

University of Applied Sciences Vaud



Didier Louvier*

Abstract: The Packaging Laboratory, one of the laboratories of the mechanical engineering department of the University of Applied Sciences Vaud is also a member of the HES-SO competence group REAL TECH 'Food Production & Environmental- and Chemical Technologies'. The Packaging Laboratory, ISO 9001 certified, develops activities in packaging technology such as applied research and development in the area of Interaction Product-Packaging; transfer technology like packaging material and complete package characterisation and also development of new packages or optimisation of actual packages.

Keywords: Active packaging · Packaging material properties · Packaging technology · Residual printing solvents · Training systems

General Presentation

- 1983: Foundation of Packaging Laboratory at the 'Ecole Suisse d'ingénieurs des industries graphiques et de l'emballage, Lausanne (esig+)
- 1994: First certification ISO 9001
- 1998: Merger of esig+ in EIVD. Packaging Laboratory moves to Yverdon and joins the mechanical engineering department
- 1998: Foundation of HES-SO Competence Group REAL TECH 'Food Production & Environmental- and Chemical Technologies'
- 2000: New certification ISO 9001
- Training Systems
- Post-graduate training 'Food Packaging' (1996-1997; 200 lessons, 15 ECTS credits, partner: HEVs)
- Training modulus 'Characterisation of polymers-applications to packaging materials' (1995 and 1996; 2 days, partners: Ecole Européenne de Chimie Analytique, EPFL-DMX)
- Various seminars

Fields of Activities

- Measurements of physical and mechanical properties of packaging materials and complete packages
- Measurements of gas and water vapour transmission rate through packaging materials and complete packages
- Structural analyses of packaging materials
- Qualitative and quantitative analyses of residual solvents in printing packaging
- Interactions product-packaging
- Evaluation of package properties (handling, easy opening, storage...)
- Development of new packages and optimisation of currently used packages

Applied Research and Development

- Emission of toxic sulfur gases from polymers coming into contact with food products and with infants (partner EPFL/DMX) (1999)
- CTI/HES. Interaction product-packaging. Development of microwaveable packaging for heating and browning (crispy) a Swiss typical food product (partner EIV/Food Dpt) (1999-2000)
- HES-SO. Interaction product-packaging. Identification and quantification of printing residual solvents of packaging materials with HS-GC-MS analytical method (partners EIV/Food Dept, EIF/Chem Dept) (2001-2002)

Industrial Realisations

- Development of ways of conditioning in modified atmosphere for fresh fruit and vegetables (Active packaging)
- Determination of failures of tightness in flexible packages for enteral products.
- Determination of gas barrier properties of complete packages for food and pharmaceutical products
- Measurement of migration from synthetic packaging materials in contact with food products
- Structural analyses by infrared spectroscopy of multilayer packaging materials.
- Aroma migration in plastic materials

Economical Partners (Small and Multinational Companies)

- Food firms (e.g. Nestlé, Swiss Dairy Food...)
- Pharmaceutical, medical firms (e.g. Novartis, B. Braun Medical...)
- Technical products manufacturers (e.g. BTG S.A., Tusa S.A....)
- Stores (e.g. Bell AG, Migros...)
- Packaging materials and packages transformers (e.g. Aisapack, Ceta, Elag...)

*Correspondence: Prof. D. Louvier
 Head of Packaging Laboratory
 University of Applied Sciences Vaud (EIVD),
 route de Cheseaux 1
 CH-1400 Yverdon-les-Bains
 Tel.: + 41 24 423 23 31
 Fax: + 41 24 423 23 31
 E-Mail: didier.louvier@eivd.ch