SPERA

SPERA is an automated Solid-Phase Extraction system(SPE) supplied by Goojung EnT which develops high quality of pre-treatment laboratory instruments.

SPERA automates all steps of SPE (conditioning, loading, rinsing, and eluting) with a robotic arm enabling the SPE process to be quicker and more accurate.

Automated SPE process can improve efficiency of the sample preparation.

- Robotic arm moving along X, Y, Z axes.
- Simultaneous movement of both X and Y axes of robotic arm to accelerate SPE process.
- User-friendly software – SPE method can easily be saved and edited, and all of SPE steps can be conveniently monitored through graphic images.
- Smart detection and alarm system when low on solvent.
- Sample extraction from different type of cartridges at the same time.
- Sample extraction from A/B tandem cartridge.

Benefits

Solid phase extraction(SPE) is required to remove interference in order to lower detection limit for accurate and precise analysis by LC, LC-MS and GC.

SPE process can manually be carried out by a lab researcher, but it cost more time and effort of them, and also cause the risk of human error, which would decrease the efficiency of the entire SPE process.

SPERA can bring many advantages to laboratories over traditional techniques with automatic SPE technology. Automated SPE saves significant time and labor of the lab researcher, and allows them to be free from the sample preparation routine, so they can focus on their high-quality research work. SPERA also helps to enhance analytical precision and reproducibility of the sample preparation.

Application field

Food, Pharmaceutical, Forensic Science, Clinical, Water quality environment, Agriculture and Fishery Products, and more.

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Features

Automation

- Improves the speed of the SPE process by robotic arm moving along X, Y, Z axes.
- Fine-tunes the default position of a robotic arm with a wired controller to make all needles fit into the holes of cartridge without any deviation. (Precision: up to ±0.01mm)
- Automatically senses the right amount of solvent in 8 bottles and alerts when solvent is insufficient.

Scalability

- 52 samples can be extracted in basic configuration, and up to 72 samples can be processed when using only 1mL cartridge kits. (Basic configuration: 20 samples in 3 mL kit & 32 samples of 6 mL kit)
- Different type of cartridges can be simultaneously used to run different SPE methods.
- Extraction from A/B tandem SPE cartridges available.
- Basically accommodates 10mL and 20mL test tubes for collecting samples, and supports customized test tubes for large volume(≥50mL)
- Loads solvents in large volumes (up to 500 mL).

Easy Software

- SPE methods can easily be updated and edited in the cloud-based software.
- SPE process can conveniently be controlled and monitored on a user's laptop.
- Expected end time of sample extraction is displayed at the start of SPE, and start countdown to the finish time.
- Self-diagnostic function automatically detects errors of SPE process, or system fault.

High reproducibility & Safety

- Solvent and sample injection by positive pressure ensures excellent reproducibility and high sample recovery.
- All of needles precisely absorb exact amount of sample by a pump and prevent sample loss.
- Sealing cap on cartridge makes needles to be precisely inserted into cartridge so that liquid from needles can safely be injected without any loss, and it will improve reproducibility.
- Pressure sensor can detect overpressure caused by clogged tubing/needle or high pressure in cartridges, and when overpressure is detected, the instrument will stop for safety with alert.
- Cleaning mode prevents cross-contamination by cleaning conveniently inner and outer wall of the needles.

Specification

Model	SPERA **Mono**	SPERA **Di**	SPERA **Tetra**
No. of needles	1	2	4
Pump flow rate	0-250mL/min		
No. of solvent bottles	8 (500mL solution bottles)		
Test tube volume	10/20mL or customized volume		
Robotic Arm	Moves along X, Y, Z axes (Simultaneous movement of both X and Y axes)		
Default position of robotic arm	Adjustable by a wired controller (Precision: up to ±0.01mm)		
Sealing type	Sealing cap (sealing between needle and the SPE cartridge)		
Extraction type	Positive pressure		
Pressure range for cartridge	8-145psi		
Pressure range for pressure sensor	0.5-10Bar (Alerts when the pressure reaches higher level than preset limit)		
Compatible cartridges	1mL/3mL/6mL		
Dimensions (CM)	68.0(H) X 56.0(W) X 65.0(D)		
Electrical requirements	220V, 50Hz		
Ambient temperature	10-40℃		
Ambient humidity	0-90%		
Power	60W	100W	150W

SPERA

Auto Solid Extraction System

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