

2nd INTERNATIONAL AEGEAN PHYSICAL CHEMISTRY DAYS



7 - 10 OCTOBER 2004
AYVALIK/BALIKESİR - TURKEY



ORGANIZATION

BALIKESİR UNIVERSITY
Institute of Natural
and Applied Science
Department of Chemistry



TOPICS

Surface Chemistry and Colloids
Polymer Chemistry
Quantum Chemistry
Thermodynamics
Rheology
Spectroscopy
Catalysis
Chemical Kinetics
Electrochemistry
Phases and Phase Equilibrium
Enzyme Kinetics
Physical Organic Chemistry
Physical Chemistry Education



CONTACT

Prof. Dr. Mahir ALKAN
apcd2004@balikesir.edu.tr
Tel: +90 266 249 10 11
Fax: +90 266 249 10 12

WEB: <http://apcd2004.balikesir.edu.tr>
e-mail: apcd2004@balikesir.edu.tr

INVESTIGATING THE BEHAVIOUR OF POLY(METHYL METHACRYLATE) POLYMER (PMMA) MONOLAYERS AT THE AIR-WATER INTERFACE USING LANGMUIR ISOTHERMS

İnci Çapan¹, Rıfat Çapan¹, Taner Tanrısever² and Seda Can²

¹ Balıkesir Üniversitesi Fen-Edebiyat Fakültesi Fizik Bölümü Balıkesir 10100 Turkey,
E-address: ibasaran@balikesir.edu.tr, rcapan@balikesir.edu.tr

² Balıkesir Üniversitesi Fen-Edebiyat Fakültesi Kimya Bölümü Balıkesir 10100 Turkey,
E-address: taner@balikesir.edu.tr, sedacan@balikesir.edu.tr

Several poly(methyl methacrylate) (PMMA) molecules with various chain numbers has been synthesised using Emulsifier-free emulsion polymerization method. Langmuir-Blodgett thin film technique is an excellent method to investigate the surface behaviours of organic monolayers at the air-water interface. In this study, PMMA molecules have been studied at the air-water interface using Langmuir-Blodgett thin film method. Area per molecule for several PMMA molecules is found to be between 0.299 ± 0.01 and 0.976 ± 0.01 nm². It is also found that first surface pressure-area graph for the first compressing of the monolayer at the water surface is different than the surface pressure-area graph obtained after a decompression of the monolayer. Isotherm graphs show that long alkyl chain groups of these molecules may cause aggregation behaviours on water surface and a model for the behaviour of PMMA molecules on the air-water interface due to surface interactions has been proposed.

A part of this work is supported by Turkish Research Council (TUBITAK) in Turkey TBAG-1940(100T047).