Microprocessor-based System for Long Kinetics Experiment Programming and Control, and Data Acquisition, Display and Analysis

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A very flexible and low-cost system was developed around a JASCO mod. Uvidec-320 spectrophotometer, using a Rockwell AIM 65 microcomputer, a Houston Instrument mod. Hiplot digital plotter, a Philips mod. N 2228 cassette recorder, a Fluke mod. 2170A digital thermometer and 3 circulating water thermostatting units.

The system was designed for conducting in a fully unattended way up to 3 simultaneous and independent experiments on kinetics such as those relative to sol-gel or coil-helix transitions. The measurable length of kinetics ranges from 1 minute (for one single experiment) to several thousand hours. The system is capable of selecting at pre-programmed times one of its 3 independetly thermostatted cuvettes; of acquiring absorbance data relative either to full spectra within the wanted wavelength range, or single pre-selected wavelength values; of displaying data on its plotter and on its thermal printer, of storing them on standard cassettes; of recalling them at the end of the experiment for (not particularly complex) data analysis and display of analysis results. The system includes a simple back-up system against power failures.

Selective Interactions between Spin Probes and Lyotropic Phases with Anionic or Cationic Head Groups

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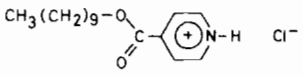
A new lamellar lyotropic phase with a positively charged polar interface has been obtained by mixing water and decanol with *n*-decyl isonicotinate hydrochloride in appropriate concentration.



The order parameters of several spin probes incorporated in this mesophase have been determined by electron spin resonance spectroscopy. A comparison is made with the results for the same probes in the lamellar phase of water, decanol and sodium decanoate, having an anionic interface.

The experimental findings are rationalized in terms of selective interactions of the probes with specific regions of the bilayers.