

C.V.L. Gierst

On the occasion of his 70th birthday and in recognition of his outstanding contribution to electrochemistry

With this volume, the Electrochemical Community pays homage to Professor Gierst on the occasion of his 70th birthday.

Born on April 28, 1923, Lucien Gierst studied Chemistry in Belgium, first at the University of Liège and later at the University of Brussels. He started his scientific career at the Université Libre de Bruxelles, where he obtained his Ph.D. degree in 1952. At the same University, he held successive positions of Assistant, Researcher at the Belgian National Fund for Scientific Research (F.N.R.S.), Chief-Assistant, and became Associate Professor in 1963 and Full Professor in Analytical Chemistry and Electrochemistry in 1975. Although he officially retired from the University in October 1988, he remains in the laboratory as an appreciated research collaborator.

Shortly after the second world war, Lucien Gierst started to build up a modern laboratory of electrochemistry in Brussels by developing advanced electrochemical equipment. His first key achievement was the revival of the chronopotentiometric method, more than half a century after Sand's early work.

The continuous search for optimal instrumentation and methodology adapted to his further studies has attracted many foreign scientists to his laboratory. Active collaborations have sometimes also resulted in the exportation of prototypes (namely chronocoulometers) to several countries.

Besides work devoted to mass transfer problems under various electrical programmations, Lucien Gierst's research deals mainly with the kinetics of the approach of the reactant to the electrode. His work emphasizes the fact that two divorced branches of electrochemistry which are dealing with electrolyte solutions and electrodes are much more interconnected than has been supposed. The originality of his work lies in the use of reactants as probes for the study of the double layer. Many years of work were summarized in a paper published in 1970 in *Croatica Chimica Acta*. The comparative examination of a large diversity of reactants and supporting electrolytes has led to the conclusion that besides the Frumkin mechanism, local ion–ion interactions and possible interference of proto-genic catalysis also affect the electrode kinetics significantly. By considering that mercury acts as a cavity macro-ion, most of the effects observed can be explained coherently on the basis of the Gurney concept, according to which attractive interaction between particles is observed when both exert the same type of structural action on their surrounding water molecules.



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Another way of modifying the structure of the double layer is provided by the adsorption of neutral organic molecules at the mercury–water interface. The mode of adsorption of molecules such as thiourea and quinolines has constituted the main subject of Lucien Gierst's research during the last ten years. These surfactants may form 2D condensed films. Interest has been focussed mainly on the influence of the molecular structure on the occurrence of 2D phase transitions and on the kinetics of condensation. The identification of mononuclear transients was the key finding for the interpretation of the slow adsorption kinetics in terms of a nucleation and growth mechanism.

With more than 100 lectures reporting the results of his research at meetings and many teaching activities in various universities, such as Harvard, or in Minneapolis, Philadelphia, Paris, Bari and Padova, Lucien Gierst has always attracted foreign scientists to his laboratory.

For several years, he has also been a member of various scientific societies and committees such as I.U.P.A.C., the International Society of Electrochemistry, the United Nations Educational, Scientific and Cultural Organization (through its cooperation programme in electrochemistry), and held positions on the board of several analytical chemistry and electrochemistry journals. He is also a founder member of the Editorial Board of the *Journal of Electroanalytical Chemistry*.

In addition to all his tasks in research, teaching and administrative management, he has also found time to pursue various hobbies. All of his students, foreign guests and friends certainly remember his fascination for byzantine iconography, astronomy, ornithology and linguistics of romance dialects. By his enthusiasm, he has communicated part of his broad knowledge and interest to his coworkers in the laboratory in Brussels and abroad.

It has been a great pleasure to note that the idea of dedicating an issue of the *Journal of Electroanalytical Chemistry* to Lucien Gierst was immediately and eagerly supported by many colleagues.

I would like to thank all the contributors, and the Editor of the *Journal*, for their support.

Together we congratulate Professor Lucien Gierst and wish him all the best for the future.

C. Buess-Herman

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