

Miniaturization and automation of environmental and bioanalytical assays exploiting flow based methodology

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Miniaturization and automation in analytical sciences have evolved tremendously over the past decade within the framework of green analytical chemistry. These lectures to be presented to PhD students from Gdansk University are aimed at outlining the unrivalled merits and evolution of flow-based methodology and its sequels based on microfluidic and mesofluidic platforms for the simplification and acceleration of the overall analytical process including sampling, sample preparation and detection steps in the arena of environmental and bioanalytical chemistry. Since its inception in the middle of 70's flow-injection has been consolidated as an appealing downscaled analytical tool for pressure-driven kinetic assays at the low μL level using programmable flow. Not the least, for implementation of advanced sample processing on-line encompassing micro-solid phase extraction approaches, liquid-phase microextraction procedures, non-chromatographic speciation, membrane-based separation, chemical vapour generation of low abundance metal and metalloid species, optical and electrochemical detection on-chip in bioanalytical assays, or as a front end to modern detection equipment or column separation systems including liquid-chromatography, gas-chromatography and capillary electrophoresis for organic environmental xenobiotics or targeted biomarkers in biological matrices.

It is the intention of this set of lectures for PhD students to offer the author's own critical vision as to where the field of flow analysis is being directed on the basis of the current state-of-the art of advanced flow methodology and identify what are the major cutting-edge challenges to be yet undertaken and what opportunities are offered by miniaturized fluidic platforms for real-world applications that might not be at present tackled by lab-on-a-chip counterparts.

Termin	Dzień tygodnia	Godzina	Miejsce
27.02.2017	Poniedziałek	9.15 – 12.00	Minicentrum Konferencyjne (Luwr)
28.02.2017	Wtorek	9.15 – 12.00	Minicentrum Konferencyjne (Luwr)
01.03.2017	Środa	9.15 – 12.00	Minicentrum Konferencyjne (Luwr)
02.03.2017	Czwartek	9.15 – 12.00	Minicentrum Konferencyjne (Luwr)
03.03.2017	Piątek	9.15 – 12.00	Minicentrum Konferencyjne (Luwr)