

Penelope C. Ioannou
Professor of Analytical Chemistry

Education

M. Sc. in Chemistry, Tashkent University (Former USSR) (1969)
Ph. D. in Analytical Chemistry, Leningrad University (Former USSR) (1973)
Visiting Prof. Lab of Clinical Chemistry, Dept of Chemistry and Biochemistry,
University of Windsor, Windsor, Canada (1997)

Research Activities

Nanotechnology and dry reagent rapid tests for nucleic acid analysis. Applications in molecular diagnostics

Quantitative RT-PCR for the determination of molecular biomarkers

Detection and quantitation of genetically modified organisms (GMOs) by means of PCR and hybridization assays

Time-resolved fluorescence and chemiluminescence detection systems for nucleic acid high-throughput hybridization assays

Expression and purification of recombinant photoproteins. Preparation of protein/protein and protein/DNA conjugates as labels in ultrasensitive hybridization assays

Determination of substances of pharmaceutical and clinical importance in biological fluids by flow-injection analysis and fluorimetry

Ternary fluorescent complexes of terbium ions and their application in non-isotopic immunoassays and HPLC

Synchronous Scanning Derivative spectrofluorimetric techniques for the simultaneous determination of substances of pharmaceutical and clinical importance in biological fluids

Synthesis and applications of organic reagents in fluorimetric analysis

Papers 2007 – 2009

Tsiakalou V, Petropoulou M, Ioannou PC, Christopoulos TK, Kanavakis E, Anagnostopoulos NI, Savvidou I, Traeger-Synodinos J: "Bioluminometric assay for relative quantification of mutant allele burden: application to the oncogenic somatic point mutation JAK2 V617F" *Analytical Chemistry* (2009) **81:8596-602**

Iliadi A, Makrythanasis P, Tzetzis M, Tsipi M, Traeger-Synodinos J, Ioannou PC, Kanavakis E, Christopoulos TK: "Association of TLR4 single nucleotide polymorphisms and Sarcoidosis in Greek patients", *Genet Test Mol Biomarkers* (2009) **13: 849-853**

Litos IK, Ioannou PC, Christopoulos TK, Traeger-Synodinos J, Kanavakis E: "Multianalyte, dipstick-type, nanoparticle-based DNA biosensor for visual genotyping of single-nucleotide polymorphisms", *Biosensors Bioelectronics* (2009) 24:3135-9

Toubanaki DK, Christopoulos TK, Ioannou PC, Flordellis CS: "Identification of single-nucleotide polymorphisms by the oligonucleotide ligation reaction: a DNA biosensor for simultaneous visual detection of both alleles", *Analytical Chemistry* (2009) 81:218-24

Toubanaki DK, Christopoulos TK, Ioannou PC and Flordellis CS: "High-Throughput Chemiluminometric Genotyping of Single Nucleotide Polymorphisms of Histamine, Serotonin and Adrenergic Receptor Genes", *Analytical Biochemistry* (2009) 385: 34-41

Elenis DS, Ioannou PC and Christopoulos TK: "Quadruple-Allele Chemiluminometric Assay for Simultaneous Genotyping of Two Single-Nucleotide Polymorphisms", *Analyst* (2009) 134:725-30

Kalogianni DP, Litos IK, Christopoulos TK and Ioannou PC: "Dipstick-Type Biosensor for Visual Detection of DNA with Oligonucleotide-Decorated Colored Polystyrene Microspheres as Reporters", *Biosensors Bioelectronics* (2009) 24:1811-1815

Konstantou JK, Ioannou PC and Christopoulos TK: "Dual-allele dipstick assay for genotyping single nucleotide polymorphisms by primer extension reaction", *European Journal of Human Genetics* (2009) 17:105-111

Toubanaki DK, Christopoulos TK, Ioannou PC and Gravanis A: "Visual Genotyping of Single Nucleotide Polymorphisms by Tetra-Primer PCR Coupled with a Dry-Reagent Disposable Biosensor", *Pharmacogenomics* (2009) 10:495-504

Toubanaki DK, Christopoulos TK, Ioannou PC and Gravanis A: "Dry-Reagent Disposable Biosensor for Visual Genotyping of Single Nucleotide Polymorphisms by Oligonucleotide Ligation. Application to Pharmacogenetic Analysis", *Human Mutation* (2008) 29:1071-1078

Elenis DS, Kalogianni DP, Glynou K, Ioannou PC and Christopoulos TK: "Advances in molecular techniques for the detection and quantification of genetically modified organisms", *Analytical and Bioanalytical Chemistry* (2008) 392:347-354

Iliadi A, Ioannou PC, Traeger-Synodinos J, Kanavakis E and Christopoulos TK: "High-Throughput microtiter well-based bioluminometric genotyping of two single nucleotide polymorphisms in the Toll-like receptor-4 (TLR4) gene", *Analytical Biochemistry* (2008) 376: 235-241

Litos IK, Emmanoulidou E, Glynou KM, Laios E, Ioannou PC, Christopoulos TK, Kampa M, Castanas E, Gravanis A: "Rapid Genotyping of CYP2D6, CYP2C19 and TPMT Polymorphisms by Primer Extension Reaction in a Dipstick Format", *Analytical and Bioanalytical Chemistry* (2007) 389: 1849-57

Konstantou J, Ioannou PC, Christopoulos TK: "Genotyping of Single Nucleotide Polymorphisms by Primer Extension Reaction and a Dual-Analyte Bio/Chemiluminometric Assay", *Analytical and Bioanalytical Chemistry* (2007) 388: 1747-54

Elenis DS, Ioannou PC and Christopoulos TK: "Quadruple-Analyte Chemiluminometric Hybridization Assay. Application to Double Quantitative Competitive Polymerase Chain Reaction", *Analytical Chemistry* (2007) **79: 9433-9440**

Litos IK, Ioannou PC, Christopoulos TK, Traeger-Synodinos J and Kanavakis E: "Genotyping of Single Nucleotide Polymorphisms by Primer Extension Reaction in a Dry-Reagent Dipstick Format (PEXT-Dipstick)", *Analytical Chemistry* (2007) **79: 395-402**

Glynou K, Kastanis P, Boukouvala S, Tsaoussis V, Ioannou PC, Christopoulos TK, Traeger-Synodinos J, Kanavakis E: "High-Throughput Microtiter Well-Based Chemiluminometric Genotyping of 15 β -Globin Gene Mutations in a Dry-Reagent Format", *Clinical Chemistry* (2007) **53:384-391**

Kalogianni DP, Bravou V, Christopoulos TK, Ioannou PC, and Zoumbos NC: "Dry-Reagent Disposable Dipstick Test for Visual Screening of Seven Leukemia-Related Chromosomal Translocations", *Nucleic Acid Research* (2007) **35(4):e23**

Kalogianni DP, Elenis DS, Christopoulos TK and Ioannou PC: "Multiplex Quantitative Competitive Polymerase Chain Reaction (MQC-PCR) Based on a Multianalyte Hybridization Assay Performed on Spectrally Encoded Microspheres", *Analytical Chemistry* (2007) **79:6655-61**

Kalogianni DP, Goura S, Aletras AJ, Christopoulos TK, Chanos MG, Christofidou M, Skoutelis A, Ioannou PC and Panagiotopoulos E: "Dry-Reagent Dipstick Test Combined with 23S rRNA PCR for Molecular Diagnosis of Bacterial Infection in Arthroplasty", *Analytical Biochemistry* (2007) **361: 169-175**

Contact

Penelope C. Ioannou
Professor
Laboratory of Analytical Chemistry
Department of Chemistry
National and Kapodistrian University of Athens
Zografou 157 71, Greece
Office: 4th floor, Office 4
Tel: +30-210-7274574 and +30-210-7274238
Fax: +30-210-7274750
Email: ioannou@chem.uoa.gr