in order to obtain linear dichroism spectra of 'guest molecules'.

Finally the problem of a possible influence of LC used as a solvent for chemical reactions will be discussed.

Reactions and Behaviour of Organic Anions in Two-Phase Systems

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Two-phase systems are presently widely applied as convenient and versatile media for reactions of inorganic and organic anions with organic molecules. The main feature of this approach is that organic and inorganic reactants are located in two immiscible phases and that reactions proceed in the presence of catalysts – tetraalkyl ammonium or phosphonium salts or crown ethers. Consequently reacting anions are introduced into the organic phase and react with organic reactants in the form of salts with lipophilic cations supplied by the catalysts. Typical reactions and specific behaviour of organic anions generated in two-phase systems and role of the boundery between the two phases will be discussed.

Pyridinium-N-Phenoxide Betaine Dyes as Solvent Polarity Indicators. Some New Findings

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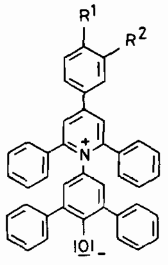
The position of the long-wavelength, intramolecular charge-transfer UV/Vis. absorption band of pyridinium-N-phenoxide betaine dyes of the general formula 1 is very sensitive to changes in solvent polarity (negative solvatochromism) [1], temperature (thermo-solvatochromism) [2], external pressure (piezo-solvatochromism) [3], as well as to the introduction of substituents R^1 and R^2 in the 4-phenyl ring [4]. This extreme sensitivity of 1 ($R^1 = R^2 = H$) to small changes in the surrounding medium has been used to establish an empirical scale of solvent polarity, called the $E_T(30)$-scale [1, 5]. $E_T(30)$-values are simply defined as the transition energy of 1 ($R^1 = R^2 = H$), measured in kcal/mol (or kJ/mol). They are known for more than 150 organic solvents and numerous binary organic solvent/water mixtures, and they have found wide application [5, 6].



It will be shown that empirical parameters of solvent polarity such as the $E_T(30)$-values can be understood within the framework of Linear Free-Energy (LFE) Relationships [6].

Examples for the application of $E_T(30)$-values to correlate spectral, thermodynamic, and kinetic solvent-dependent data taken from different areas of chemistry will be given.

Finally, the improvement of the LFE-correlations of singular empirical parameters of solvent polarity such as the $E_T(30)$-values by means of multiparametric equations will be described.

References

1 K. Dimroth, C. Reichardt, T. Siepmann and F. Bohlmann, *Liebigs Ann. Chem., 661,* 1 (1963); K. Dimroth and C. Reichardt, ibid., 727, 93 (1966); C. Reichardt, ibid., 752, 64 (1971).
2 K. Dimroth, C. Reichardt and A. Schweig, Liebigs Ann. Chem., *669,* 95 (1963).
3 K. Tamura and T. Imoto, *Bull. Chem. Soc. Jap., 48,* 369 (1975); J. v. Jouanne, D. A. Palmer and H. Kelm, *ibid., 51,* 463 (1978).
4 C. Reichardt and R. Müller, *Liebigs Ann. Chem., 1976,* 1937.
5 C. Reichardt and K. Dimroth, *Fortschr. Chem. Forsch., 11,* 1 (1968).
6 C. Reichardt: 'Solvent Effects in Organic Chemistry', Verlag Chemie, Weinheim, New York (1979); C. Reichardt, *Angew. Chem., 91,* 119 (1979); *Angew. Chem., Int. Ed. Engl., 18,* 98 (1979).

Solute–Solvent Interactions in Ring Formation

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Physical organic investigations on ring forming reactions from bifunctional substrates over a broad