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Seventh International Conference on Material Sciences (CSM7)

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Beirut - Lebanon

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Abstract Sample

Physicochemical study of the interfacial interaction between titanium dioxide and organic medium*

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Topic : L

Abstract

The study of the physicochemical properties of solids dispersed in organic media, and especially the dispersion of titanium dioxide particles, is very important in many industrial processes.

The aim of this study is to determine the acid-base behavior of TiO₂ particles dispersed in organic media by measuring their zeta potential by electrophoresis technique. After normalized the electron donor (DN') and acceptor numbers (AN') of organic solvents, we applied our new method to determine the donor (DN_S') and acceptor numbers (AN_S') of titanium dioxide by using a Mathematica program. The effect of pretreatment temperature on physicochemical properties of TiO₂ was also studied. Results obtained showed that DN_S' values of TiO₂ are comprised between 36 and 47 (or 14 and 19 kcal/mol) and AN_S' values comprised between 10 and 17.

Keywords: Donor and acceptor numbers; Titanium dioxide; Zeta potential; Organic molecules.