

# PT Sinergi Mitra Analitika

Custom Laboratory Solution

Produsen Furniture  
Laboratorium



## About

- ▶ **PT SINERGI MITRA ANALITIKA** adalah perusahaan yang mengkhususkan diri untuk pekerjaan desain dan pembangunan laboratorium. Lingkup pekerjaan kami meliputi desain, produksi Furniture Laboratorium, instalasi hingga maintenance-nya.
- ▶ Kami memiliki tenaga ahli yang berpengalaman dan bahan baku terbaik untuk memberikan hasil yang memuaskan dengan standar kualitas tinggi. Kami memiliki workshop sendiri, sehingga harga akan sangat kompetitif.

# Legalitas Perusahaan

- ▶ Surat Izin Usaha Perdagangan (SIUP)  
Nomor : 17889-04/PM /1.824.271
- ▶ Akta Pengesahan Pendirian Perusahaan Dibuat Oleh :  
Notaris Eka Astri Maerisa, SH., MH., M.Kn  
Nomor : AHU-819.AH.02.01 Tahun 2011  
Tanggal : 20 Agustus 2014
- ▶ Nomor Pokok Wajib Pajak (NPWP)  
71.039.171.5-017.000

# Product & Service

Produk kami meliputi seluruh furniture dan equipment untuk laboratorium diantaranya :

- **Lemari Asam (Fume Hood)**
- **Wet Scrubber**
- **Laminar Air Flow**
- **Laboratory Benches (Wall Bench, Island Bench)**
- **Cabinet (Basic, Hanging, Flammable, Acid, Glassware, etc)**
- **Balance Table (Anti Vibrational Table)**
- **Laboratory Accessories & Fitting**
- **Laboratory Safety (Emergency shower, Emergency eye wash)**
- **Steel Fabrication**
- **General Lab & Instrument service and repair**
- **Laboratory design & consult**

# Fume Hood



- Ventilated enclosure in laboratory
- Protects personnel from chemical hazards
- Captures, contains and exhausts hazardous or toxic vapors, gases, fumes and particulates
- Physical barrier from explosion, chemical splashes and violent chemical reactions
- Not suitable for working with regulated infectious agent



# Anatomy of Fume Hood

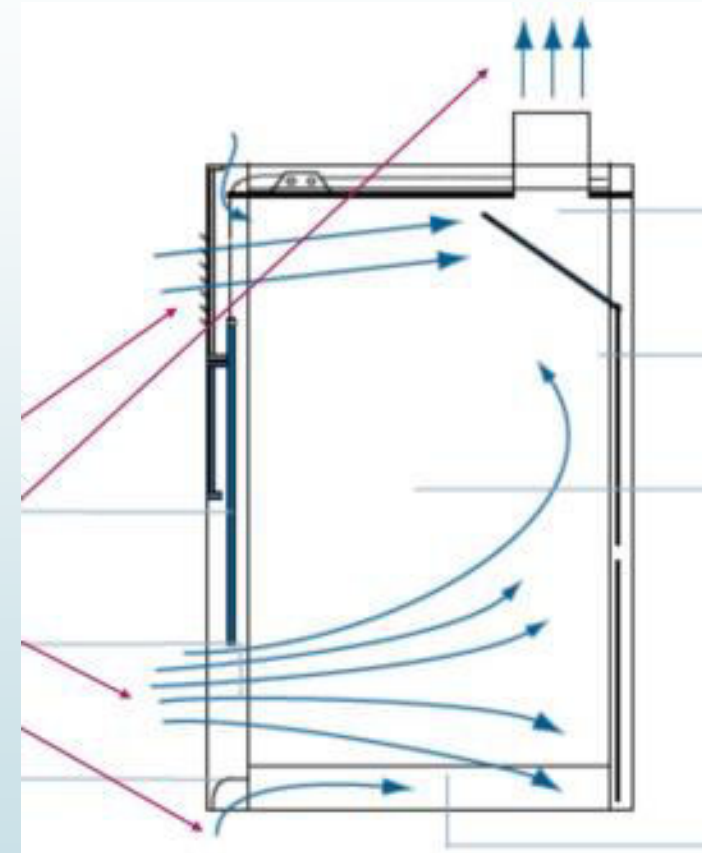
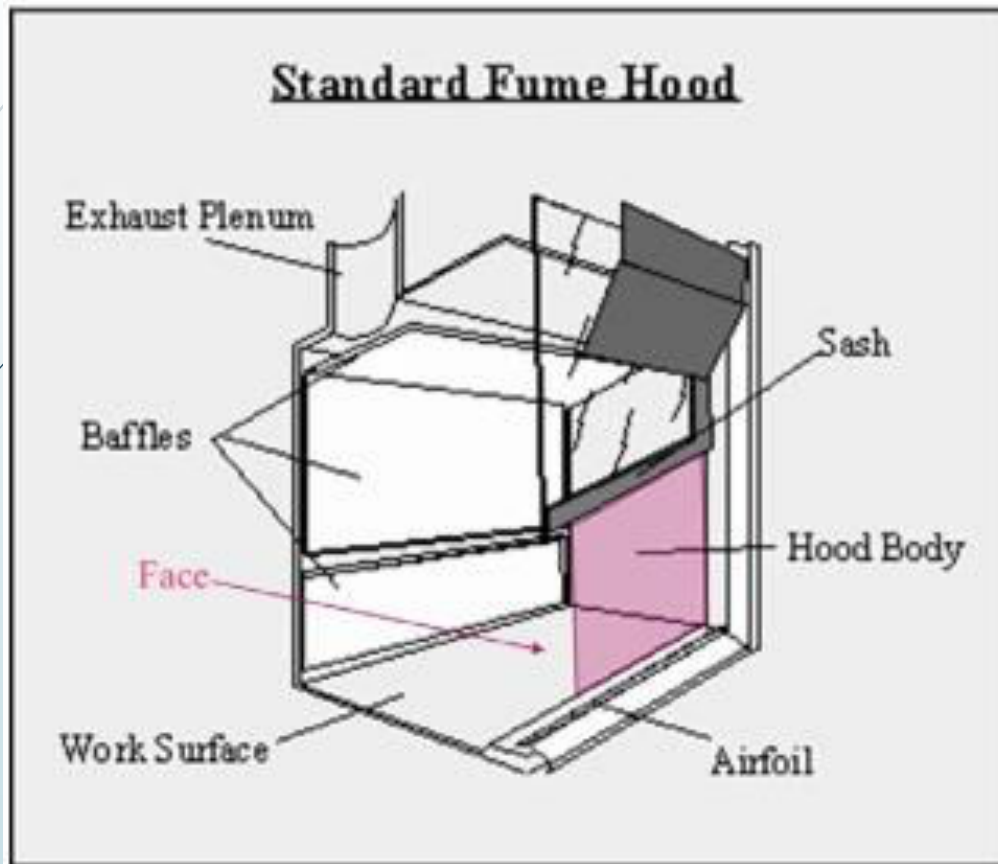
- **Hood Body** : The visible part of the fume hood that serves to contain hazardous gases and vapors.
- **Baffles** : Moveable partitions used to create slotted openings along the back of the hood body. Baffles keep the airflow uniform across the hood opening, thus eliminating dead spots and optimizing capture efficiency.
- **Sash** : By using the sash to adjust the front opening, airflow across the hood can be adjusted to the point where capture of contaminants is maximized. Each hood is marked with the optimum sash configuration. The sash should be held in this position when work involving the fume hood is being performed and closed completely when the hood is not in use.
- **Airfoil** : Found along the bottom and side edges, airfoils streamline airflow into the hood, preventing the creation of turbulent eddies that can carry vapors out of the hood. The space below the bottom airfoil provides source of room air for the hood to exhaust when the sash is fully closed.



# Anatomy of Fume Hood

- **Work surface** : Generally a laboratory bench top, or the floor in the case of a floor-mounted or walk-in hood, this is the area under the hood where work is conducted or apparatus is placed for use.
- **Exhaust plenum** : An important engineering feature, the exhaust plenum helps to distribute airflow evenly across the hood face. Materials such as paper towels drawn into the plenum can create turbulence in this part of the hood, resulting in areas of poor airflow and uneven performance.
- **Face** : The imaginary plane running between the bottom of the sash to the work surface. Hood face velocity is measured across this plane in linear feet per minute (fpm).

# Anatomy of Fume Hood





# FumeHood

Ada tiga jenis Fumehood yang kami produksi berdasarkan material structure - nya:

- Full Polypropylene
- Steel Finishing Powder Coating
- Multiplex Laminated HPL

Jenis Table Top yang digunakan :

- ✓ Nero Granite
- ✓ Phenolic Resin



# FumeHood PP

- Material Structure : polypropylene highly chemical resistant
- Interior workspace and baffle material : polypropylene
- Table top : Phenolic Resin laboratory grade
- Full bending and welding system to build structures
- Acid cabinet under workspace
- Tempered glass 5 mm sash door
- Sash door with balance system
- Electrical socket Panasonic™ / equivalent
- Optional : PP Cup sink ; single water faucet



# FumeHood Steel

- Material structure : steel powder coating
- Interior and Baffle: Phenolic Resin laboratory grade
- Table Top : Nero Granite (High Chemical and Heat Resistance)
- Safety laminated clear glass 5 mm sash door
- Sash door with balance system
- Electrical socket Panasonic™ / equivalent
- Optional : PP Cup sink; single water faucet; Gas faucet



# FumeHood Wood

- Material structure : Multiplex Laminated HPL
- Interior and Baffle: Multiplex Laminated HPL
- Table Top : Phenolic Resin laboratory grade
- Safety laminated clear glass 5 mm sash door
- Sash door with balance system
- Electrical socket Panasonic™ / equivalent
- Optional : PP Cup sink; single water faucet



# Wet Scrubber

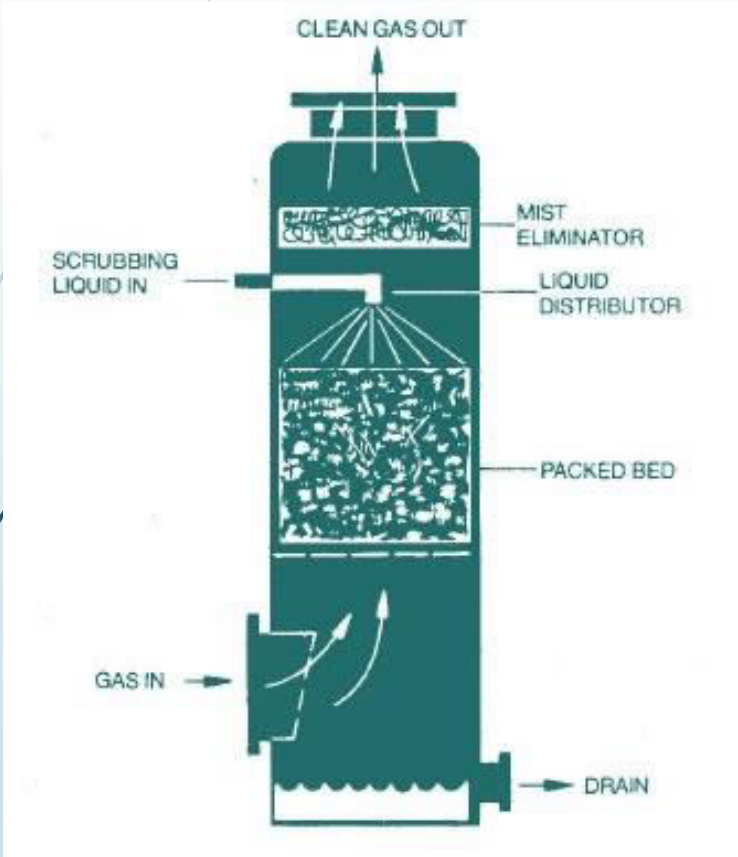


**A Wet Scrubber** is an air pollution control device that removes PM and acid gases from waste gas streams of stationary point sources.

Particulate matter (PM) is the general term used for a mixture of solid particles and liquid droplets suspended in air.

The pollutants are removed primarily through the impaction, diffusion, interception and/or absorption of the pollutant onto droplets of liquid. The liquid containing the pollutant is then collected for disposal.

# How it Works



Pollutant laden gases enter at the bottom of the tower and rise upward, making contact with the scrubbing liquid draining down through the packed column and established a thin film.

Since the pollutant concentration decreases as the gas rises, there is constantly fresher solvent available for contact, resulting in an efficient removal of contaminants.

The fine moisture droplets, still suspended in the cleaned gas stream, are removed by a mist eliminator. Scrub liquid from the eliminator is collected in an integral reservoir and recycled to the tower.

# Advantages



- Relatively low pressure drop - Pressure drop is the pressure difference that occurs as exhaust gas is pushed or pulled through the scrubber, disregarding the pressure that would be used for pumping or spraying the liquid into the scrubber.
- Capable of achieving relatively high mass-transfer efficiencies
- Relatively low capital cost and comparable operation and maintenance (O&M) costs
- Relatively small space requirements
- Ability to collect Particulate Matter (PM) as well as gases

# Anatomy of Wet Scrubber



**Column Shell** : may be made of steel or plastic, or a combination of these materials depending on the corrosiveness of the gas and liquid streams, and the process operating conditions.

**Mist eliminator** : remove liquid entrainment from gas streams, make it fall back into the column.



**Liquid distributors** : is designed to wet the packing bed evenly and initiate uniform contact between the liquid and vapor. The liquid distributor must spread the liquid uniformly, resist plugging and fouling, provide free space for gas flow, and allow operating flexibility.



# Anatomy of Wet Scrubber



**packing materials** : provide a large wetted surface for the gas stream maximizing the area available for mass transfer. Packing materials are available in a variety of forms, each having specific characteristics with respect to surface area, pressure drop, weight, corrosion resistance, and cost. Most of them are made from metal or plastic.



**packing support** : it is hold the packing above the open space. It must have enough strength to carry the weight of the packing, and enough free area to allow solvent and gas to flow with minimum restrictions.

**Pump** : recirculate the liquid

# Applications



Generally, our Wet Scrubber design are used to control :

**Inorganic fumes, vapors, and gases** (e.g., chromic acid, hydrogen sulfide, ammonia, chlorides, fluorides,  $\text{SO}_2$ , etc). This is the primary pollutants controlled by the Wet Scrubber.

They typically achieve removal efficiencies in the range of 95 – 99%.

# Applications



Wet scrubbers also useful in the removal of PM with the following characteristics :

- Sticky and/or hygroscopic materials (materials that readily absorb water);
- Combustible, corrosive and explosive materials;
- Particles which are difficult to remove in their dry form;
- PM in the presence of soluble gases; and
- PM in waste gas streams with high moisture content.

Removal efficiencies range from 50-95 %, depending upon the application.

# Laminar Flow Cabinet

**Laminar Flow Cabinets** menciptakan lingkungan kerja bebas partikel dengan menarik udara melalui sistem filtrasi (biasanya menggunakan HEPA filter) dan mengalirkannya di permukaan kerja dalam aliran udara laminar atau uni-directional.

Tipe Laminar Flow Cabinet yang kami produksi adalah :

- Vertical Laminar Flow Cabinet
- Horizontal Laminar Flow Cabinet

Material Structure : Steel Powder Coating  
Worktop : Stainless Steel 304



# Biosafety Cabinet

**Biosafety Cabinets (BSC)** also known as Biological Safety Cabinet, are enclosed, ventilated laboratory workspace areas designed to protect the user and surrounding environment from pathogens. All exhaust air is HEPA/ULPA filtered to remove hazardous agents such as viruses and bacteria. Biosafety cabinets are used in many laboratories including clinical and research labs.

BSC Divided into Three classes : I, II, and III.



# Biosafety Cabinet

## **Class I :**

Provides protection for the user and surrounding environment, but no protection for the sample.

## **Class II :**

Provides protection for the user, environment, and sample, and is divided into four types : A1, A2, B1, and B2.

Used in microbiology labs, pharmaceutical labs, and cancer research labs.

## **Class III :**

Also known as glove boxes, provides maximum protection; the enclosure is gas-tight, and all material enter and leave through a dunk tank or double door autoclave.

# Wall Bench

Ada beberapa jenis Wall Bench berdasarkan material structure - nya:

- Steel Finishing Powder Coating
- Multiplex Laminated HPL
- Stainless Steel



Jenis Table Top yang digunakan :

- ✓ Nero Granite
- ✓ Phenolic Resin



# Island Bench





# Safety Storage Cabinet

**Safety Cabinet for : Flammables, Combustibles, Hazardous Materials, and Corrosives.**

**Specification :**

- **Main body : Steel Finishing Powder Coating**
- **Interior : Stainless Steel 304 or Polypropylene**



# Cabinet



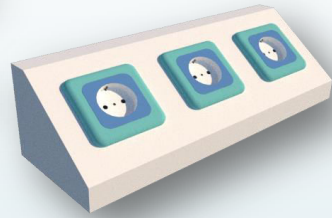
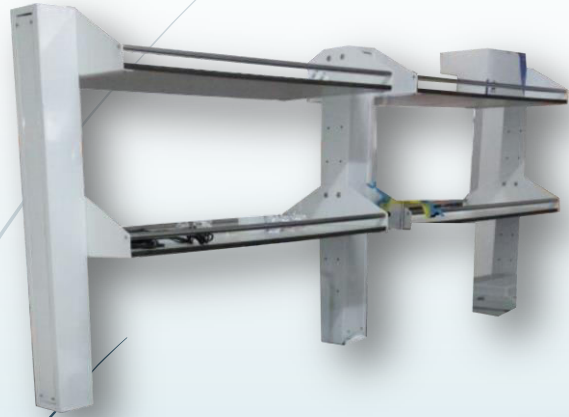
# Balance Table



- Material Structure : steel powder coating
- Table Top : nero granite 100 mm
- Adjustable levelling



# Accessories & Fitting



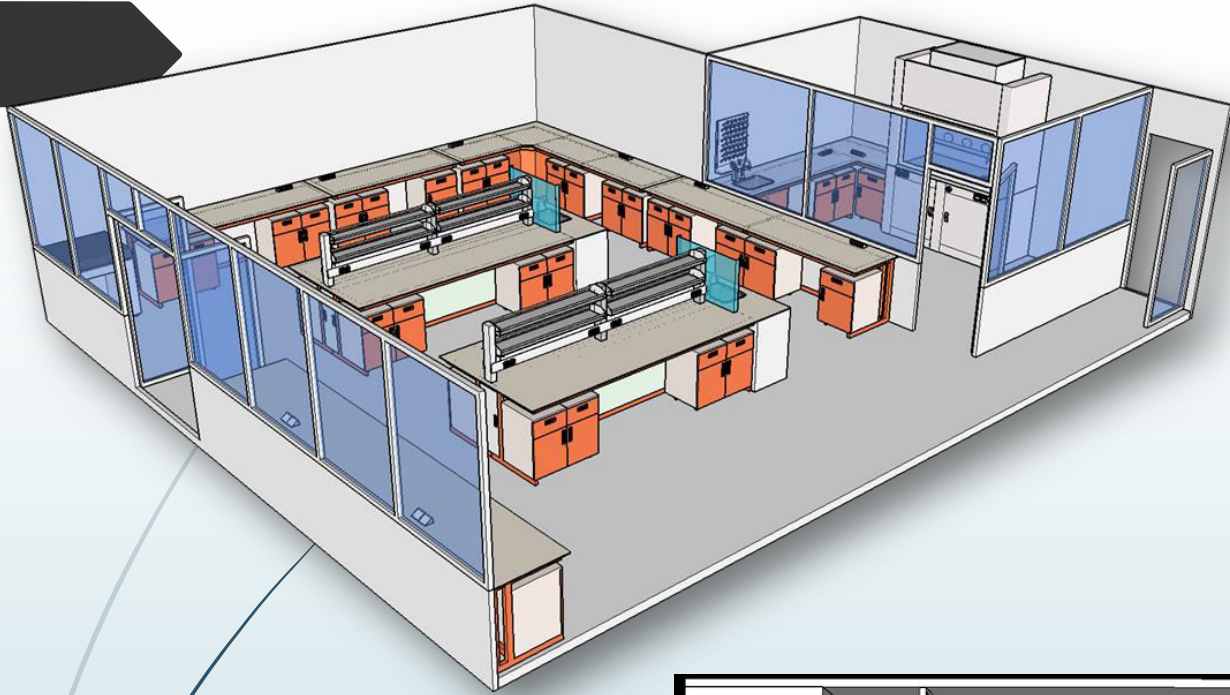
# Emergency Shower



# Steel Fabrication



# Laboratory Design



CORPORATE CUSTOMER



GARUDAFOOD



TAIHO  
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CO., LTD.



PT. SPEKTRAKROM INDONESIA



UNIVERSITAS PASUNDAN  
BANDUNG







PT. Pharos Indonesia



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PT. UNITAMA ANALITIKA PERKASA  
SPECIALIZED IN ANALYTICAL INSTRUMENT



THE TEMPO GROUP



PT. Kaldin Sari Nabati Indonesia



CORPORATE CUSTOMER



**PT DITEK JAYA**  
Analytical & Measuring Instruments



**LOTTE CHEMICAL**



**Apical LF BEAUTY.**



