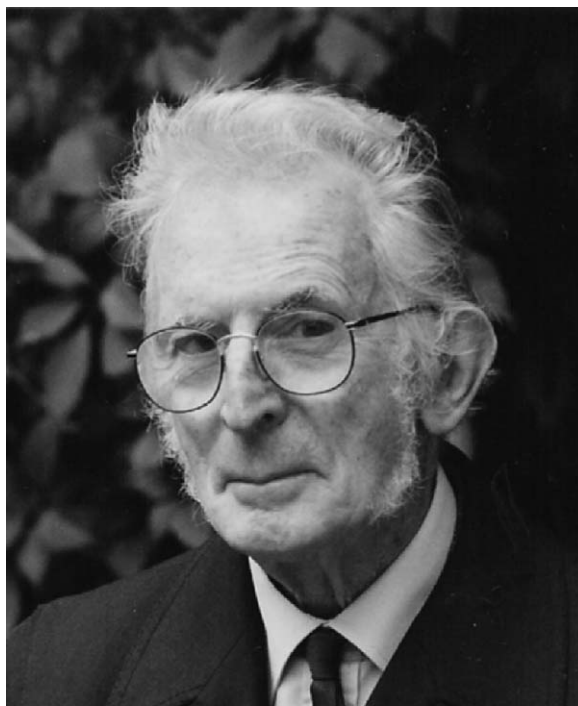


Pierre Le Goff  
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Pierre Le Goff

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Pierre Le Goff, Professor of Chemical Engineering at the Institut National Polytechnique de Lorraine in Nancy, France, and known as a specialist in exergy analysis and thermal transformers among other fields, passed away on 7 March 2005 in his 83rd year.

Pierre Le Goff was born in Brest (a harbour city in the far west French Bretagne) in 1923. He entered the National School of Chemical Industries of Nancy (ENSIC) during the Second World War, and graduated in 1947. At that time, besides classical chemistry, the engineering aspects were taught under the headings of “Industrial Chemistry” and “Industrial Physics”. Le Goff became an assistant Professor at ENSIC and started his Ph.D. work on physico-chemical kinetics at gas–solid interfaces, tracking free radicals by mass spectrometry. His thesis supervisor was Professor Maurice Letort, head of ENSIC from 1946 to 1956, who had introduced formal courses on unit operations and transport processes in the ENSIC curriculum, and had founded the first “Chemical Engineering Chair” in 1952 (then held by René Gibert). He encouraged the young Le Goff to invest in this direction. While finishing his thesis, Le Goff set up a full-size teaching program, including unit operations laboratory. Through Letort’s relations, he had the opportunity to interact with a remarkable series of US professors who came on sabbatical leave or visit to Nancy (E.L. Piret, Minnesota; B.J. Dodge, Yale; C.O. Bennett, Purdue; D. Mason, Minnesota, A. Rose, Missouri, all in the early 1950s...). He also visited different Chemical Engineering departments in the US, which contributed to giving him a clear view of the future of Chemical Engineering as a discipline in France.

In 1959, he became Full Professor on the Chemical Engineering Chair at ENSIC (René Gibert had passed away), and started new research themes on mass transfer in liquid–liquid systems, on statistical geometry of packings, on fluidization, on filtration, on flow in porous media, and on gas–liquid mass and heat transfer, while maintaining fundamental activities on gas–solid interfaces. In the early 1960s, the first continuing education sessions for engineers from industry were organized by him, laying the foundation of what was to become the Centre de Perfectionnement des Industries Chimiques (CPIC) a decade later.

In 1964, he founded a laboratory of the “Centre National de la Recherche Scientifique” under the name “Centre de Cinétique Physique et Chimique”, trying to bridge the gap between his two poles of interest: fundamental gas–solid kinetics, and chemical engineering. Early original researches carried out in this laboratory included among other processes: oxidative coupling of methane by focusing molecular beams on a heated filament; manufacturing of lamellar and stratified co-condensation thin-layer materials, deposit of controlled texture refractory materials with a plasma torch, laser ignition of fast chemical reactions in micro-reactors, in other words, subjects that have become very fashionable nowadays. In parallel, the unit operations teams worked on gas–solid and gas–liquid batch fluidized and circulating fluidized beds operations, started new work on fixed bed operations and electrochemical engineering, developed numerical simulation, and under the leadership of Jacques Villermaux, then a young Associate Professor, organized the field of chemical reaction engineering.

The advanced ideas of Pierre Le Goff in the 1960s have been taken up, more or less implicitly, in many later researches. Some concepts such as percolation theory and fractal geometry as applied to chemical engineering, are connected to cell models proposed by him 40 years ago.

In 1970, P. Le Goff and J. Bastick founded the CPIC, an organization with original teaching methods, built on the experience of the former 10 years, designed for attracting to Nancy and “converting” chemists and engineers from industry and graduates from other engineering schools, for continuing education, specialization or conversion to other fields. Continuing education later also became a subject of scientific research for him: he proposed a mathematical model to take into account factors such as obsolescence, aging, motivation, creativity, specialization, comparing the human brain to a conventional chemical reactor and considering scientific knowledge as an extensive property, subject to balance relations. The model brought to light that continuing education organizations must play the role of a catalyst, that of teaching how to learn, and this finding remains fully pertinent today.

By 1975, the important but divergent development of both basic gas–solid interface research and unit operations research led to the founding of the Chemical Engineering Science Laboratory (LSGC), a national laboratory of the French CNRS, headed by J. Villermaux. P. Le Goff withdrew from administrative and management activities, and initiated brand new research activities, at the interface of energetics and economics. He imported from other fields concepts new to chemical engineers, such as “value accounting”, “energy-cost charts”, introduced “informed energy”, advocated exergy analysis and developed corresponding

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