CURRICULUM VITAE

Surname:	Drakidès
First name:	Christian
Date of birth:	11 August 1946
Nationality:	French
Marital status:	Married, 3 children

Initial education

Institution	From – to	Degree obtained
Université Paris 6	1967 – 1973	Postgraduate Doctorate (Doctorat de 3ème cycle) in Ecology

Continuing education

Regular participation in various professional training courses as part of my duties (electrical and general safety, various IT tools, networks, modelling, statistics, scientific documentation and communication in English, technology transfer, project management…).

Foreign languages (scale of 1 to 5)

	Read	Spoken	Written
English	1	1	1
Spanish	1	2	2

Other skills

Use of microscopic examination and video-microscopy imaging tools; design, instrumentation and monitoring of laboratory and industrial pilot units; data acquisition and processing; modelling; design and management of R&D projects.

Representation

Member of numerous professional bodies (GRUTEE, AFEE, ASEES…) and of numerous scientific committees (CEREHMER, Zone Libellule…). Member for 3 years, then Chairman for 2 years, of the Scientific and Technical Steering Committee “Water, Environment, Geosciences, Risks” of Transfert Languedoc-Roussillon, in charge of evaluating projects supporting regional industrial development. Currently a member of the Scientific Committee of the Toulon Bay – Hyères Islands Bay Contract and of the Scientific Committee of the FUI MATRICS project.

Current position

Retired from the CNRS (Research Engineer), and employee of the SCOP Crealead (cooperative company).

Length of service in last position: 10 years

Main activities

Research: application of biological, ecological and chemical engineering methods to wastewater treatment, including: activated-sludge microbiology, biological nutrient removal, wastewater decontamination and reuse,

biological treatment of highly toxic industrial wastewater, conceptual and dynamic modelling of complex biological and physico-chemical systems. Scientific writing and communication in English. Listed on ResearchGate and Academia.

Development: design of pilot and field studies, interpretation of results and application to the development of innovative processes, selection of suitable processes and process optimisation (natural lagooning, reed-bed filters, filtration, infiltration, membrane bioreactors, sequencing processes…) for all types of urban or industrial effluents (small and large communities, landfill leachates, wastewater from refineries, petrochemicals, fertilisers, steelworks, paper mills, food industries…).

Initial and continuing education (see separate list): universities, engineering schools, professional training… in France and abroad. The "Biology of Activated Sludge" seminar alone, held every year, has been attended by more than 400 participants from private and public services (Lyonnaise des Eaux, SAUR, Veolia, SATESEs, health services…).

Consulting: regular activity for the public and industrial sectors – advice, expert assessment and project-owner assistance (AMO). Independent expert for Biosynergie.

R&D: several patents; currently scientific and technical director of a private structure created with former students within a regional SCOP. The structure designs, develops and markets services and systems for data acquisition and processing and for modelling of wastewater and waste treatment, for technical, energy and economic optimisation.

Specific experience in the relevant fields

Country	Date and subject
France	(Annual) Designer and leader of a continuing-education course, "Biology of Activated Sludge", for technical staff and managers of urban and industrial wastewater treatment plants and for inspection-service staff.
	(2000) On-site validation of the performance of the design and sizing of non-collective (on-site) sanitation systems (PAN S.A. / Languedoc-Roussillon Region).
	(2000) Participation in the validation of a reed-bed treatment system for small communities (SOLAR AQUATIC S.A. / ÉCOSITE MÈZE).
	(2001 – 2003) Feasibility study of a low-tech system combining aeration and a biofilter for the treatment and reuse of poultry-farm slurry (AQUAÉTUDES / PRATT Languedoc-Roussillon Region).
	(2002) Methodological advice: evaluation of operating indicators for small wastewater treatment plants under the European Directives (E.M.A. / Conseil Général du Gard, 30).
	(2002) Hosting of Prof. S. Fillipi (State University of Florianópolis, Brazil) and Prof. Y. Kengne (EIER, Cameroon): documentation and discussions on processes suited to emerging countries.
	(2002) Consultant for the development of an on-board wastewater treatment process for small rental boats.
	(2004) Expert assessment of the deodorisation system of the underground wastewater treatment plant of Monaco.
	(2005 – 2008) Long-term study of the performance and clogging resistance of zeolite filters for non-collective sanitation (SOMEZ study / AFT Languedoc-Roussillon Region).
	(2006) Study: comprehensive monitoring of the microbial ecosystem of cooling towers (TAR), Bouisson-Bertrand Laboratoires SAS.
	(2007) Expert assessment of the operation of the wastewater treatment plant of the Arzens cooperative distillery. Laboratory pilot study of wastewater treatability and evaluation of actual capacities.

	(2008) Study: assessment of the effects of a low-pressure UV reactor on the dechloramination of public swimming-pool water (BioUV SA). (2010 – 2012) Studies: 1) expert assessment and optimisation of the operation of the wastewater treatment plant of the HARIBO factory in Uzès; preliminary treatability study of the effluents in a laboratory pilot unit and development of a deterministic model of the full-scale plant. 2) Characterisation of the hydraulics and aquatic micro-ecosystems of an artificial vegetated zone designed to protect the receiving environment downstream of a wastewater treatment plant (Zone Libellule, Lyonnaise des Eaux).
Brazil	1997 – with CIE / NANCIE / Languedoc-Roussillon Region: – Course: extensive treatment processes (Federal University of Santa Catarina) – Consulting: sanitation project for the Içara conurbation (State of Santa Catarina) – Consultant: assessment of the value of extensive processes in southern Brazil (Federal University of Santa Catarina and Brazilian National Water Group)
Spain	(1998) Seminar: biological bases of wastewater treatment for engineers and PhDs (ATLL / ATC / Tallers d'Enginyeries / University of Barcelona, Barcelona). (2004 – 2006) Consulting: decision support for the choice of low-tech treatment processes suited to small rural communities, applied to some thirty sites in the Ebro basin and on the Atlantic side (Autonomous Region of Cantabria). (2006) Professional training course in Spanish, "Biological control of malfunctions in industrial wastewater treatment plants – cases of bulking and foaming" (Polytechnic University of Catalonia / Linde group).
Pacific Territories	(1999) Continuing-education course on water pollution control and management (IFAP / UM2 – CREUFOP, Nouméa, New Caledonia).
Africa	(2002 – 2005) On-site pilot study of the feasibility of a closed-loop aquaculture system with nutrient recycling through microphyte lagooning, Mbour (Senegal) – patent filed (Languedoc-Roussillon Incubator / IRD). (2007) Study: "Mobilisation of technical expertise in support of the formulation of a country strategy programme for Somalia under the 10th European Development Fund" (AGROPOLIS International).
Mexico	12 & 13 Sept. 2005: course in English, "Microbiology of Activated Sludges", Autonomous University of San Luis Potosí. (2005) Expert assessment of the SBR system developed by Proagua Tangamanga (Mexico) and advice to the manufacturer.
Romania	(2004 – 2007) Analysis of operating data from the wastewater treatment plant of the SIDEX steelworks (Mittal Group) – pilot studies and supply of a deterministic computer model of the biological process under extreme conditions (Ecosynergie bacteria).

Recent publications and communications

Lay-Son M, Drakides C: New approach to optimize operational conditions for the biological treatment of a high-strength thiocyanate and ammonium waste: pH as key factor. Water Res; 2008 Feb;42(3):774-80.

Drakides C, Lay-Son M: New approach for data evaluation of industrial wastewater treatment plant: methodology and case study for a coke and steel-processing plant. Water Sci Technol; 2009;60(11):2897-903.

Drakides C, Lay-Son M: Model development for biological treatment of toxic industrial wastewaters: an easy tool for linking pilot results and field data. World Journal of Modelling and Simulation, Vol. 6 (2010) No. 2, pp. 122-133.

Drakidès C. Keynote lecture: “Current state of water resources for industry”, conference “Water Savings and Recycling in Industry, Water Reuse & Contribution of Membrane Techniques”, CPE Lyon – jointly organised with the SFGP and the CFM, 17 and 18 November 2009.

Drakidès C. Communication: “Two-year evolution of dual-layer filtration systems under conditions representative of non-collective sanitation”. 6th National Conference on Non-Collective Sanitation (Assises Nationales de l’Assainissement Non Collectif) – Évreux, 30 September – 1 October 2009.

Christian Drakidès, Claudine Dieulin & Iñacio García del Campo: GIS-based decision support optimisation for a small collectivities regional sanitation plan concerning low-cost and rustic wastewater treatment systems. European Water Resources Association, 6th International Conference, 7-10 Sept 2005, Menton (France); poster and presentation.

C. Drakidès, M. Lay-Son, W. Balmer: Conditions for the use of zeolite materials in non-collective sanitation. Conference of the European Scientific Association for Water and Health (ASEES), Université Paris Descartes, 15-16 May 2008.

Delphine Cassan, Christian Drakidès: Effects of low- and medium-pressure UV lamps on the physico-chemical parameters of water and air in five chlorinated public pools between 2003 and 2007. Conference of the European Scientific Association for Water and Health (ASEES), Université Paris Descartes, 11-12 December 2008.

Christian Drakidès & Meiling Lay-Son: Aerobic granules formation in dual-layer percolating filters. J Civil Environment Engg 2012, 2:3.

Professional career

From / to	Location	Institution	Position	Description
1969 / 1972	Water Quality and Pollution Prevention Division, Paris	CEMAGREF, Ministry of Agriculture	Contract engineer	Development of methodologies for studying and monitoring biological treatment plants. Application to task definitions for the creation of inspection and operating-support bodies (SATESEs).
1974 / 1979	Water Treatment Laboratory, Univ. Montpellier 2	ADER	Contract researcher	Application of biology and chemical engineering to the modelling of activated-sludge systems – co-supervision of PhD theses.
1980 / 1993	Process Engineering Laboratory, Univ. Montpellier 2	CNRS	Design engineer	Study of extensive and intensive wastewater treatment processes – co-supervision of PhD theses and team management.
1994 / 2012	UMR HydroSciences, MSE, Montpellier	CNRS	Research engineer	Study and development of intensive and extensive biological wastewater treatment and reuse processes – management of R&D programmes.
2012 – 2022	SCOP Crealead, Montpellier		R&D manager	Setting up joint projects between Crealead, the University of Montpellier, industry and the public sector (MATRICS, ENERMOD…).