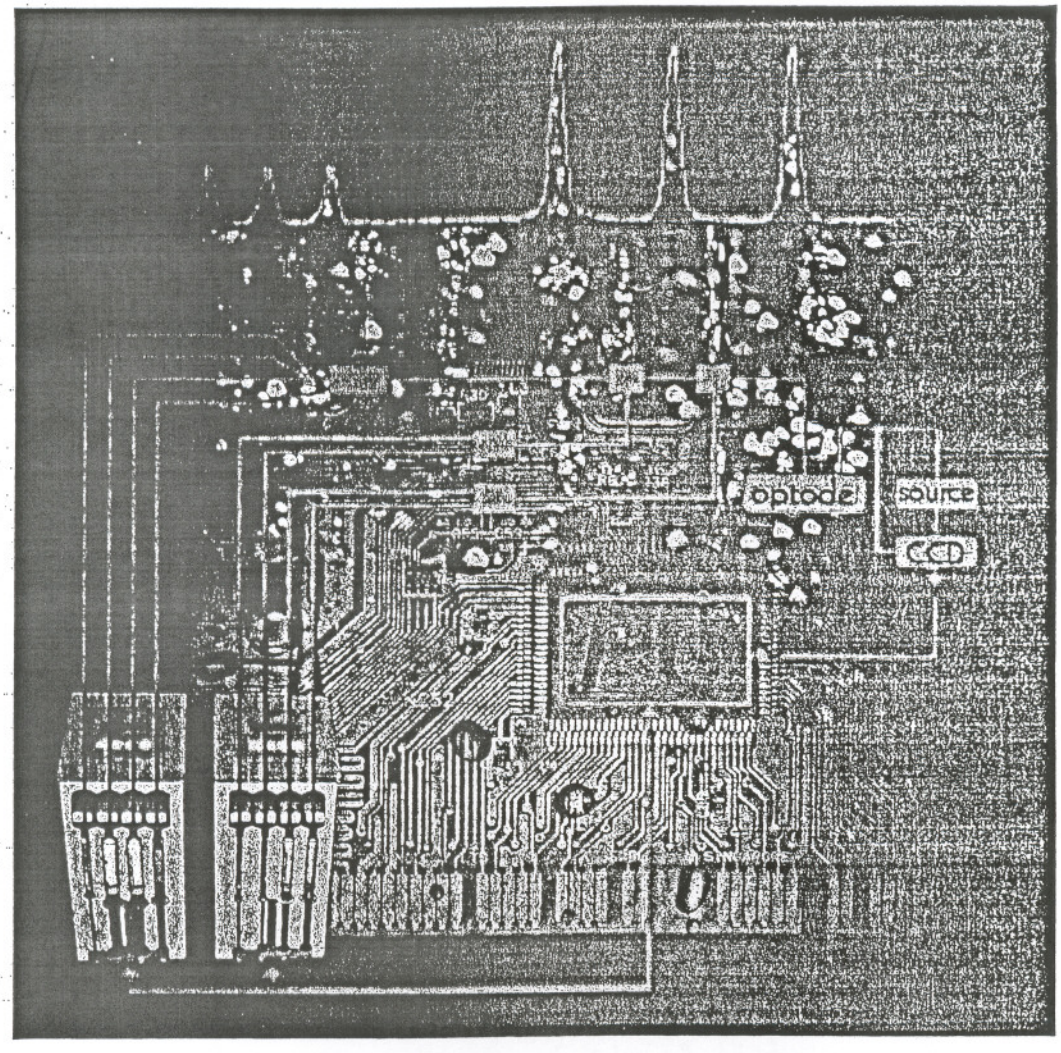

FLOW ANALYSIS XI

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FLOW METHODS FOR DYNAMIC SYSTEM MONITORING: "OLD" APPROACHES TO "NEW" CHALLENGES

Ildikó V. Tóth [a], Francisco M. Campos [a], Karina B.H. Domínguez [b], Susana S.M.P. Vidigal [a], António O.S.S. Rangel [a]

[a] *CBQF/Escola Superior de Biotecnologia, Universidade Católica Portuguesa. 4200-072 Porto, Portugal*

[b] *Universidad de Salamanca, Facultad de Ciencias Químicas, Dpto. de Química Analítica, Nutrición y Bromatología, Salamanca 37008, Spain*

Over the years flow injection analysis and other automated flow techniques have been acknowledged as powerful analytical tools for serial wet chemical assays and for the study of kinetics of chemical interactions. Nowadays, its scope is broadening into environmental research and into biotechnology as a tool for the study of biological processes. In these dynamic processes, accurate and fast assessment of chemical parameters is essential.

In this work, some applications of the different flow strategies to dynamic problems are discussed and versatility of the applications is demonstrated through various examples as, i) a flow injection method for monitoring cell membrane damage of wine lactic acid bacteria and in *Listeria innocua*; ii) a sequential injection flow assay for monitoring glycerol in a sugar fermentation process by *Saccharomyces cerevisiae*; iii) a sequential injection lab-on-valve system for the on-line monitoring of hydrogen peroxide in lens care solutions. Special emphasis is given to the challenging difficulties inherent to the dynamic systems under study.

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