

Swelling Behavior From Dry State Of Poly (2-Hydroxyethyl Methacrylate) Copolymers

KERMAD Amina¹, GHELLAI Nasser¹, CHABANE SARI Sidi Mouhamed¹ et CHABANE SARI Nasr Eddine¹

(1)Unit of Research of Materials and Renewable Energies (U.R.M.E.R), Laboratory Simulation and Characterization of Devices and Microsystems (LSCDM), Department of physics, Faculty of Sciences, A. B. Belkaid University of Tlemcen 13000, Algeria

E-mail : amina_energetique@yahoo.fr

Abstract:

In the field of bio-detection, biosensors are among of the discoveries that have experienced an exponential rate of growth in recent years. This is linked in part to the growing need for measuring devices for detecting and assaying a biological or chemical compound in a complex and multiple associations with transducers bio-receptors constantly changing on the other [1]. Biosensors consist of a bio-receptor is a biological element that allows the molecular recognition system and a transducer transforming it into an electrical signal physicochemical changes [2, 3]. To be able to easily combine the biological element to the transducer, media types and various kinds have been studied by specialists. However Hydrophilic polymers also appointed hydro-gels are an interesting medium for the retention of biological elements.

In this work, we are interested in studying the rate of swelling of hydrophilic polymers based on 2-HydroxyEthyl MethAcrylate (HEMA), obtained by radio polymerization. The determination of this parameter is of great importance because it is a method to know the cross linking density of hydro gels on the one hand, and tells us about their porosity, on the other hand [4]. This quantity depends on several factors including: the nature of swelling medium, the composition of monomer / water and the nature of the monomer. The swelling kinetics was studied to determine the swelling time corresponding to equilibrium. This value is retained for the rest of the experiments.

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