

PORTRAITS



Professor Em. Dr. ALFONS BUEKENS
born in Aalst (1942), Flanders, Belgium

Prof. Dr. Buekens was one of the first who researched about the environmental impact of dioxins and furans and did a great documentation of this scientific area. Next to that his speciality was research on the recycling and treatment of chemical and hazardous wastes.

On the European level he released impulse to modern waste management.

Studies and training

- Secondary school: Royal Athenaeum Aalst, 1947-59 (greatest distinction)
- State University of Ghent: Degree in Chemical Engineering 1959-64 (great distinction; M.Sc. (1964) and Ph.D (1967) at Ghent University (RUG);
- Applied Sciences, Ph. D. on "The thermal cracking of Hydrocarbons", 1964-67 (greatest distinction)
- Intensive course German (1962-64)
- Trainee in the R&D section of Photo Products Gevaert (now Agfa-Gevaert), Mortsel, Belgium. Assignment: Solvent recovery in the Film Sub-layer Division, August 1963
- Politecnico di Milano (Istituto di Chimica Industriale), Milan, Italy. Collaborator of Prof. Pasquon and Prof. Dente. Assignment: computer simulation of free radical mechanisms in the pyrolysis of hydrocarbons, May-June 1971.

He was full professor at the Vrije Universiteit Brussel (VUB) until 2008, since 2002 emeritus.

Professional Background

- 1964-1966: Preparation of Ph.D. work, with a grant from I.W.O.N.L.
- 1968-1970: Assistant and First Assistant at the University of Ghent
- 1970-1976: Junior Professor V.U.B. ("Docent")
- 1976-2002: Full Professor at the Free University of Brussels (V.U.B.)
- Part-time professor at: The Catholic University of Louvain (1976-85) / The University of Antwerp (1982-97) / The Technical University of Delft – The Netherlands / The Bosphorus (formerly American) University of Istanbul – Turkey - Teaching a NATO course on environment and waste management / The Technical University of Surabaya – Indonesia / The Technical University of Sofia – Bulgaria / Universidad San Simon de Cochabamba – Bolivia / Universität Essen - Deutschland
- External Examiner Eötvös University/Technical University Budapest
- TEMPUS Teaching: environment and waste management
- October 1, 2002 Emeritus status; with still some assignments (Safety, Human Ecology VUB) and Research work in the Field of Dioxins
- 2001-2002: 5 months assignment as a guest professor
- 2002-2003: 5 months assignment as a guest professor both at Tohoku University, Sendai, Japan
- 1988-1989: Principal Advisor of the Minister of Environment, Housing and Industrial Plant, (1 June 1988 - 11 July 1989)
- He lectured at numerous universities: Ankara (Turkey), Antwerp (B), Cochabamba (Bolivia), TU Delft (NL), Uni Essen-Duisburg (D), Ghent (B), Hasselt (B), Louvain (B), Sofia (Bulgaria), Surabaya (Indonesia), and was in 2002 and 2003 Invited Professor at the Tohoku University of Sendai (Japan). Since 2008 he is Yongqian Professor and at present Pao Yue-Kong Professor at Zhejiang University (Hangzhou, P. R. of China).

Prices and Awards

- First Students Prize - Royal Association of Flemish Engineers for the M.Sc. Thesis on "The catalytic alkylation of toluene", 1965
- Robert De Keyser Award, donated by Shell Belgium, for the Ph.D Thesis on "The thermal cracking of hydrocarbons", 1967
- Mentoring-award of the Körber Foundation, Hamburg, 1988
- Recycling Award, donated by the Coca-Cola Foundation, for the Research Work on Activated Carbon Production from Wastes, 1989

- Award from Tokyo Metropolitan Government, 1977
- Award from Mendeleev Institute, Moscow, 1988
- Award from Kyushu University, Fukuoka, 1999

Major Research themes

- Thermal conversion of waste, including biomass, plastics, rubber, hazardous waste
- Air Pollution Problems, Dioxins, Products of Incomplete Combustion, arising from Thermal & Metallurgical Units.

Scientific and Technical activities

- 70 publications in scientific magazines
- 180 papers (e.g. conferences, seminars, ...)
- 20 articles in books and other works
- 600 advising reports
- 130 lectures in more than 30 countries

There are about 80 contributions in the field of dioxins, one of his favourite research areas

Acts or Acted as an Expert for:

- The World Health Organisation (W.H.O.), in Germany, Turkey, and Malta United Nations Organisation for Industrial Development (UNIDO) in the P.R. of Romania, the P.R. of China
- E.C. (D.G. VIII, XI, XII and XVII) in England, France, Republic of Guinea-Conakry, Sierra Leone
- The Belgian General Agency for Cooperation of Development, Zaire (now Congo), Indonesia
- The Council of the Prosecution during the Dioxin crisis in Belgium - May 1999, with testing at The Japanese academic an industrial world

Led projects and assignments in a lot of countries, e.g. the E.U., USA, Algeria, Australia (Tasmania), Bolivia, Canada, China, Estonia, Guinea (Conakry), Indonesia, Kyrgyzstan, Rumania, Sierra Leone, Turkey, Venezuela, Zaire, and many others.

Project Coordination

Prof. Buekens successfully coordinated three EU projects:

- Treatment of Fly ash for sound material utilization, Up-cycle, EC Project n° ENV4-CT95-0085, (1996-1999)
- Chemical (pyrolytic) and mechanical recycling of plastics and composites, Cycleplast, EC Project n° PL964158, (1997-2000), with as partner Academy of Sciences of the Czech Republic and Hungarian Academy of Sciences
- Minimization of dioxins in the thermal industrial pro-

cesses : mechanisms, monitoring, abatement, Minidip, EC, Project n° PL970492, (1998-2001)

and participated in Haloclean. He currently acts as Principal Technical Advisor (PTA) on a number of E.U. research projects.

Member of Scientific Societies

- Royal Association of Flemish Engineers (K.V.I.V.)
- Flemish Chemical Association (V.C.V.)
- Royal Dutch Chemical Association (K.N.C.V.)
- Belgian Petroleum Institute (B.P.I.)
- International Association for Waste Pollution Research (I.A.W.P.R.C.)
- Institution of Incinerator Engineers
- The Flemish Chapter of the Filtration Society

Since 1976 he acted as an Environmental Consultant for the European Union (D.G. VIII, XI, XII, XVII), for UNIDO and WHO, and as an Advisor to T.N.O. (NL), Forschungszentrum Karlsruhe (D), and VITO (B). For 25 years, he advised the major industrial Belgian Bank (NMKN/SNCI) and conducted more than 600 audits of enterprise.

Main activities are in waste management, thermal and catalytic processes, and flue gas cleaning, with emphasis on heavy metals, dioxins, and other semi-volatiles. He coordinated diverse national and international E.U.-research projects (Acronyms Cycleplast, Upcycle, and Minidip) and participated in many others worldwide.

He is author of a book on Waste Management (1975), edited several books, countless Seminar Proceedings (>50), and a large Technical Encyclopedia (10,000 pages) and authored numerous scientific publications in refereed journals and more than 150 presentations at international congresses. He is a member of Editorial Boards for different journals and book series.

He played a role at the foundation of the Flemish Waste Management Authority O.V.A.M., of a hazardous waste enterprise INDAVER, and of the Brussels Environmental Protection Agency B.I.M./I.B.G.E. He was principal ministerial advisor in Brussels for matters regarding Environment, Housing, and Classified Enterprise (1988/89). He was a Member of the Board of the Belgian Consumer Association and of Conseur, grouping more than 1.5 million members in Belgium, Brazil, Italy, Portugal, and Spain.

He used to be licensed expert for conducting Environmental Impact Assessments (Air, Water, Soil) and Safety Studies regarding large accidents (Seveso Directive).