Introduction by the Guest Editors

This special issue of the International Journal of Applied Glass Science is dedicated to the field of phosphate glasses, or systems where phosphorus is the sole or one of the major glass forming elements. Although in the origins of their research, they were termed as *special glasses*, having found rather few applications, phosphate-based systems have now experienced a remarkable increase of interest that have substantially augmented the fundamental knowledge on their structure and properties. This has fostered novel and technologically relevant applications. Indeed, the relatively low temperatures required to melt phosphate glasses, their rich chemistry and *flexibility* of their glass networks have contributed to their increased popularity, being now a consolidated topic of research. This continuous increase in their interest is also reflected by the organization of the International Conference on Phosphate Materials every three years, in conjunction with the Borates Conference. The next one will be held in 2020 (July 12-17th), in Corning, NY.

It is our pleasure to introduce this special issue of the International Journal of Applied Glass Science dedicated to phosphate glasses. In this issue, the readers will find contributions on different topics, beginning by some insights on the structure of alkaline-earth phosphate, silico-phosphates as well as of nitrided alkali phosphate glasses. Some features on the crystallization mechanism of phosphate glasses are illustrated for Y_2O_3 -containing glasses and for $\text{NaF-M}_2\text{O}_3\text{-P}_2\text{O}_5$ NASICON-like phosphate glasses ($\text{M} = \text{V, Ti, Fe}$), and phase selective crystallization of $\text{Na}_2\text{Mn}_{0.9}\text{Fe}_{0.1}\text{P}_2\text{O}_7$ glass by laser-irradiation is presented. The effect of controlled crystallization on electrical transport of polaron and mixed ion-polaron is also a matter of interest. Optical properties of phosphate glasses, such as glasses with reduced birefringence, Nd-doped laser phosphate glasses, and the creation of luminescent silver centers in phosphate glasses subjected to X-Rays or combined X-Rays and femtosecond laser exposure is presented. Concerning phosphate glass fibers, the fabrication of extruded

microstructured bioresorbable phosphate glass optical fibers is described, and another paper shows how their improvement is achieved through acid etching and polydopamine treatment.

The readers will also find a review on the use of iron phosphate glasses for the encapsulation of wastes. We hope that this special issue covering a wide range of compositions, of properties and of applications will find the interest of our colleagues and students.

The guest editors, Francisco Muñoz (CSIC, Spain) and Lionel Montagne (University of Lille, France).