PortASAP
COST Action CA16215 - European Network for the Promotion of PORTable, Affordable and Simple Analytical Platforms

Construction and analytical application of portable, low-cost and easy to use solid contact ion-selective electrodes

Hosting institution: Faculty of Chemistry, Maria Curie-Sklodowska University, Lublin, Poland

Minimum duration: 2 weeks and max. 4 weeks

The STSM will give the applicant the possibility to be trained on the two following tools:

Construction of ion-selective electrodes with solid contact (SCISEs). SCISEs have many advantages over their classical equivalents containing an internal solution. The lack of the internal solution enables obtaining an electrode which can have any shape and is much smaller in size, with a simultaneous reduction of production costs. The solid contact electrodes are especially useful in measurements performed in outdoor conditions, outside the laboratory, because they are highly resistant to damage, as well as simple in use and transport. Depending of kind of ionofore used for membrane preparation various sensors sensitive to particular ions can be obtained. It is possible to study new compounds (proposed by applicant) as potential ionophores for membrane preparation.

Analytical application of ion-selective electrodes. Ion-selective electrodes are in many respects ideal sensors for use in the analysis of industrial and environmental samples. The advantages which they offer have led to their adoption in a wide range of applications. There are several properties of the performance of ion-selective electrodes that give them important advantages over other techniques in the field. These are: an insensitivity to sample colour, viscosity or suspended solids, rapid response to changes in determinant concentration, and possible use in a very wide concentration range. Ion- selective electrodes are, with few exceptions, tolerant of small pH changes. A further advantage of analytical method involving ISE is that they are relatively simple, and cheap to develop, set up and run. During STSM the applicant will gain experience in potentiometric techniques using ion-selective electrodes.

Requirements: no specific requirement.

Funded by the Horizon 2020 Framework Programme of the European Union