



# **IONIX**

## **POTENTIOMETRIC STRIPPING ANALYZER**

**THE ULTIMATE SOLUTION FOR  
COPPER, LEAD AND ZINC  
DETECTION IN WINE**



-  ***Ideal to both the most sophisticated applications in the research field and to routine analyses using the potentiometric stripping technique***
-  ***Heavy metal analyses become easy and economical!!***



## **GENERAL DESCRIPTION**

In compliance with the present regulations (i.e. EC REGULATION n° 466/2001) on the maximum concentration level, heavy metal detection in waters, air, ground, food, oil and cosmetic fields has become fundamental for the public and environmental health.

IONIX ENO is a high-sensitivity analysis unit able to detect metal traces in different simple or complex matrixes. High speed to measure the potential variations, with their subsequent processing, allows to reach a high detectability level (often below ppb). Thus, very small metal traces can be accurately and repeatedly detected and quantified.

Unlike other similar techniques, analyses can be run on the "ORIGINAL" sample too, that is matrixes do not require any chemical or physical pre-treatment; moreover, samples are not destroyed during analyses. This makes IONIX ENO particularly suitable for routine analyses and for use by non-particularly skilled operators. Spot on-site analyses can be performed thanks to its small compact size.

In order to detect the concentration of metal traces in wine, it is possible to carry out an electrochemical technique using the reduction potential of an element (to dose traces of it in a solution).

To detect the metal, the sample has to undergo a suitable treatment depending on the kind of matrix in which the element is present. Moreover, the quantity of sample to be taken depends on the metal concentration. The element to be dosed is turned into metalstate by applying a well-defined negative potential.

The cell where the electrochemical reaction takes place must contain a support electrolyte allowing the migration of the charged species towards the graphite electrode. Normally, this electrolyte is made of an acid solution.

The potentiometric stripping technique is very sensitive. In fact, metal traces can be detected up to ppb level.

## **STANDARD EQUIPMENT:**

- Stirrer run by a microprocessor
- Glassy carbon graphite electrode
- Ag/AgCl reference electrode
- Platinum electrode
- Mercury drop electrode (optional)
- RDE electrode (optional)

## **METALS DETECTABLE BY POTENTIOMETRIC STRIPPING TECHNIQUE**

Copper - Lead - Cadmium - Zinc

## APPLICATION FIELD

### BEVERAGES

Wine, beer, vinegar, balsamic vinegar, distillates, spirits

## REMARKABLE FEATURES

**NON DESTRUCTIVE ANALYSES:** IONIX ENO allows for analyses of different kinds of metals on the same sample with no need of intermediary treatment and mineralization phases

**HIGH SENSITIVITY:** IONIX ENO is particularly versatile for the detection of metals such as: Pb, Cd, Cu, Zn reaching sensitivity up to ppb

**QUICK ANALYSES:** IONIX ENO gives analytical results in a few minutes

**USER-FRIENDLY:** the whole analysis can be automatically performed by means of a personal computer and a software

**COMPETITIVE PRICE:** IONIX ENO has very low price. Its management costs refer to only consumption of solutions

**APPLICATION FIELD:** Oenology

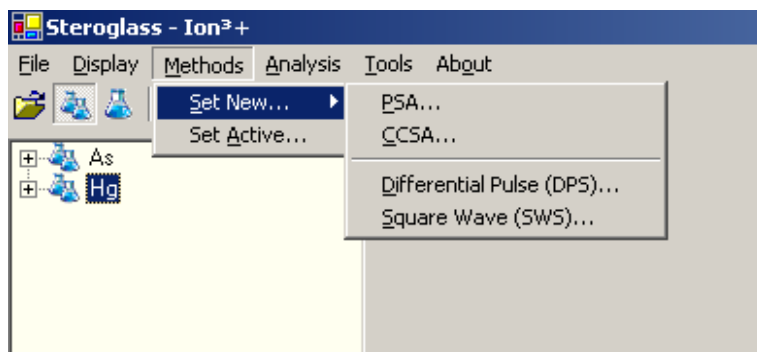
**SMALL SIZE:** Its small compact size makes installation in very small spaces possible

**METAL-FREE:** Disposable plastic metal-free cells prevent metal pollution coming from washing operations and glass cells

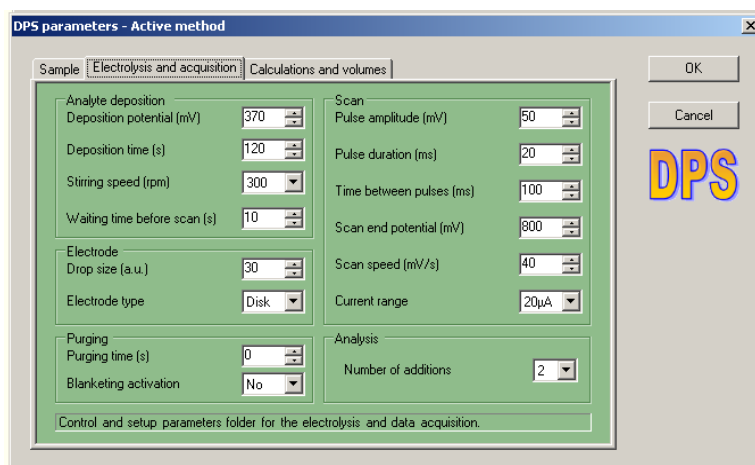
## IONIX ENO: THE NEW “WAVE” SOFTWARE

### UPDATED TECHNIQUES:

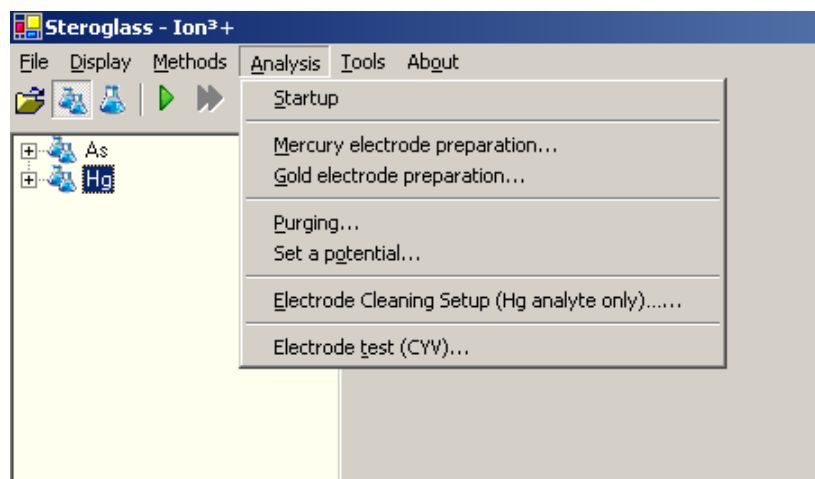
- PSA** (Anodic Stripping Analysis)
- CCSA** (Constant current stripping analysis)
- DPS** (Differential pulse)
- SWS** (Square Wave)



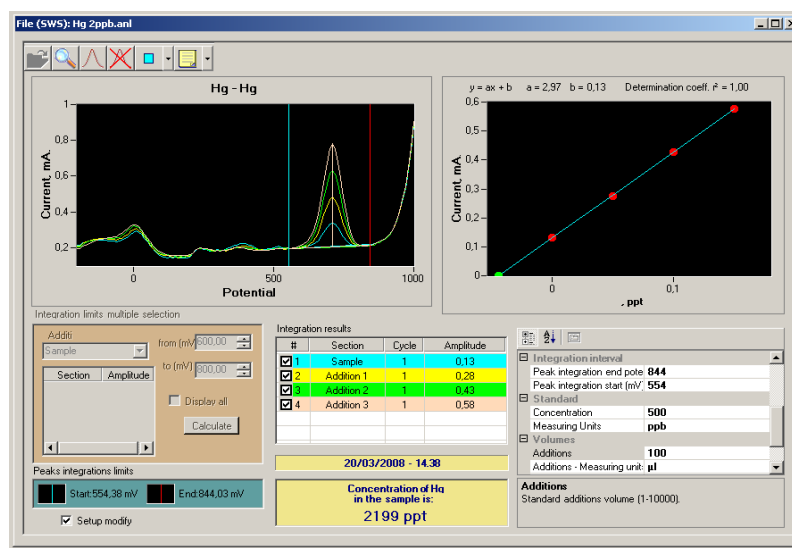
### EASY PARAMETERS SETUP



- ✚ **AUTOMATIC ELECTRODE SETUP BY POTENTIAL RATE**
- ✚ **ELECTRODE CONTROL BY CYCLIC VOLTAMMETRY**



- ✚ **USER-FRIENDLY**



## IONIX ENO: TECHNICAL SPECIFICATIONS

### General specifications

|                    |                                     |
|--------------------|-------------------------------------|
| Power supply       | Universal 98 -230 Vca 40-60 Hz 40VA |
| Dimensions (WxLxH) | 200 x 230 x 350 mm                  |
| Weight             | 8.5 kg                              |

### Minimum PC Requirements

|                      |                                  |
|----------------------|----------------------------------|
| Processor            | Pentium® III                     |
| System memory        | 256Mb RAM (512Mb)                |
| Hard disk free space | 100 megabyte                     |
| CD-ROM unit          | Yes                              |
| Serial port          | N°1 RS-232 and N°1 USB           |
| Monitor              | VGA monitor (1280x1024) or more  |
| Printer              | Any printer Windows™ compatible  |
| Operating system     | Microsoft® Windows™ XP or NT 4.0 |

### Electrical Specifications

|                           |   |
|---------------------------|---|
| Output voltage compliance | ±12V                                      |
| Response time             | ≤100μs                                    |
| Output impedance          | ≥100MΩ                                    |
| Current ranges            | ±2mA - ±2nA (17 scales)                   |
| Resolution                | 16 bit (referred to the full-scale value) |
| Input voltage range       | ±10V                                      |
| Input impedance           | ±10 <sup>12</sup> Ω                       |
| Input leakage current     | ≤10pA                                     |
| Equivalent input noise    | ≤25μVpp                                   |

### Analog-digital conversion

|                  |                  |
|------------------|------------------|
| Potential range  | ±4096 mV         |
| Resolution       | 16 bit (±125 μV) |
| Conversion speed | ≥100 K sample/s  |

### Communication

|           |                                       |
|-----------|---------------------------------------|
| Interface | Opto-isolated RS 232 C or USB adaptor |
|-----------|---------------------------------------|

### Electrochemical materials and devices

|                             |                                    |
|-----------------------------|------------------------------------|
| Electrodes support material | ARNITE®                            |
| Sample cell material        | Borosilicate glass                 |
| Stirrer                     | Computer controlled constant speed |

|                |                                      |
|----------------|--------------------------------------|
| Helix          | Borosilicate glass                   |
| Purging system | Two-way automatic gas bubbler system |

## Electrodes

|                             |  |
|-----------------------------|--|
| Type                        | 8 mm glass body with standard N6 conical joint   |
| Reference Electrode         | Ag - AgCl  |
| Counter Electrode           | Metal platinum (tip)                             |
| Working Electrode           | Glassy carbon (GC V-10 grade) 3mm                |
| Optional working electrodes | Platinum, gold, stationary and rotating, Hg drop |

## HOW TO ORDER

| CODE       | DESCRIPTION           |
|------------|-----------------------|
| SQOJ061450 | IONIX 230 V, 50/60 HZ |

## SPARE PARTS

| CODE       | DESCRIPTION  |
|------------|--|
| SQOU009253 | Reference Ag/AgCl electrode                                |
| SQOU009252 | Glassy graphite electrode                                  |
| SQOU023761 | Replacement tip for glassy graphite electrode (white side) |
| SQOU009240 | Platinum electrode   |
| SQFY031021 | Moplen support for the electrodes                          |
| SQOU003395 | Stirrer (without glass helix)                              |
| SQOU009317 | Borosilicate glass Helix                                   |
| SQOU006798 | Borosilicate glass Sample Cell                             |
| SQOU006797 | Plastic METAL-FREE Sample Cell (200 pieces)                |
| SQOU023067 | Arnite tap   |
| SQOU025480 | Anti-acid plastic basin                                    |
| SQOF057692 | RDE electrode  |

