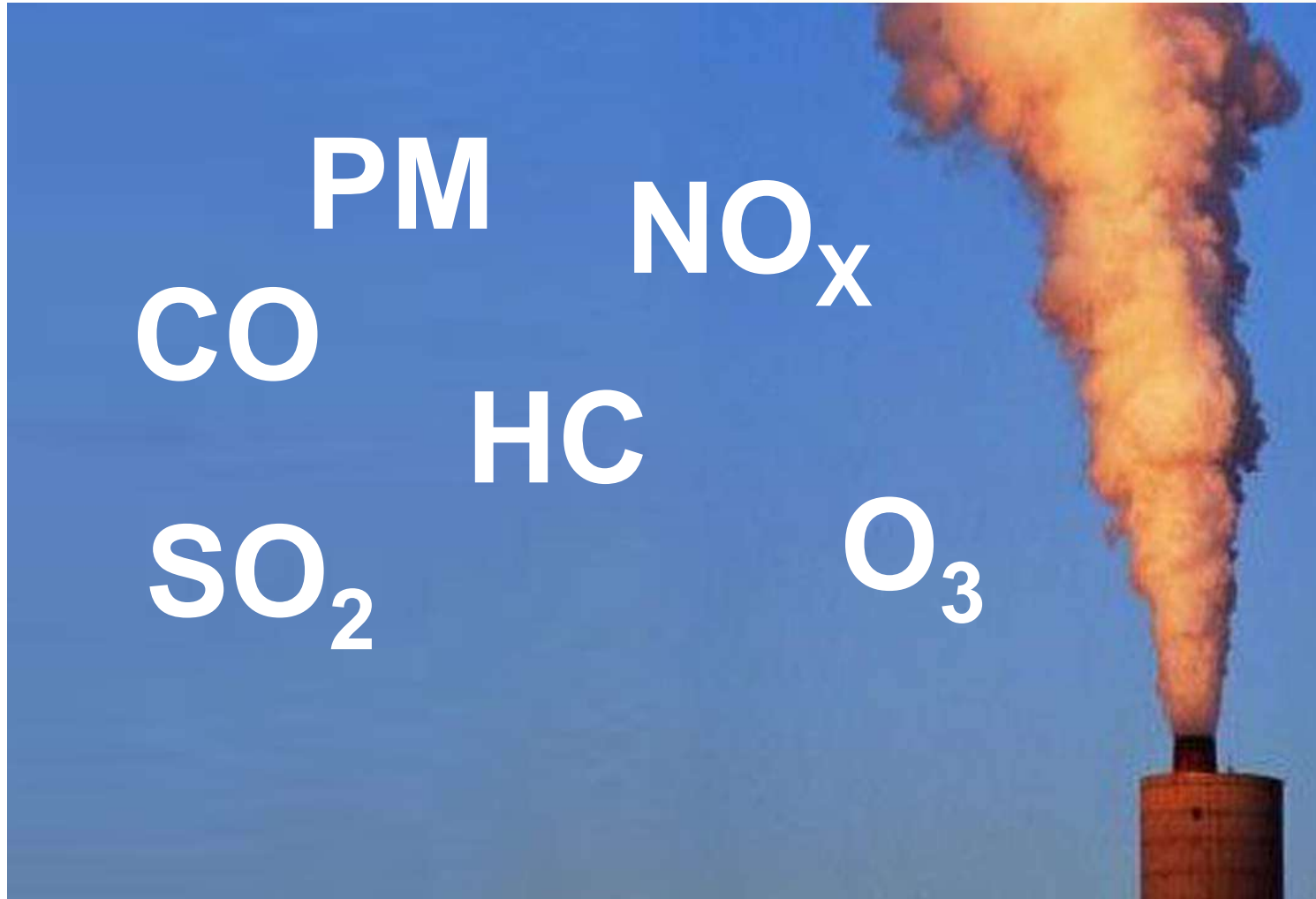


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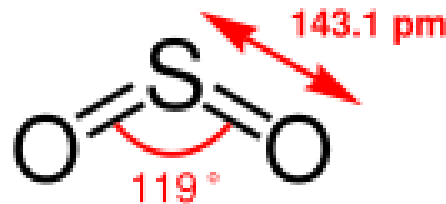
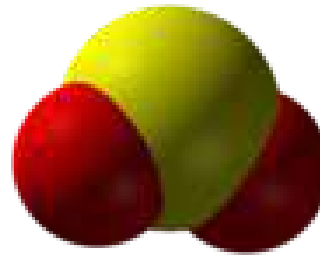
CO NO<sub>x</sub>  
SO<sub>2</sub> **SO<sub>2</sub>**  
PM O<sub>3</sub> HC





# Sulphur Dioxide

## What is it ?



Colourless gas, with a strong suffocating odour



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# **Sulphur Dioxide**

## **What causes it ?**

**Burning fuel that contains sulphur**

**Source: Electric power generation, diesel trucks**



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# **Sulphur Dioxide**

## **Health Affects**

**Soluble and absorbed by respiratory system**

**Breathing difficulty**

**Ear Nose Throat irritation**

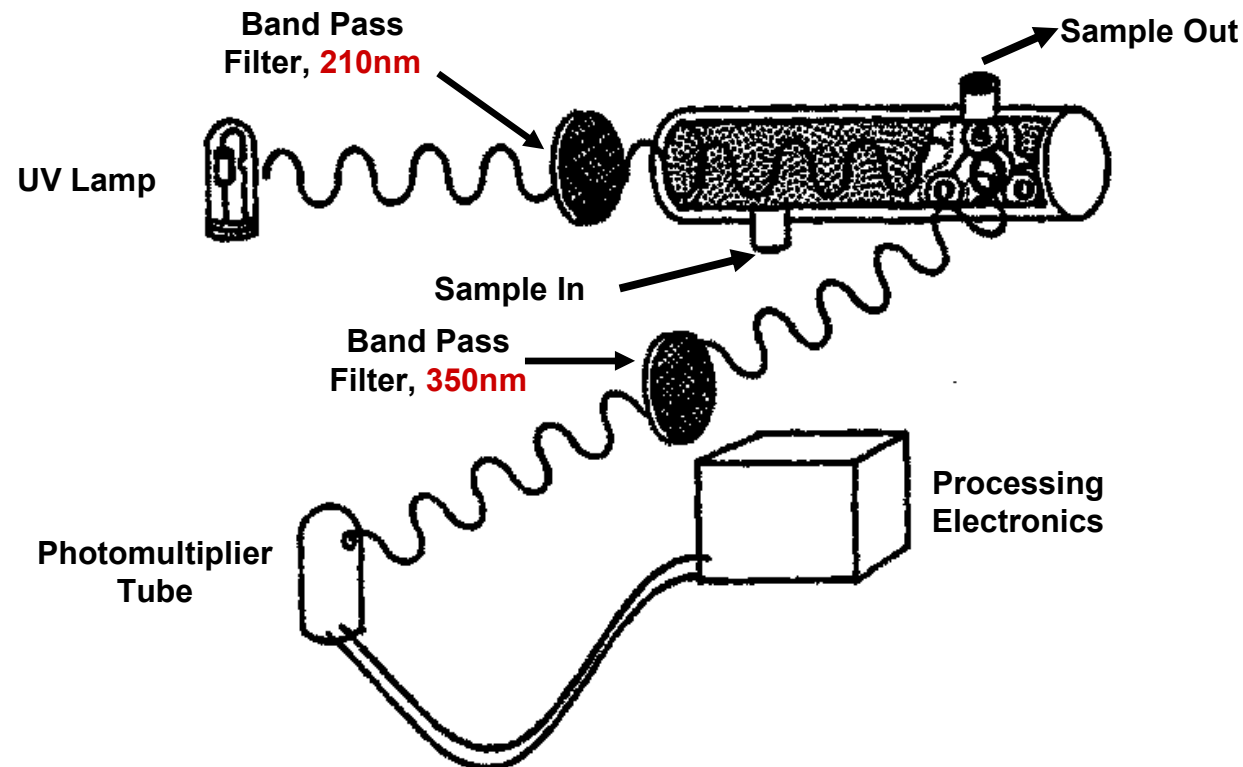
**Respiratory illness**

**Aggravates existing heart disease**

**Intensified in presence of PM**

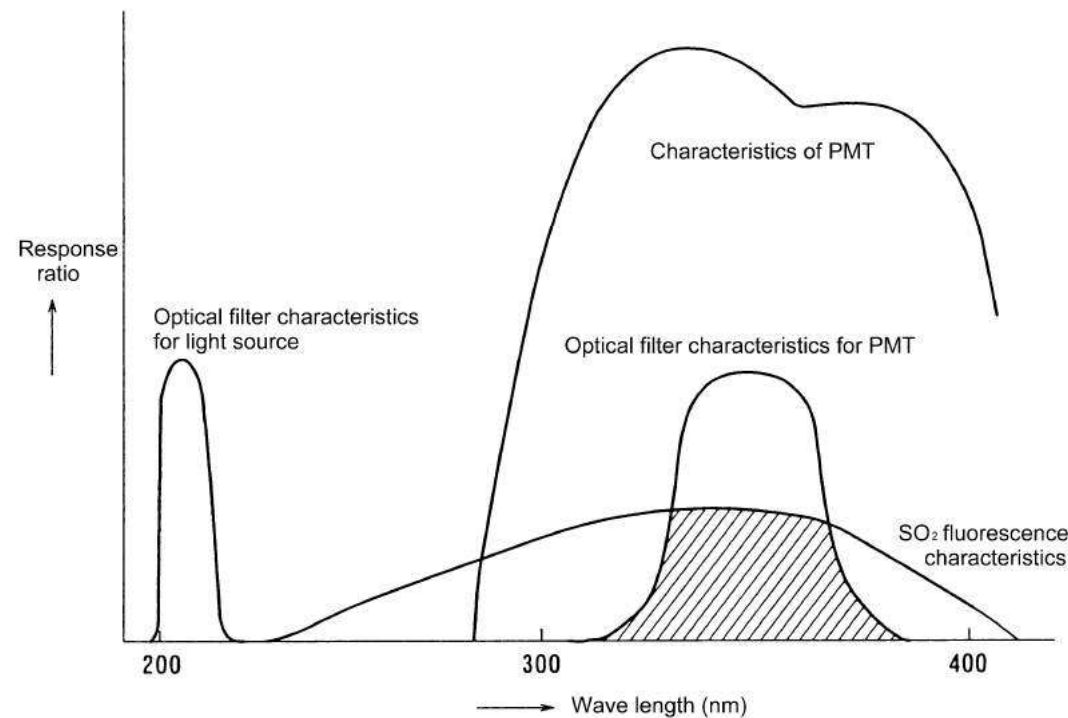
# Sulphur Dioxide

## How Do We Measure it



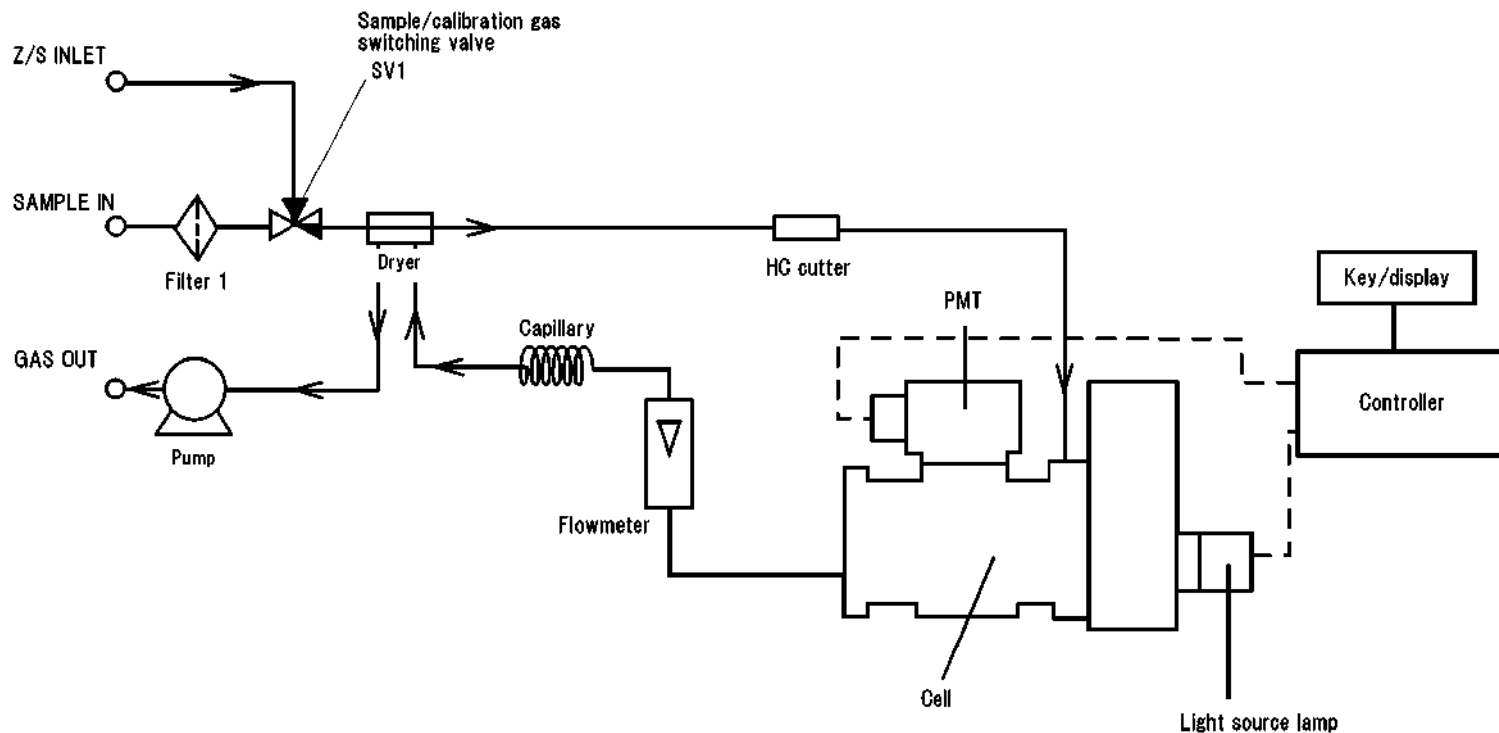
# Sulphur Dioxide

## How Do We Measure it



# Sulphur Dioxide

## GFS Series Flow Schematic





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# Sulphur Dioxide GFS Series Analyzer



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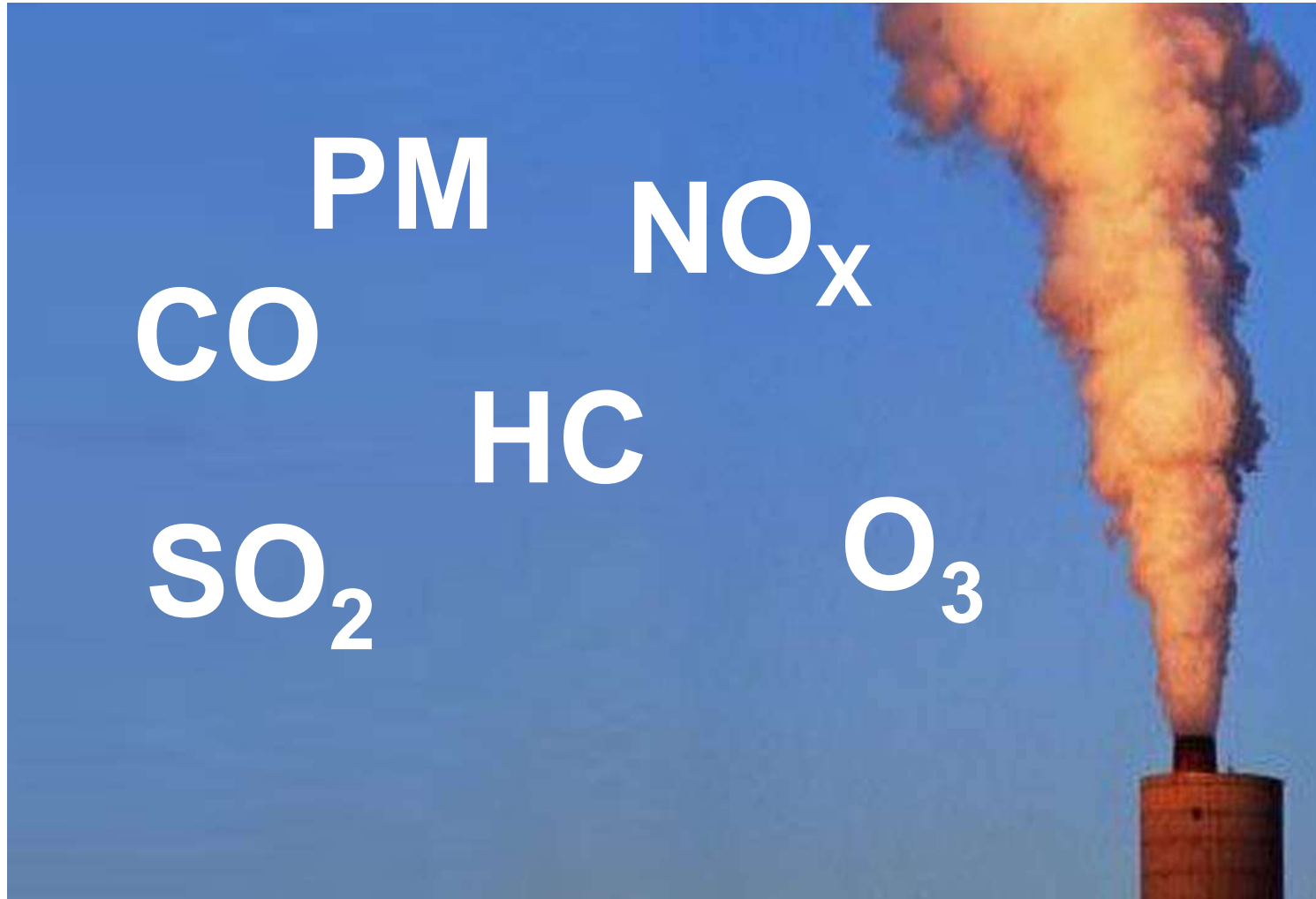


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**NiSAN**

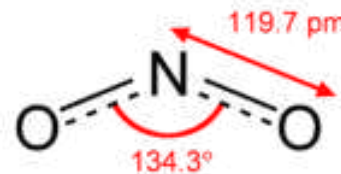
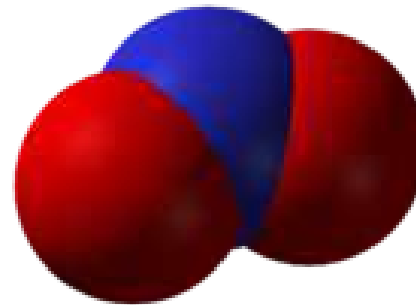
Electronics Instrumentations Company, Incorp.

CO NO<sub>x</sub>  
**NO<sub>x</sub>**  
SO<sub>2</sub> X  
PM O<sub>3</sub> HC



# Nitrogen Oxides

## What is it ?



**Reddish-brown gas, with irritating odor**



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# Nitrogen Oxides

## What causes it ?

**Cause: Fuel combustion at high temps**

**Source: mobile and stationary combustion sources**



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# **Nitrogen Oxides**

## **Health Affects**

**Toxic effects at 10-30 ppm**

**Nose and eye irritation**

**Lung tissue damage**

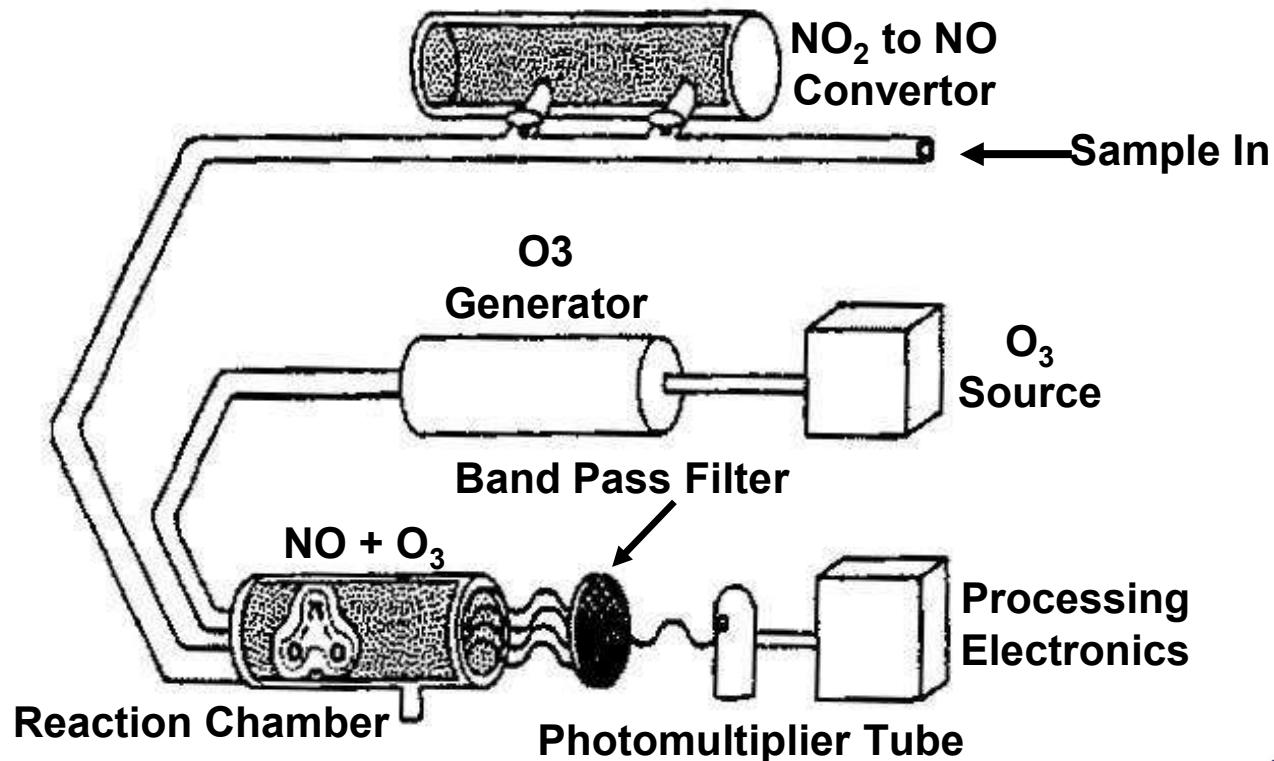
**Pulmonary edema (swelling)**

**Bronchitis**

**Aggravate existing heart disease**

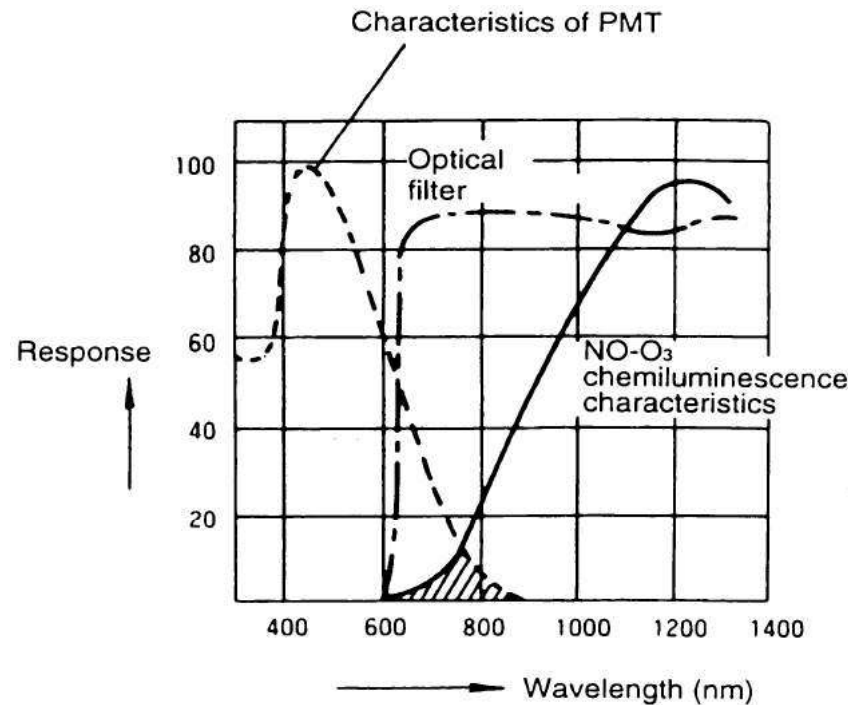
# Nitrogen Oxides

## How Do We Measure It?



# Nitrogen Oxides

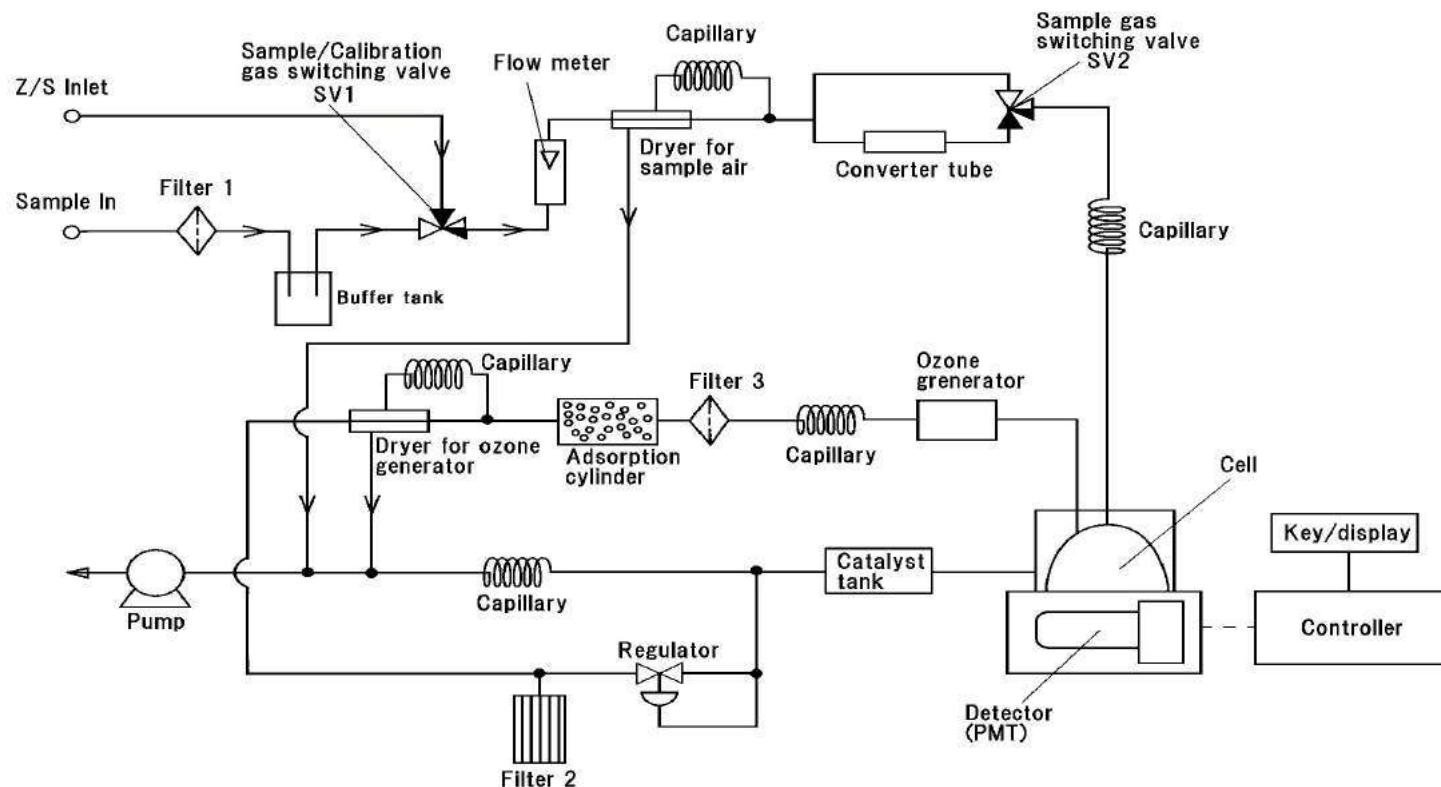
## How Do We Measure It?



Typical spectrum of NO-O<sub>3</sub> chemiluminescence

# Nitrogen Oxides

## How Do We Measure It?





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# Nitrogen Oxides GLN Series Analyser





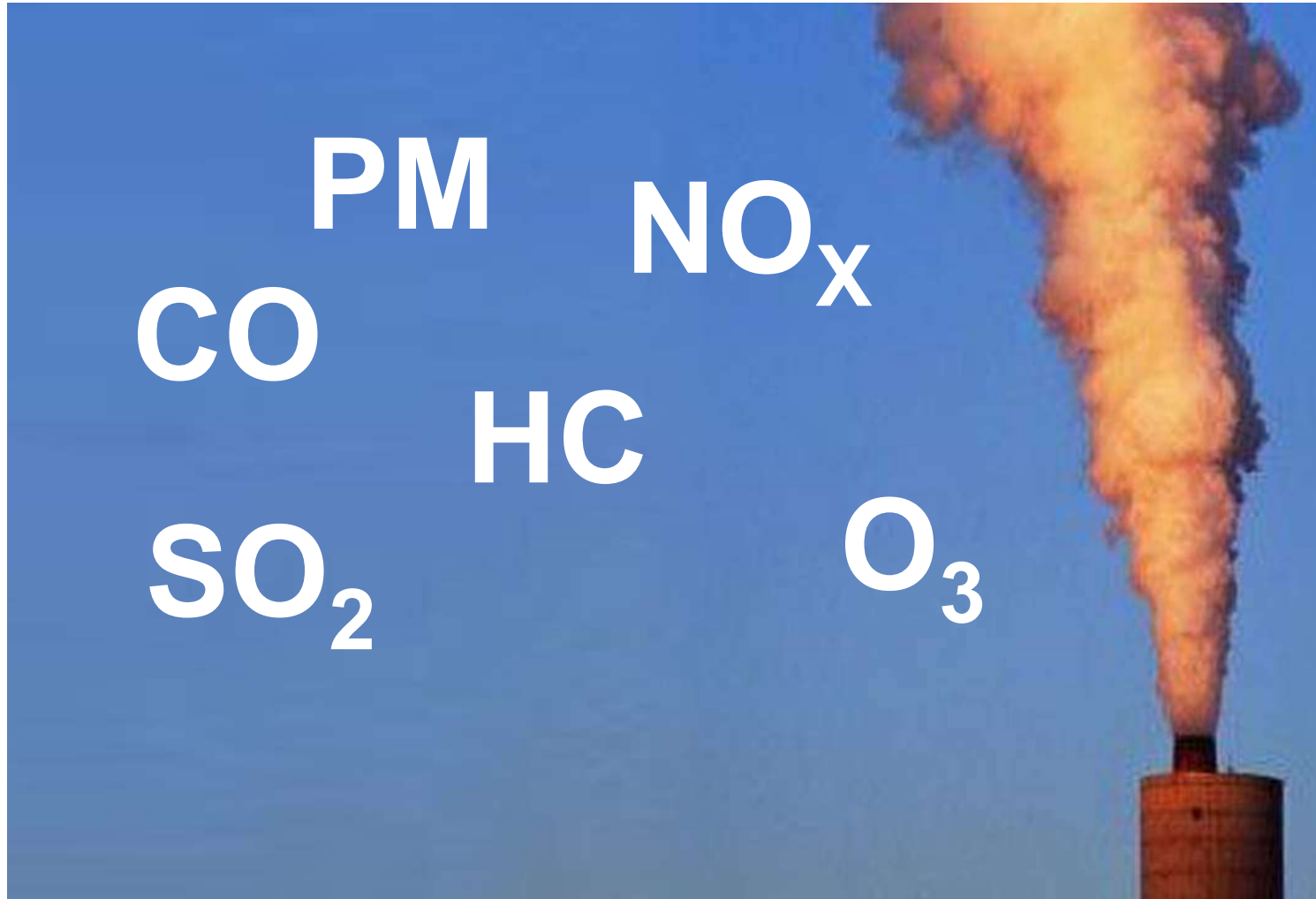


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CO NO<sub>x</sub>  
SO<sub>2</sub> **PM**  
PM O<sub>3</sub> HC





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# Particulate Matter

## What is it ?

### Total Particulates (TSP)

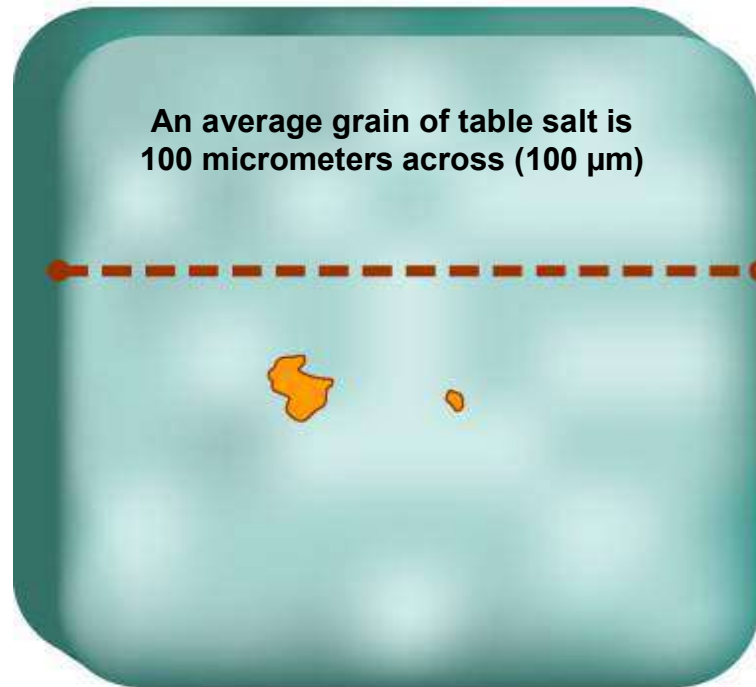
PM10

PM2.5

# Particulate Matter

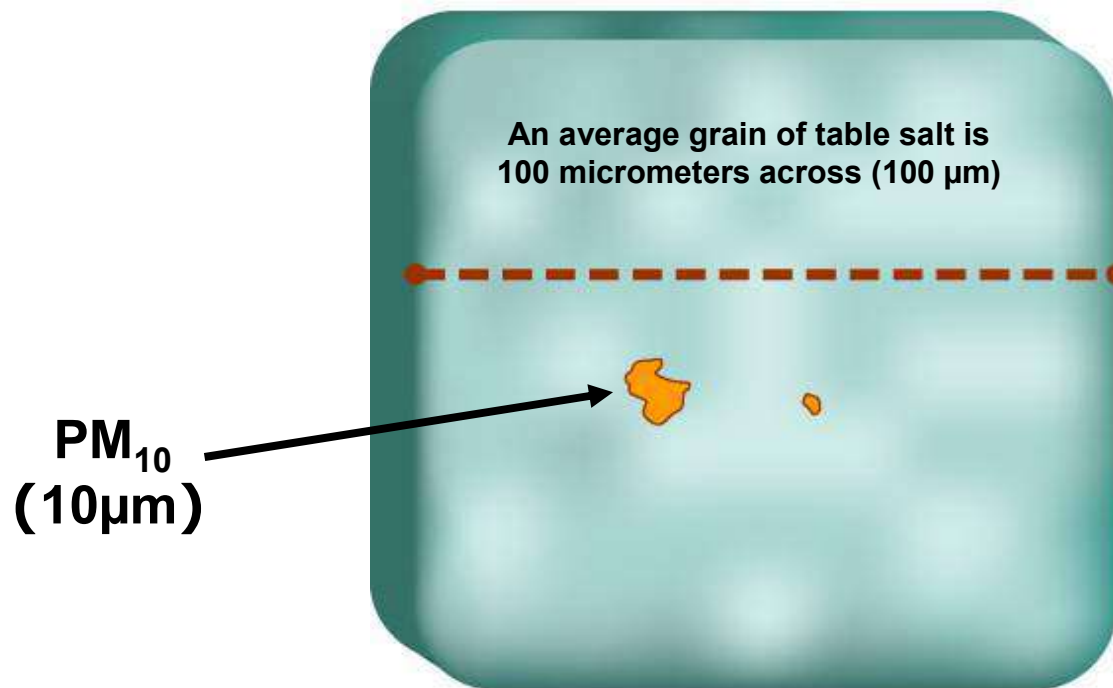
## What is it ?

An average grain of table salt is  
100 micrometers across (100  $\mu\text{m}$ )



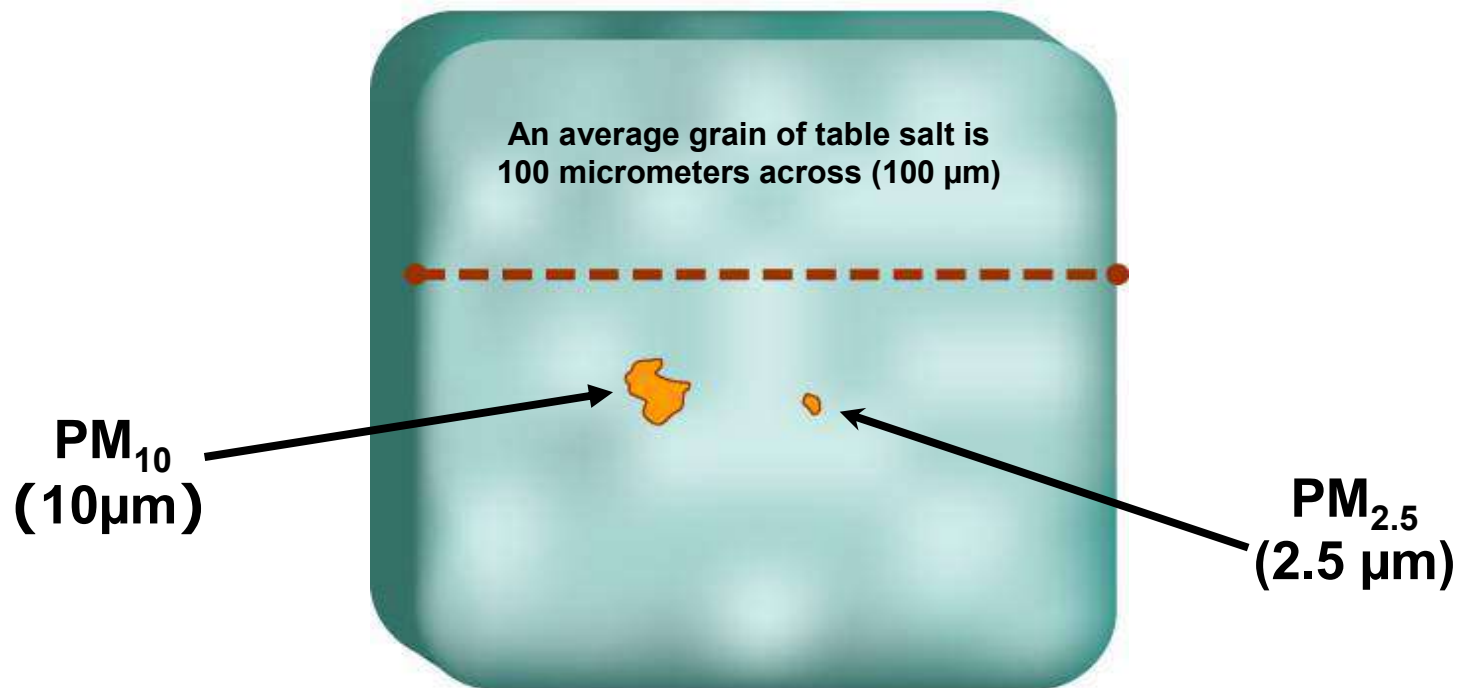
# Particulate Matter

## What is it ?



# Particulate Matter

## What is it ?





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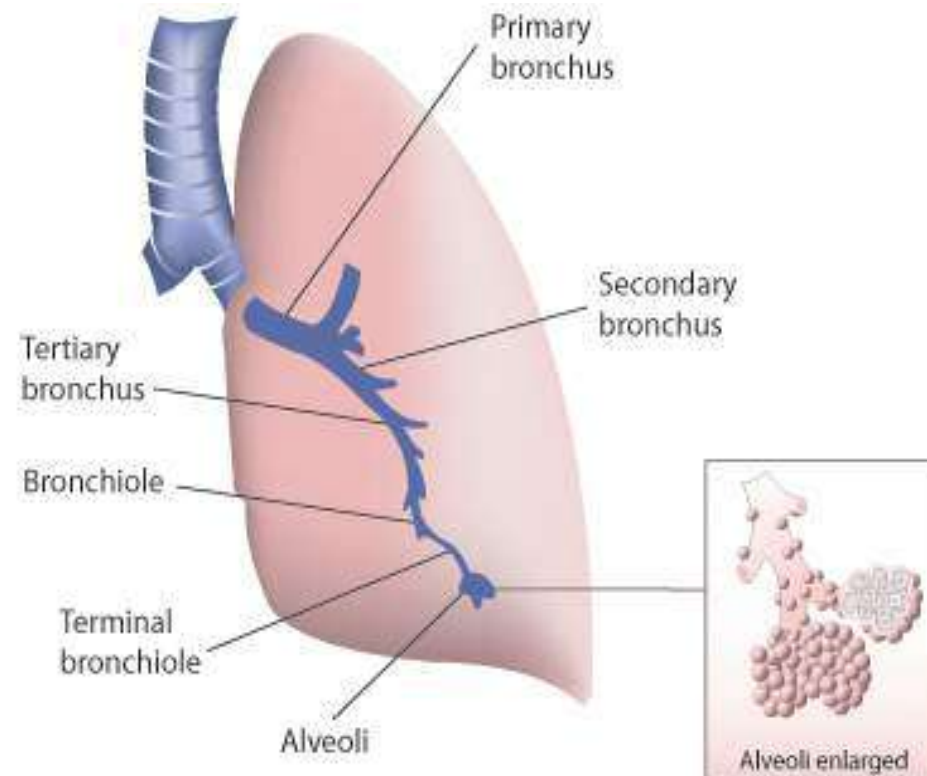
# Particulate Matter

## What Causes It ?

**Causes: materials handling, combustion processes, gas conversion reactions**

**Main sources: industrial processes, coal and oil burning, vehicles**

# Particulate Matter Health Affects







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# Particulate Matter

## Health Affects

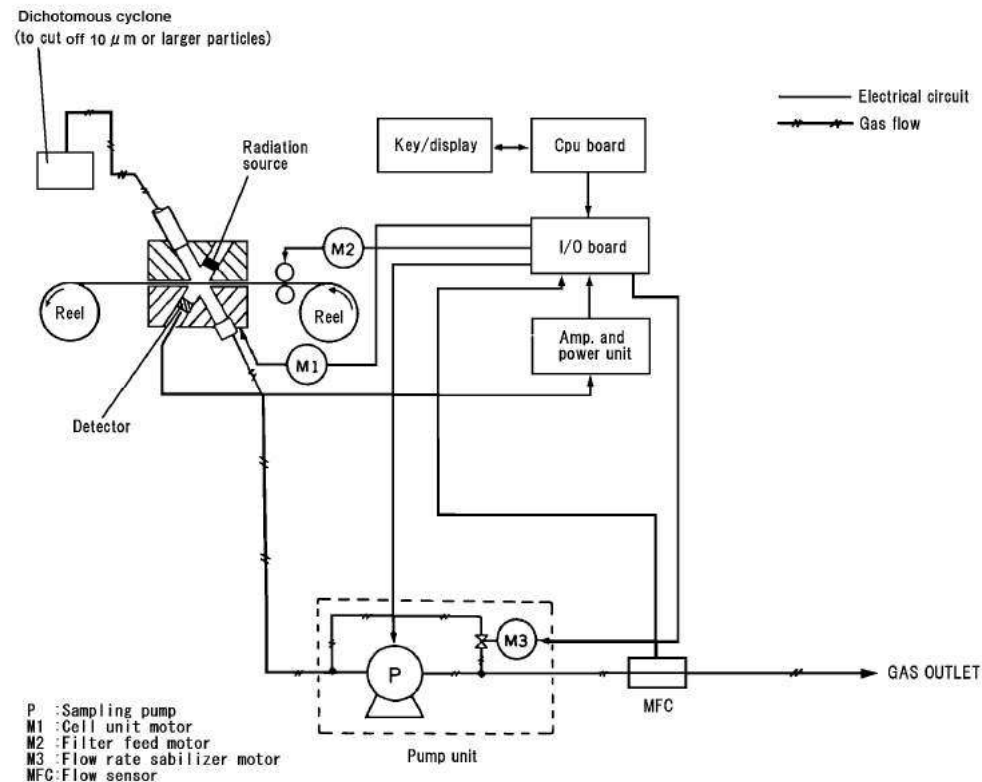
**Wheezing and coughing to heart attacks and death**

**Makes existing conditions worse.....**

**bronchitis, asthma, pneumonia, and cardiac disease**

# Particulate Matter

## How Do We Measure It?





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# Particulate Matter

## How Do We Measure It?





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# Particulate Matter FPM Series



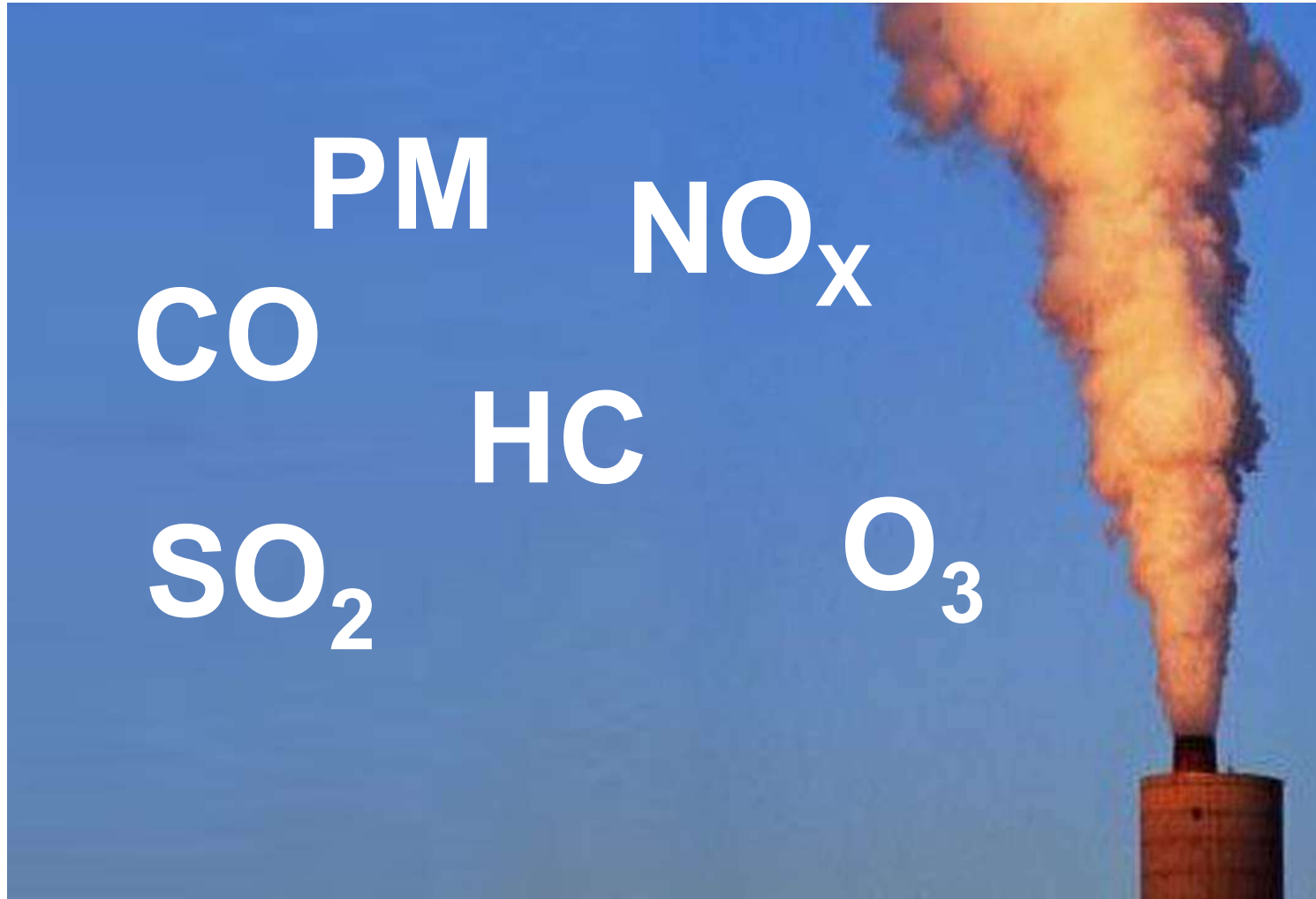


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CO NO<sub>x</sub>  
**Monitoring**  
SO<sub>2</sub> **Stations**  
PM O<sub>3</sub> HC





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# Typical Monitoring Fixed Station



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**Analytical Instruments**  
**Weather Instruments**  
**Data Logger**  
**Storage, Transmission**  
**Calibration**  
**Support Equipment**  
**Structure**





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# Ambient Air Pollution Monitoring Typical Monitoring System



Monitoring Station



Monitoring Station  
(Interior View)



Central Station



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# Typical Monitoring Mobile Van





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# Ambient Air Pollution Monitoring Typical Monitoring System



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# Ambient Air Pollution Monitoring Typical Monitoring System



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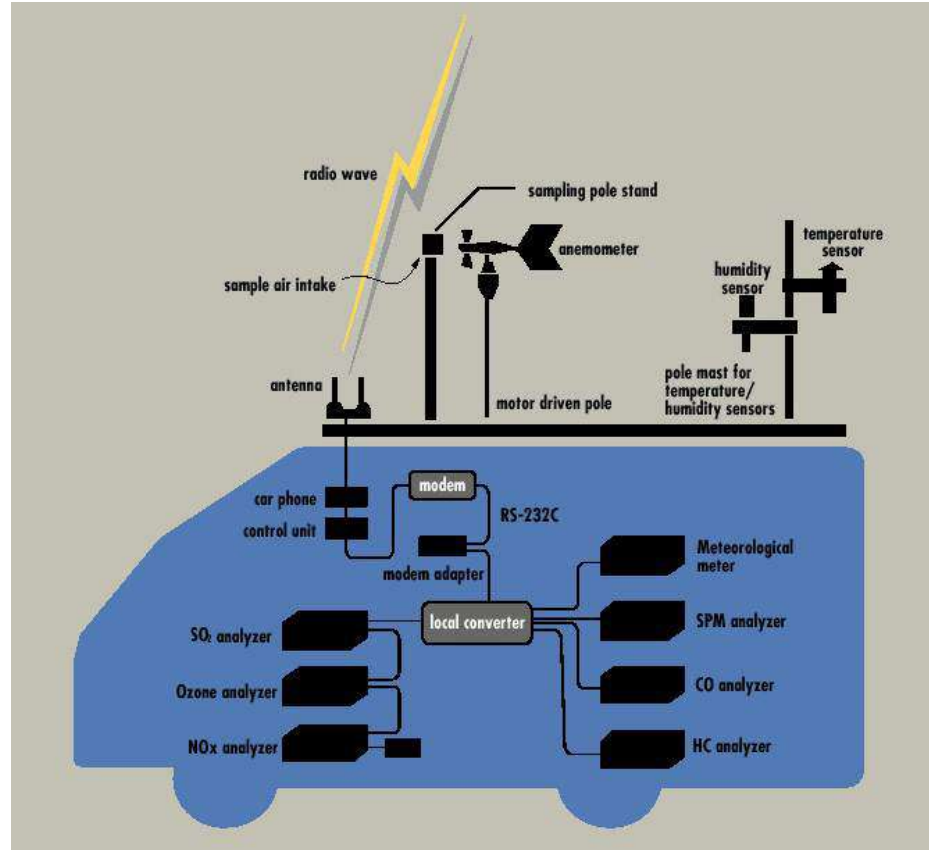


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# Ambient Air Pollution Monitoring Typical Monitoring System





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# Ambient Air Pollution Monitoring Typical Monitoring System



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**Thank you  
For your attention**

Ihsan Haslaman

[management@nisan-elektronik.com](mailto:management@nisan-elektronik.com)

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+90 532 512 28 68

