**Physicochemical characterization of materials properties by Gas Chromatographic Method**

Gas chromatography has been used for making physicochemical measurements for as long as it has been used for chemical analysis.

Inverse gas chromatography (IGC) is a technique useful for physicochemical characterization of both surface and bulk properties of various materials within the wide range of temperature.

The different types of physicochemical properties can be measured by IGC. They are mainly classified into three categories: equlibrium properties, kinetic and transport properties, and miscellaneous. IGC experiments can be conducted under two chromatographic conditions: infinite dilution and finite concentration.

The application of IGC for characterization of the polymers, their blends, minerals, modified fillers, fibers, and pharmaceutical powders will be presented with particular enphasis to the analysis of mass transport properties (solubility and diffusivity) of gases and vapors in the polymeric matrix.

**Short CV**

Prof Askin is currently vice director of the ESOGU Central Research Laboratory Application and Research Center in Turkey and full professor at the Department of Chemical Engineering in the Faculty of Engineering and Architecture at the Eskişehir Osmangazi University (Turkey), where she also served as head of department from 2011 to 2015.

Her research activity is mainly related to the study of adsorption and absorption of gas, liquids and vapors in polymer the and inorganic materials, mainly studied through chromatographic techniques, even if she also worked in the field of waste valorization and reaction kinetics. The results of such activity were published and presented in several national and international journals and conferences.

Professor Askin was also part of the organizing and scientific committee of different international conferences and in her country served as external evaluator in the Council of Higher Education and in Association for Evaluation and Accreditation of Engineering Programs.