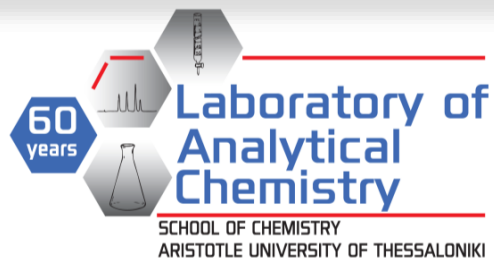




ARISTOTLE  
UNIVERSITY  
OF THESSALONIKI



## LABORATORY OF ANALYTICAL CHEMISTRY

# Scientific activities and accomplishments



**ACC2023**  
**12-15 November**  
Thessaloniki GREECE

**Edited by Natasa Kalogiouri**, Assistant Professor



<https://www.chem.auth.gr/en/departments-laboratories/fapx-dep-en/analytical-chemistry-lab-en/>

# Overview

- Established in 1963
- Part of the Department of Physical, Analytical and Environmental Chemistry of the School of Chemistry in the Faculty of Sciences of Aristotle University of Thessaloniki (AUTH)



# Laboratory Members



**Aristidis Anthemidis**  
Professor



**Anastasia Zotou**  
Professor



**Victoria Samanidou**  
Professor



**George Zachariadis**  
Professor



**George Theodoridis**  
Professor



**Stella Girousi**  
Professor



**Paraskevas Tzanavaras**  
Associate Professor



**George Tsogkas**  
Assistant Professor



**Natasa Kalogiouri**  
Assistant Professor



**Foteini Zougrou**  
MSc Chemist

# Role of the laboratory in supporting education and **research**



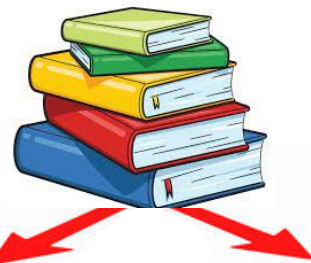
## Teaching and Research in **Analytical Chemistry**

Development, validation and application of novel analytical methods

Exploration of **new instrumental techniques** and **innovative materials**

# Role of the laboratory in supporting **education** and research

## Courses



Undergraduate

Postgraduate



# Role of the laboratory in supporting **education** and research

✓ **1994**

Master's Degree Programs

➔ "Advanced Chemical Analysis"

➔ "Chemical Analysis – Quality Control"

Today, the Department of Chemistry awards MDE degrees in the field of:

**"Quality Control-Chemical Analysis-Environment"**

*with specialization:*

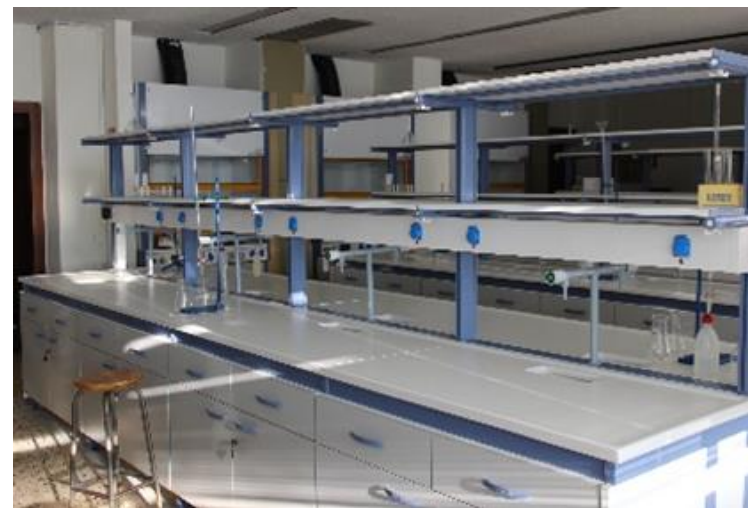
1. Bioanalysis-Pharmaceutical Analysis
2. Product Quality Control and Assurance
3. Quality Control and Environmental Management

MASTER'S  
DEGREE

# Laboratory Facilities



Laboratory



Laboratory



Conference room



Library room

## Research areas

### Separation and Hyphenated Analytical Techniques

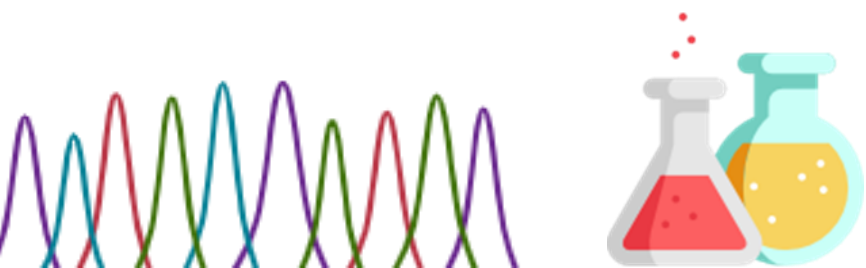
High Pressure Liquid Chromatography (HPLC-DAD, HPLC-MS)

Gas Chromatography (GC-FID, GC-MS, GC-MS/MS)

Ion Chromatography (HPIC)

Capillary electrophoresis (CE)

Laboratory of Liquid Chromatography



HPIC



HPLC-DAD



# Laboratory of Gas Chromatography



**GC-MS/MS**



**GC-FID**



**GC-MS**

## Spectroscopic Techniques

FAAS  
ETAAS  
ICP-AES



AAS

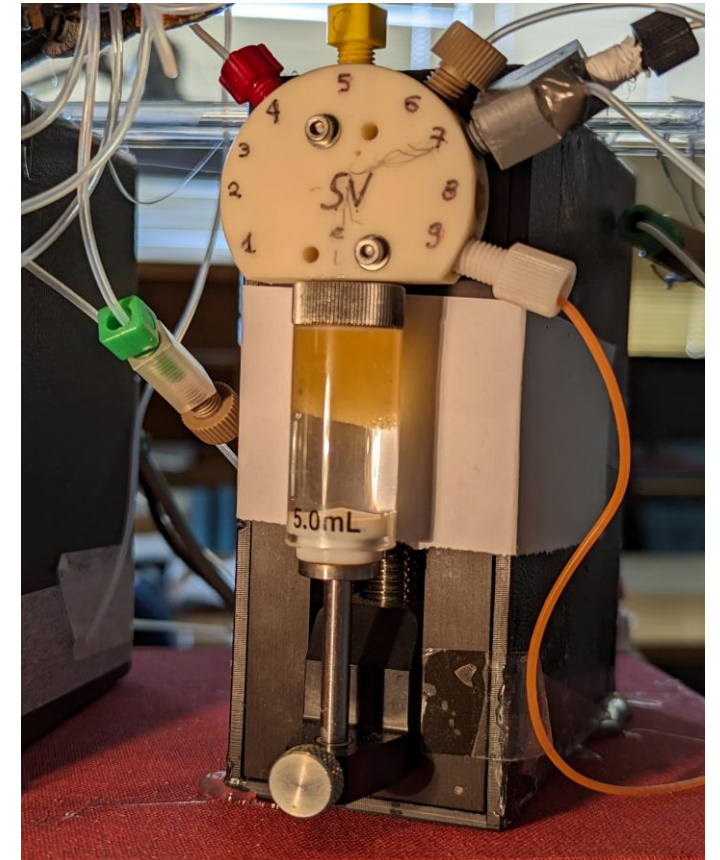
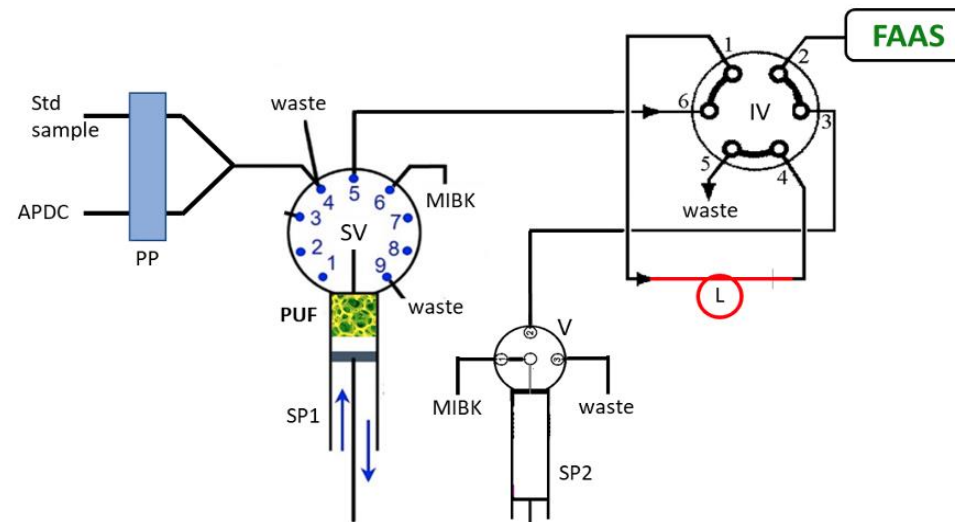
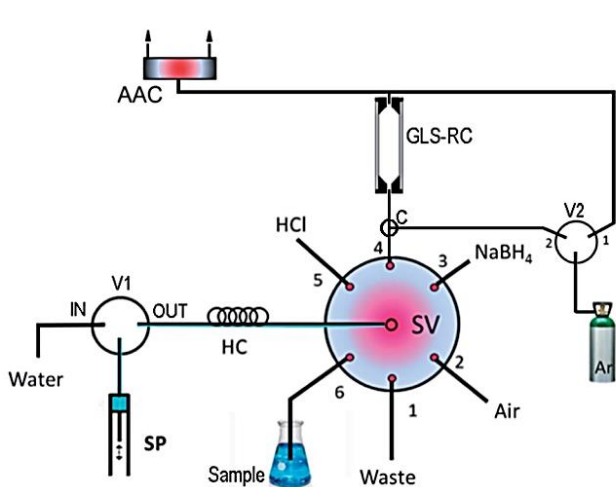
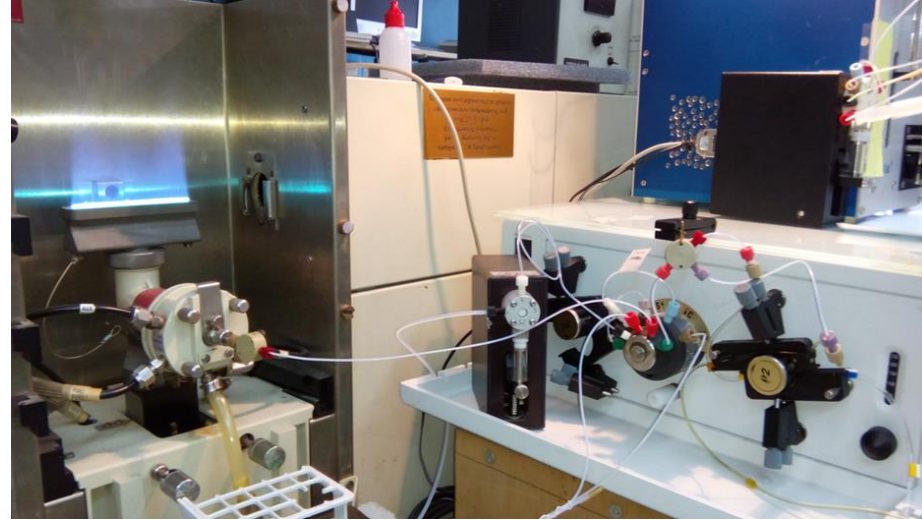


ICP-AES

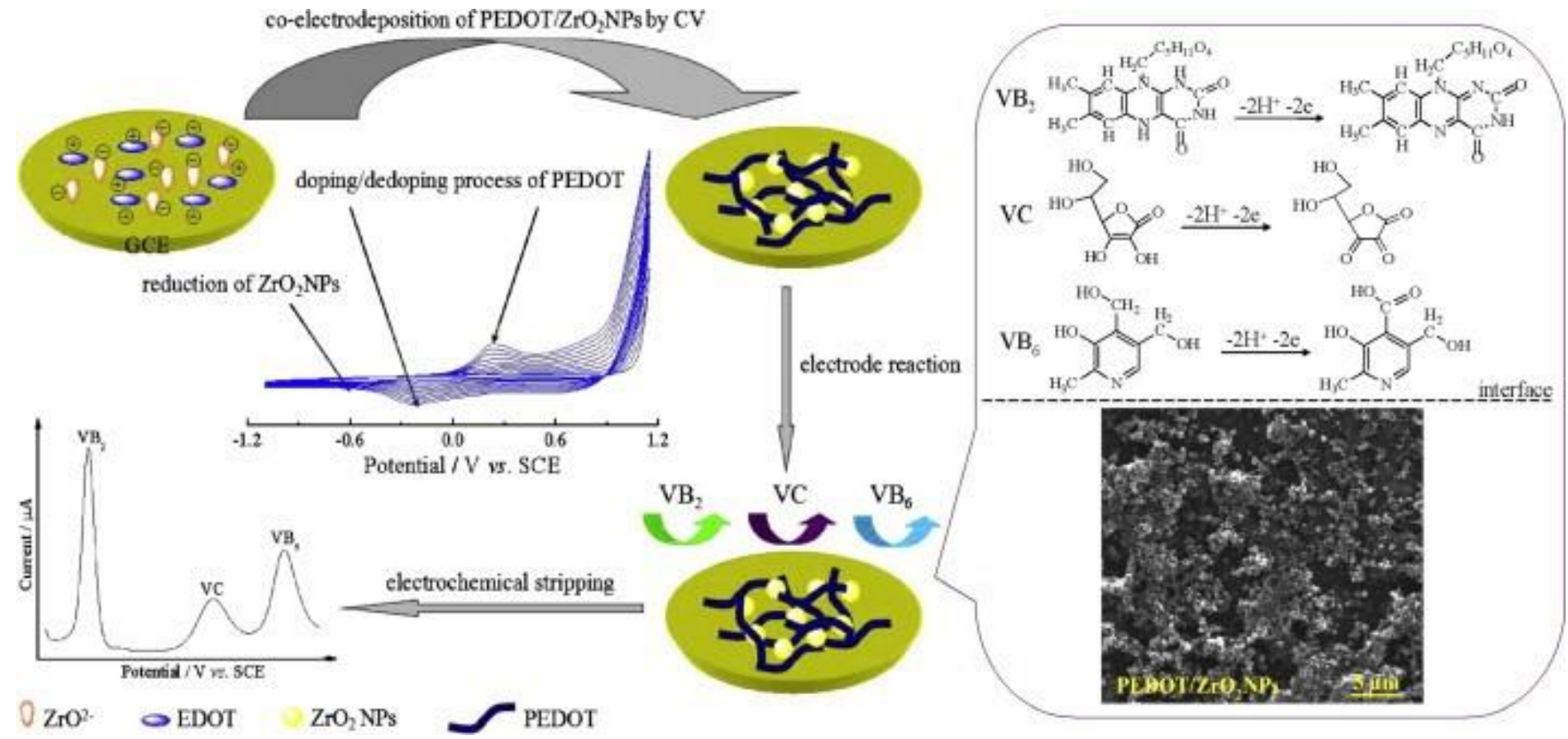
# Automated Techniques

Flow Injection

Sequential Injection

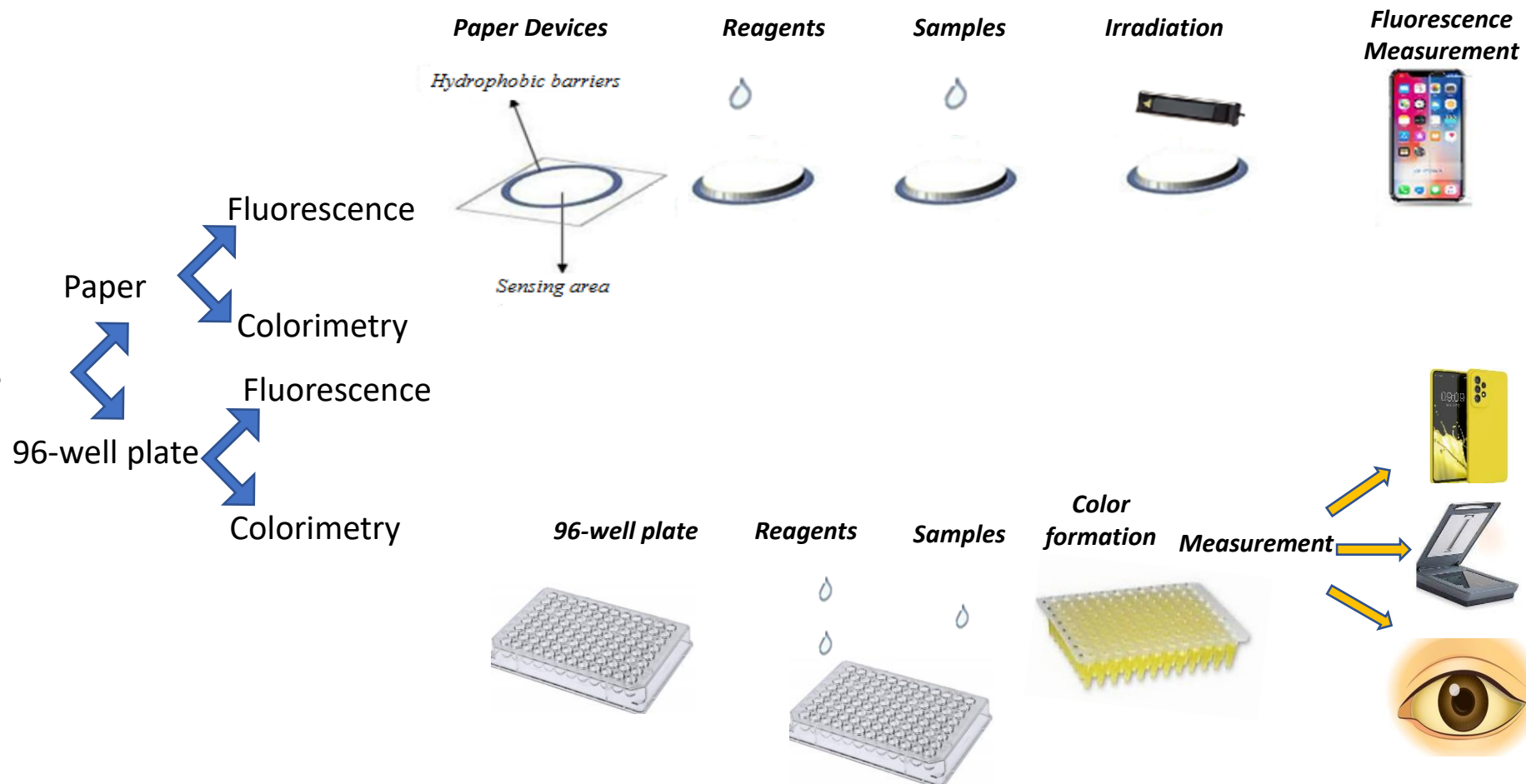


# ELECTROANALYTICAL TECHNIQUES, SENSORS AND BIOSENSORS

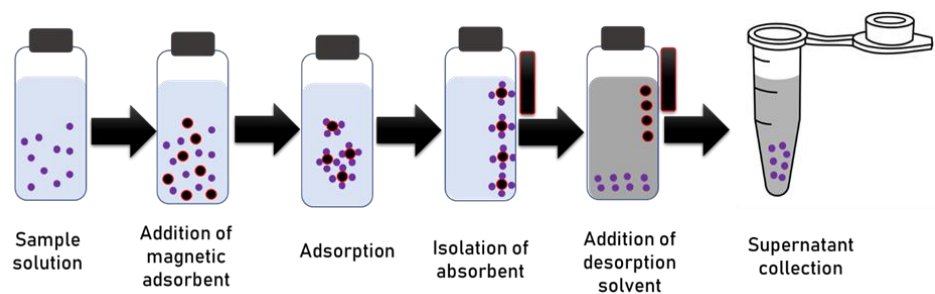


# Analytical paper or plate devices for the quantitative determination of organic and inorganic compounds with common imaging devices as detectors (smartphones-scanners)

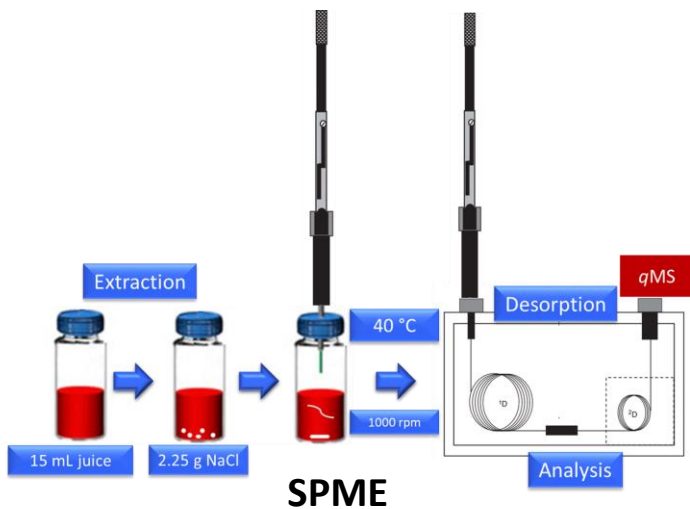
**Micro-analytical Devices**



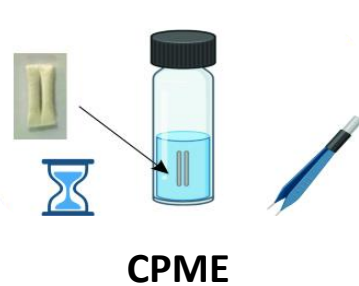
# Microextraction Techniques



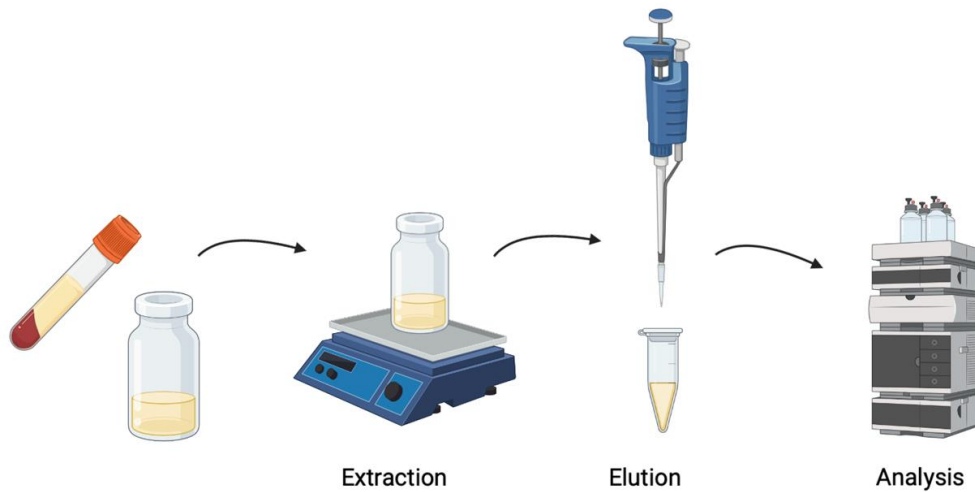
**MSPE**



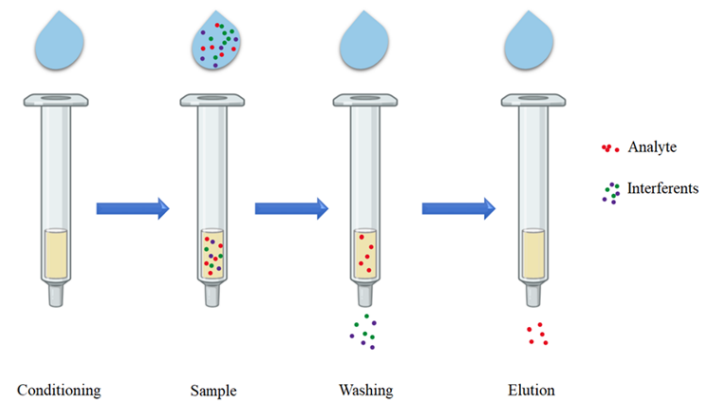
**SPME**



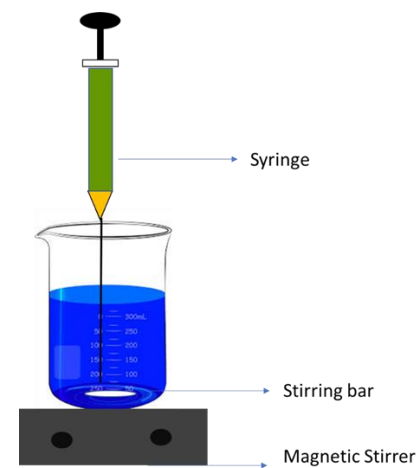
**CPME**



**FPSE**

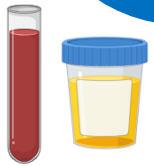


**MIP-SPE**



# Applications

Bioanalysis



Metabolomic analysis



Environmental analysis



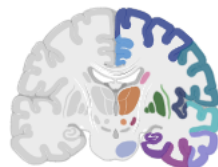
Archaeometric analysis



Pharmaceutical analysis



Forensics Toxicology



Food analysis



# Extroversion

Irakleitos

European Horizon

ESPA (Research-Create-Innovate)

ESPA (Region of Central

Macedonia)

EL.ID.EK.

GSRI

National Service delivery projects





# Extroversion



**Universitat de les Illes Balears**



**GDAŃSK UNIVERSITY OF TECHNOLOGY**



**UNIVERSITY OF CHEMISTRY AND TECHNOLOGY PRAGUE**

SOFIA UNIVERSITY  
ST. KLIMENT OHRIDSKI



## Achievements



Anually listed among the leading Greek scientists based on the impact of their published work



2% of the top scientists worldwide (and in the first places by AUTH) in the ranking of Stanford University (USA)



Among the top 100 analytical chemists of the last decade according to the magazine "*The Analytical Scientist*"



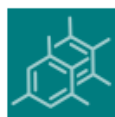
Pattern entitled "Pyridylethylthiopropyl functionalized sol-gel sorbent coating and particles for heavy metal extraction: method of synthesis" *IN PRESS*



**The Analytical Scientist**  
POWER  
LIST



Special Issue



molecules

an Open Access Journal by MDPI



## Special Issue Dedicated to the 60 Years of the Laboratory of Analytical Chemistry of the School of Chemistry of the Aristotle University of Thessaloniki

Guest Editors:

**Dr. Paraskevas D. Tzanavaras**  
Laboratory of Analytical  
Chemistry, School of Chemistry,  
Aristotle University of  
Thessaloniki, 54124 Thessaloniki,  
Greece

**Prof. Dr. Victoria Samanidou**  
Laboratory of Analytical  
Chemistry, School of Chemistry,  
Aristotle University of  
Thessaloniki, 54124 Thessaloniki,  
Greece

Deadline for manuscript  
submissions:

**31 December 2023**

### Message from the Guest Editors

Dear Colleagues,

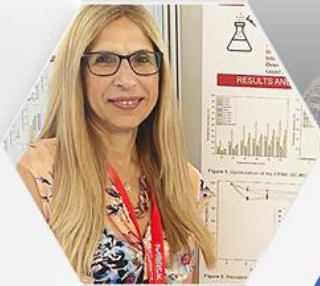
This Special Issue is dedicated to the 60-year anniversary of the foundation of the Laboratory of Analytical Chemistry (School of Chemistry, Aristotle University of Thessaloniki, Greece). Our intention is to launch a Special Issue where colleagues not only from the Laboratory of Analytical Chemistry but from the other Labs of the School of Chemistry will contribute high-quality research/review articles to celebrate the 60 years since the foundation of our lab. However, we aim to expand the publications of this Special Issue and invite former and present collaborators/colleagues from all over the world. On this basis, this Special Issue will not focus solely on analytical chemistry submissions but will cover broader topics of chemical science.

Dr. Paraskevas D. Tzanavaras  
Prof. Dr. Victoria Samanidou  
*Guest Editors*

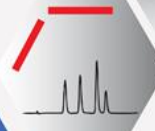


[mdpi.com/si/155716](https://mdpi.com/si/155716)

Special Issue



60  
years



# Laboratory of Analytical Chemistry

SCHOOL OF CHEMISTRY  
ARISTOTLE UNIVERSITY OF THESSALONIKI



Thank you

