



PETROPROCESS



ABOUT US

PETROPROCESS is a company specialized in the realization of solutions for process analytics, emissions monitoring (CEMS), combustion & flame analysis, measuring/control equipment, filtration, safety&security and associated maintenance services.



ENERGY GENERATION



OIL & GAS



CHEMICAL



METALLURGY



CEMENT

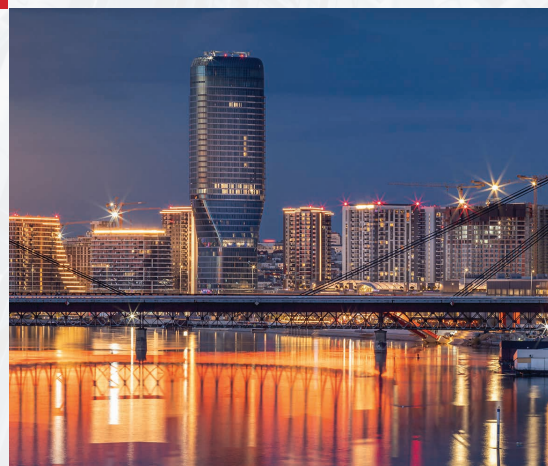


ENVIRONMENTAL

Since 2003 we have been a pioneer in this field and became market leader. Our commitment towards client's satisfaction ensured us the regional leader position with the ability to solve our client's toughest process challenges. We are the only local company which has all the elements necessary for the successful project realization – one stop shop for the needs of our clients.

Based in 3 locations:

Belgrade
Headquarters



Novi Sad
Sales and engineering



Zrenjanin
Production facility

Process Analytics

For 20 years now Petroprocess has been obtaining and gathering market knowledge, the agility and the proximity to customers understanding their needs and requirements. Based on this extensive experience we can satisfy needs of our customers by offering them:

- **DESIGN**
best technical solution in accordance with the processing conditions and with the applicable laws.
- **PRODUCTION – SYSTEM INTEGRATION**
based on the needs of our client and project requirements, we provide best technical solution, produce it and integrate in one system.



- **DELIVERY – INSTALLATION – COMMISSIONING – CALIBRATION**
our engineers have relevant certificates and experience in installation, commissioning and calibration of the installed/produced equipment.
- **SERVICE AND MAINTAINANCE**
during and after warranty period, improvement, modification, support ...



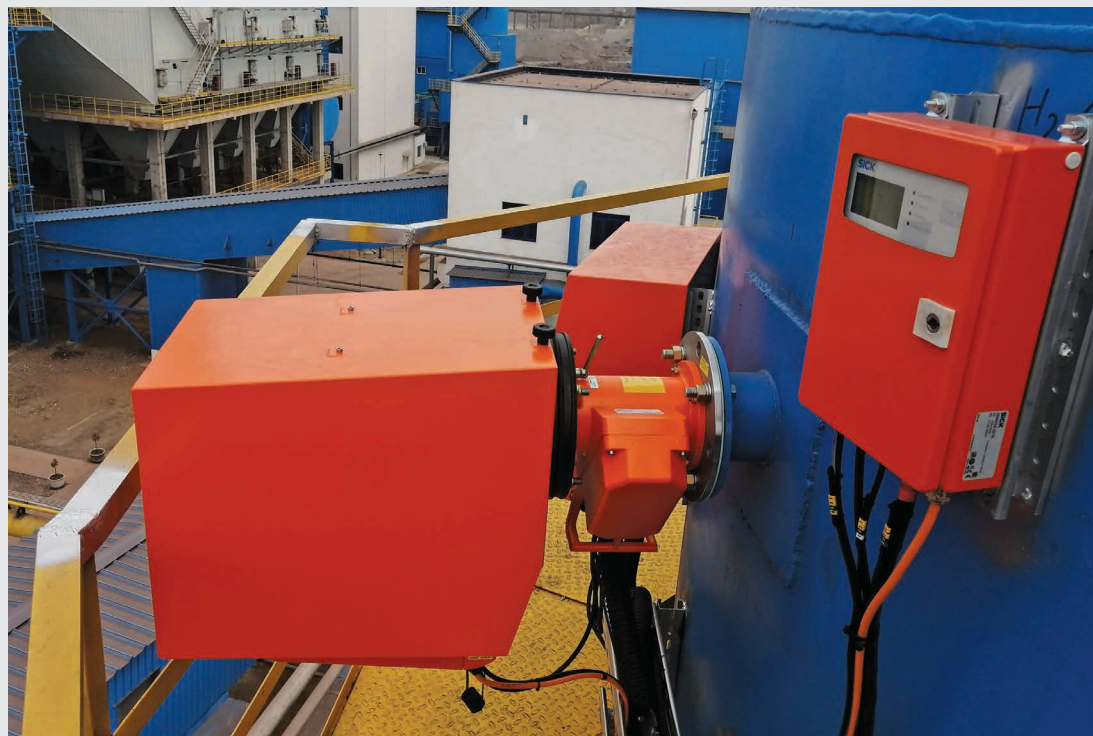
Process Analytics

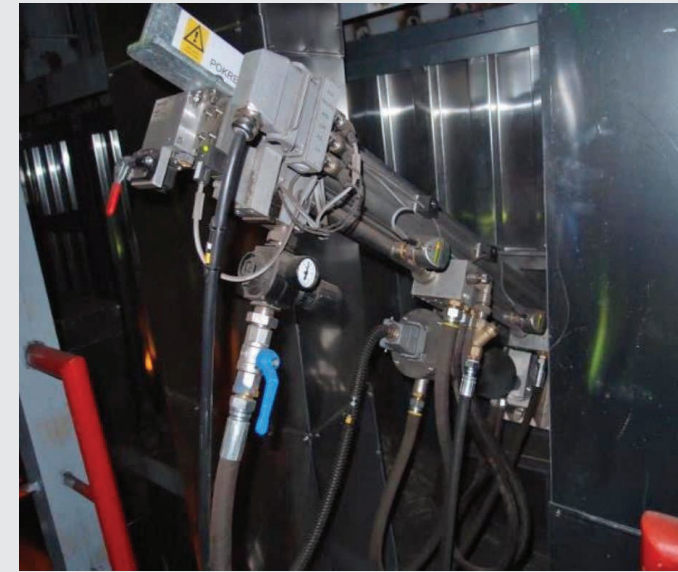
All systems are designed and manufactured in our own production facilities. With our team of electrical and software engineers we are able to design and implement solutions through carefully planned systems design using proprietary software, world-renowned hardware and a professional ethos focused on cost efficiency, exact operational parameters, safety, environmental compliance, legal applicability and ease of maintenance.

Our results and success are based on the business philosophy. Our overall approach is that we deliver only the highest quality solutions and in compliance with leading industry standards and regulations, with a focus on the needs of users as well as on all of the specifics of the technological process.

A brief overview of our references:

- ▶ Process analysis - more than 100 analyzers and systems, implemented on a "turnkey" basis. We are the only one with mercury analysers installed and working in Serbia
- ▶ CEMS - more than 60 systems installed – all up to date modern CEMS on all ODG in Serbia made by Petroprocess
- ▶ Systems for control the combustion process and the analysis of flame built-in 11 boilers, a total of 50 video thermographic sensor (boiler cameras).
- ▶ Process pumps - more than 150 process pumps





Combustion process analysis



Analyzer house for measuring quality fuel in Refinery Pančevo Designed for installation in the Ex zone



Analyzer house for process analytic in Refinery Pančevo with 12 analyzers for optimisation combustion process in furnace



Access platform for measuring equipment on channel the steelworks in the HBIS-Smederevo

Process Analytics - Our satisfied clients



Process Analytics - Our partners



Safety&Security

Fire alarm systems

► OUR COMPREHENSIVE PORTFOLIO INCLUDES

- fire panels,
- detectors,
- call points,
- video-based fire detection and
- accessories

► RELIABLE IN EVERY RESPECT

- Accurate fire detection
- Future-proof solutions



► INNOVATIVE AND TECHNOLOGY-DRIVEN

- Video-based fire detection solutions
- Remote control, maintenance and service
- Powerful planning tools

► FLEXIBLE TO THE MAX

- Tailor-made and modular solutions
- Independent from verticals, applications or project

Safety&Security

Fire Extinguishing

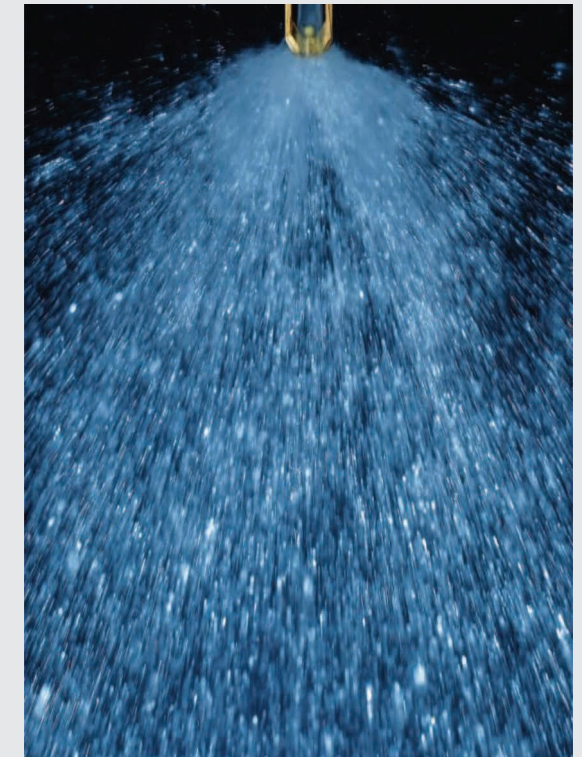
► SPRINKLER SYSTEMS

- Wet pipe system

The wet pipe system is the most common type of sprinkler system. In this type of system, the sprinkler pipe network is completely filled with pressurized water.

- Dry pipe system

The dry pipe system is designed especially for areas subject to the danger of frost. The sprinkler pipe network is not filled with water in the critical areas, but rather with compressed air, past the dry alarm valve.



► GAS DETECTION

Production plants often involve complex, space-optimized constructions. This poses challenges for the installation as well as the maintenance of a gas detection system.

Safety & Security

▶ VIDEO SYSTEMS

A broad portfolio of fixed and moving cameras.

▶ ACCESS CONTROL SYSTEMS

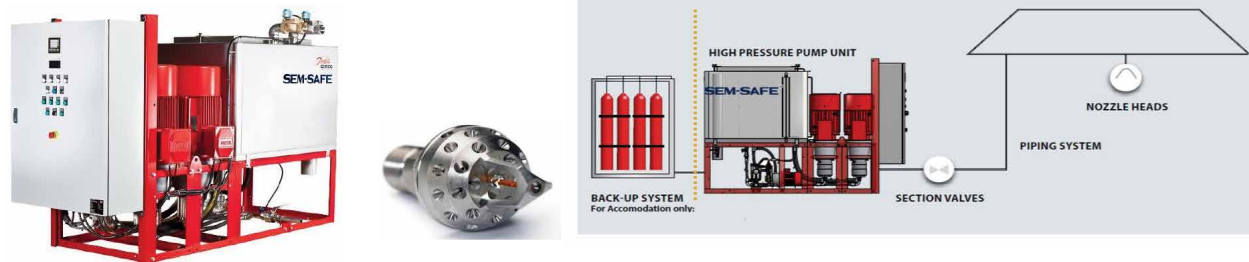
All access control components from different software options and controllers to a wide range of readers and credentials.

▶ INTRUSION ALARM SYSTEMS

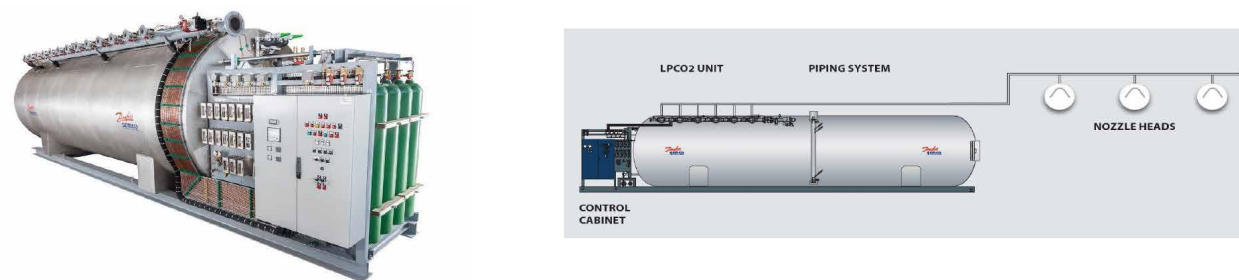
All access control components from different software options and controllers to a wide range of readers and credentials.

▶ SPECIAL SYSTEMS

SEM-SAFE® high-pressure water mist



Low-pressure CO₂



Safety & Security – Our partners

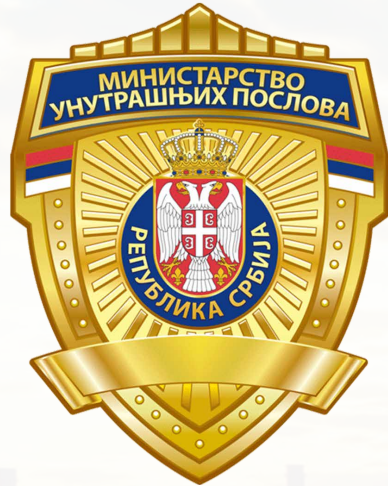


Safety & Security

Our systems are certified according to all relevant international and domestic standards.



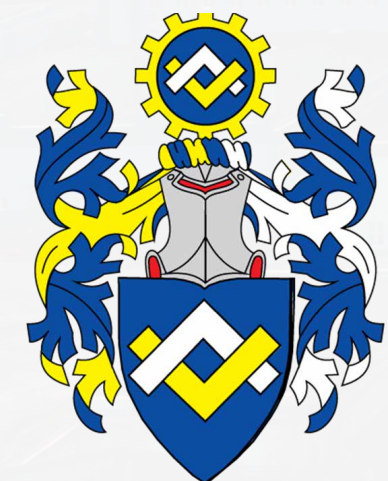
We have all necessary local licences



Ministry of internal affairs of Serbia
licenses for security systems



Ministry of internal affairs of Serbia
licenses for fire protection systems

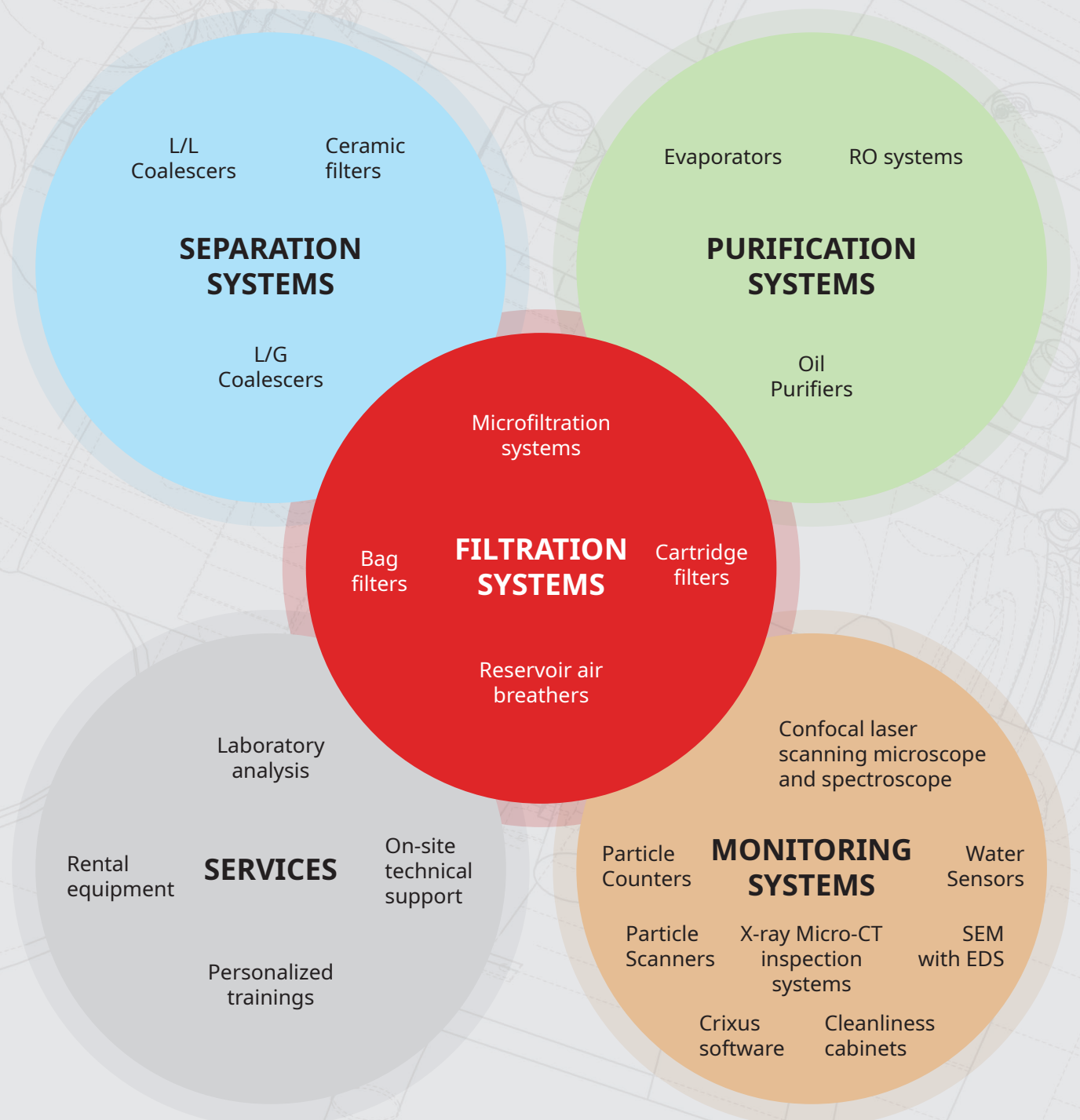


Serbian Chamber of Engineers
licenses for personel

Filtration

As a result of accumulated knowledge across multiple industries, long-term partnerships built over time, within a premium network of technology suppliers we identified and understood the need of our clients for filtration, separation and purification of air, fluids and treatment of water.

We are using Total Cleanliness Concept (TCC) which combines filtration, separation and fluid purification technologies used in production processes with control systems and services for continuous process improvement.



Filtration

Petroprocess offers the most advanced filtration, separation and purification technologies that ensure the needed level of cleanliness of all the fluids involved in industrial applications, from raw materials to final products – Pall Corporation.

THE INDUSTRIES

- Primary metals production
- Filtering of hydraulic and lubricating fluids
- Filtration of process fluids
- Water treatments
- Color filtering
- Air filtration



Pall Aria micro-filtration system



Pall Ceramic filters



Pall SUPRADisc



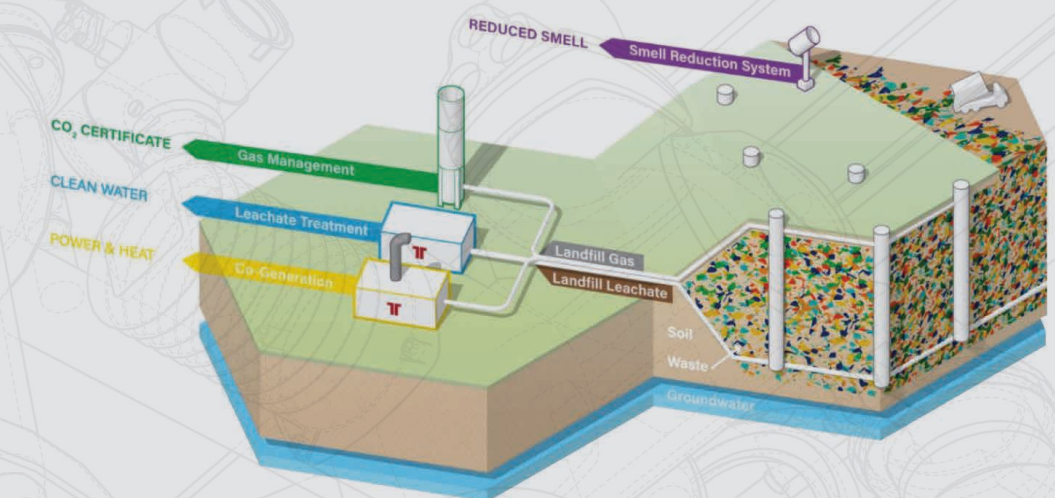
Filtration

Within the filtration and separation sector, we have solutions and equipment for landfills. In cooperation with the Swiss company Hofstetter AG, we offer solutions for landfill gas, leachate and odor control.

Landfill gas systems - Our standard modular gas plants are the ideal solution for landfill gas with a methane concentration of 5 - 55%. The basic module includes a moisture removal system, a blower, a torch and a fully automatic PLC control system. For older landfills where waste is no longer deposited, we designed the LOWCAL flare, which has the ability to burn landfill gas with a methane concentration of up to 15%.

Landfill leachates – they are among the most harmful waste waters. A large amount of salt, heavy metals and non-biodegradable contents cannot be treated with conventional wastewater treatment, but requires special treatment. We meet this challenge by using standard spiral membranes as well as advanced DT modules for reverse osmosis.

Autonomous offgrid plants - Fully autonomous all-in-one container-type offgrid plants that contain: landfill gas collection and filtration; generator for electricity production; Torch; Drainage filtration system.





**Our satisfied clients
and references**

Satisfied clients and references

Process Analytics

- ▶ **NIS Oil Refinery Pancevo**
Purchase of equipment and materials, provision of services and performance of works for the project „Harmonization of measuring points for measuring emissions of pollutants in the air on emitters
- ▶ **HBIS Group Serbia Iron & Steel Ltd. Smederevo**
Device for continuous measurement of blast furnace gas parameters - Procurement of equipment, installation of equipment, commissioning and training of employees
- ▶ **Lafarge BFC (cement plant), Beočin**
Mercury (Hg) analyzer with accompanying equipment and services
- ▶ **Titan cement plant, Kosjerić**
Delivery and installation of the CO and O2 analyzers with accompanying equipment and services
- ▶ **Metalfer Steel Mill Sremska Mitrovica**
Delivery and installation of the CEMS system



Satisfied clients and references

Process Analytics

- ▶ **HBIS Group Serbia Iron & Steel Ltd. Smederevo**
Design, procurement, delivery, installation and commissioning of equipment and training of contractors for continuous meters on the following emitters: Emitter of power plant E7-1, Emitter - Central chimney of steel plant E4-7, Emitter - Sulfurization E4-3, Secondary dust emitter E4-4, Emitter - Central dedusting station VP E3-1
- ▶ **TE TO Pancevo**
Gazprom Energy Holding - Procurement, delivery, installation, testing and commissioning of AMS - CEMS in CCPP Pancevo, Shanghai Electric Group Europa Ltd. Beograd, Savka 13, Beograd / Pancevo Combined Cycle Power Plant
- ▶ **CRH (Srbija) Ltd. (MORAVACEM) Popovac**
Delivery, integration and functional verification, calibration and commissioning, staff training, execution of engineering services, design and preparation of technical documentation for: SICK SCP3000 Rotary Furnace Inlet Sampling System and MCS300 P HW Analytical System /



Satisfied clients and references

Process Analytics

- ▶ **JKP Beogradske elektrane Beograd** - Preparation of the Main Project of the System for Continuous Monitoring of Emissions of Pollutants in the Air on the Main Broadcasting Company TO Konjarnik, TO Miljakovac, TO Mirjevo, TO Novi Beograd TO Voždovac, TO Banovo Brdo Belgrade, and the development of a project of a derived facility, delivery of an analyzer house with accompanying equipment and assembly, delivery of materials and construction of cable trains, delivery and laying of energy signal and communication cables, Delivery and installation of computer system, workstation with operating system installation and application software for analysis and acquisition of measured values and multifunctional color printer, equipment installation, system connection, adjustment, parameterization of equipment and testing, overview, commissioning and calibration of gas analyzers and particle concentration analyzer - SIEMENS d.o.o. Beograd,
- ▶ **EPS TPP Kostolac block A1** - Creation of the main project, delivery, supervision during installation, commissioning of the system for continuous monitoring of emissions of polluting substances into the air - CEMS monitoring program on block A1 –
- ▶ **EPS TPP Kostolac** - The Engineering, Manufacture, Delivery and Site Service of CEMS for PHASE II OF THE KOSTOLAC-B POWER PLANT PROJECT China Machinery Engineering Corporation, China



Satisfied clients and references

Process Analytics

- ▶ **EPS TPP Kostolac** - Process measurement system (2 systems) and CEMS (2 systems) for FGD project in TPP Kostolac B1 and B2 - design, procurement and delivery of equipment, installation and commissioning and user training China Machinery Engineering Corporation, China / TPP Kostolac, Nikole Tesle 5-7, Kostolac
- ▶ **JKP Beogradske elektrane Beograd** - Preparation of the Main Project of the System for Continuous Monitoring of Emissions of Pollutants in the Air on the Main Broadcasting Company TO Cerak, Belgrade, and the development of a project of a derived facility, delivery of an analyzer house with accompanying equipment and assembly, delivery of materials and construction of cable trains, delivery and laying of energy signal and communication cables, Delivery and installation of computer system, workstation with operating system installation and application software for analysis and acquisition of measured values and multifunctional color printer, equipment installation, system connection, adjustment, parameterization of equipment and testing, overview, commissioning and calibration of gas analyzers and particle concentration analyzer - SIEMENS d.o.o. Beograd,
- ▶ **HIP Azotara d.o.o. Pančevo** - Introduction of a system for continuous monitoring of air emissions on the L & III line of nitric acid plant "Hip - Azotare" d.o.o. Pančevo based on turnkey principle - development of AMS / CEMS Main Project for Lines I, II and III and Process Analysis of Line II, delivery and installation of equipment, commissioning and training of staff, extension of existing system for monitoring and processing of emission data and QAL2 parallel measurements per system

Satisfied clients and references

Process Analytics

- ▶ **Feni Industries Kavadarci, North Macedonia** - Creation of the main project, delivery, supervision during installation, commissioning of the system for continuous monitoring of emissions of pollutants in the air at the FENI Industries plant and training of employees
- ▶ **NIS Oil Refinery Pancevo** - Procurement, delivery of equipment and materials, provision of design and other services and execution of the turn-key works for the project - Installation of O₂ and CO analyzers in flue gases on stoves BA-401 and BA-402 - Procurement, delivery of equipment and materials, provision of design and other services and execution of turnkey works for the project - Installation of O₂ and CO analyzers in flue gases BA-230
- ▶ **JKP „Novosadska toplana“ Novi Sad** - Production, delivery, installation and commissioning of equipment for continuous measurement of flue gas emission (CEMS) -
- ▶ **HIP - Azotara d.o.o. Pančevo** - Introduction of a system for continuous monitoring of air emissions and quality of gas at the entrance to the process plant Ammonia III HIP-Azotara d.o.o. Pančevo based on turnkey principle - designing, delivering and installing equipment, taking into consideration the work and training of staff



Satisfied clients and references

Process Analytics

- ▶ **NIS a.d., Oil Refinery Pančevo** - Contract "turnkey" for design, engineering, delivery of equipment and materials and installation of process furnace optimization systems BA-301-304, BA-2101, BA-2201 A / B
- ▶ **EPS TPP Kolubara** - Preparation of the main project, procurement and delivery of equipment, installation and commissioning of equipment for continuous measurement of emissions of pollutants in air from chimney number 2,
- ▶ **NIS a.d., Oil Refinery Pančevo** - Design, procurement, installation and commissioning of the gas analysis system in the output flows of the products on S-500/550/570 -,
- ▶ **NIS a.d., Oil Refinery Pančevo** - Contract "turnkey" for the design of the main project, engineering services, delivery of equipment and materials, and for the construction of the analyzer
- ▶ **NIS a.d., Oil Refinery Pančevo** - Procurement, delivery of equipment and materials, provision of design and other services and execution of turnkey works in the Pancevo Oil Refinery for the realization of the project "CEMS analyzers - works according to the requirements of the standard SRPS EN 14181 and the Regulation on emission limit values
- ▶ **NIS a.d., Oil Refinery Pančevo** - Procurement, delivery of equipment and materials, provision of design and other services and execution of turnkey works in the Pancevo Oil Refinery for the implementation of the project "Upgrade of ABB analyzers and communication network"



Satisfied clients and references

Process Analytics

- ▶ **EPS Panonske TE TO Novi Sad** - Chemical Measurement Equipment - Procurement, installation and commissioning of the process analyzers for monitoring the concentration of CO, O₂ and natural gas in flue gases behind the water economist and from the top of the boiler furnaces K1 and K2, the expansion of the existing process analyzers for monitoring the concentration of CO and O₂ in smoke gases behind the water economist of the boiler K3 cell for monitoring the concentration of natural gas behind the water economist and design, procurement, installation and commissioning of the system for monitoring the combustion process and analysis of the flame on the K2 boiler TPP Novi Sad
- ▶ **EPS Panonske TE TO Zrenjanin** - Monitoring of the combustion process, flame analysis and boiler combustion products K2 - design, procurement, installation and commissioning of the monitoring system for combustion process and flame analysis on the K2 boiler and the analysis system for boiler combustion products K2 - TPP Zrenjanin
- ▶ **EPS TPP Kostolac** - Design, delivery, installation and commissioning of the CO, CO₂, NO and O₂ combustion process products of the analyzer system - TPP Kostolac,
- ▶ **LAFARGE BFC** - Design, manufacture and installation of systems for continuous monitoring of emissions of pollutants in the air from the main emitter - chimney of the rotary kiln no. 3 in Lafarge BFC d.o.o. in Beocin and training employees for using and maintaining the system



Satisfied clients and references

Process Analytics

- ▶ **NIS a.d. Novi Sad Blok Prerada** - Design, procurement, delivery and commissioning of analyzers and analyzers for the Oil Refinery Pancevo - Heurtey Petrochem S.A., 8, Cours Louis Lumiere, 94306 Vincennes Cedex - France /
- ▶ **EPS Panonske TE TO TPP Zrenjanin** - Accessories for continuous measurement of combustion products (CO, O₂) - Design, delivery, installation and commissioning of the analyzer system - TPP Zrenjanin,
- ▶ **AD "METANOLSKO-SIRČETNI KOMPLEKS" Kikinda** - Delivery of equipment and execution of works on installation of system for continuous measurement and monitoring of flue gas emission at the emitters 51D01 and 51D02 in MSK Kikinda - ,
- ▶ **JKP „Beogradske elektrane“** - Creation of the main project, delivery, installation and commissioning of the system for continual monitoring of emissions of pollutants in the air in the TO Danube
- ▶ **EPS PANONSKA TE TO TPP Sremska Mitrovica** - Equipment for continuous measurement of combustion products - design, procurement and commissioning of a system for continuous monitoring of emissions of hazardous and harmful substances into the air - TPP Sremska Mitrovica



Satisfied clients and references

Safety and Security



Thermo powerplant Kostolac B3



Video surveillance system



Telecommunication network



Video wall



500 cameras, multi site video management solution, explosion-proof subsystem

Satisfied clients and references

Safety and Security



BW Metropolitan

Fire detection system



Gas CO detection system



Video surveillance system



Video intercom system



Computer network



Public address system



328 apartments, **22.000** m², **20** floors, **7** commercial spaces



Satisfied clients and references

Safety and Security

| | | | |
|---|---|--|---|
| Public Enterprise Electric Power Industry of Serbia (JP EPS) | NIS Oil industry of Serbia | Radio Television of Serbia, Belgrade | National Museum Belgrade |
| MFC "Ušće" Belgrade | Building „Old Mill“ Belgrade, | Arms industry „Milan Blagojevic“, „Sloboda Čačak“, „Krušik“ | Port Novi Sad, Port Sremska Mitrovica, Port Bogojevo |
| Thermal power plant Kostolac | Hydroelectric power plants Djerdap, | Cargo port in thermal power plant „Nikola Tesla B“ | Wastewater treatment plant Boljevac, Mokrin |
| Gerontology Centre Belgrade, | Health Company „PharmaSwiss“ | Hall „Aleksandar Nikolić“ Pionir | Electrical substations „Belgrade 6“, „Nis 6“, „Smederevo“ |
| Wind turbines „Krivaca“, „Kosava“, „Alibunar“, „Kula“ | Thermo powerplants Nikola Tesla | Thermo powerplants Kostolac | Belgrade Waterfront, BW Metropolitan |



Petroprocess d.o.o. Beograd,
Vaska Pope 22/2
11040 Belgrade, Serbia

Contact tel. +381 11 333 0 555
www.petro-process.com

