



## GENERAL INFORMATION

Name **FERNANDES, LUIS**  
Address Rua Francisco Pedro Curado n°6 9°l 1170-139 Lisboa  
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E-mail [luis@mohid.com](mailto:luis@mohid.com); [luisfernandes@actionmodulers.com](mailto:luisfernandes@actionmodulers.com)  
Nationality Portuguese  
Date of Birth 19 of August 1977

## PROFESSIONAL EXPERIENCE

### 2009-Present

- Company -
- Type or Sector Consultancy
- Position Independent consultant
- Main activities Consultancy in the development and application of numerical models to simulate marine hydrodynamics, waves, sediment and pollutant transport (industrial and urban wastewater, submarine outfall discharges), water quality and biogeochemistry

### 2002 – 2009

- Company **Technical University of Lisbon**
- Type or Sector University/Research
- Position Researcher
- Main activities Development of MOHID Water Modelling System focusing on hydrodynamics, sediment transport and ecosystem modeling, software architecture, graphical user interfaces and development of operational forecasting systems

### 2004 – 2009

- Company **University of Évora**
- Type or Sector University
- Position Guest Assistant Professor, Department of Ecology
- Main activities Teaching "Pollutants Transport and Dispersion Mechanisms" to Environmental Science degree

## MAIN PROJECTS

- **2013**
  - Project Description **Software development for EKMAN Brasil**
  - Client Institution Development of an oil spill probabilistic model
  - Tasks EKMANBRASIL (Brazil)
  - Tasks Software development, technical and scientific consultancy
- **2013**
  - Project Description **Technical and scientific consultancy for IAEPM and EKMAN Brasil**
  - Client Institution Hydrodynamics, sediment transport and water quality modelling
  - Tasks EKMANBRASIL (Brazil)
  - Tasks Technical and scientific consultancy

- **2011-Present**
- Project Description **Technical and scientific consultancy for ENVIRONLINK**  
Hydrodynamics, heat and saline plume dispersion, harbor design, sediment transport and water quality studies
- Client Institution ENVIRONLINK (Brazil)
  - Tasks Technical and scientific consultancy
  
- **2012**
- Project Description **Technical modeling study for Action for EPTISA**  
Hydrodynamics and submarine outfall dispersion modeling studies
- Client Institution Action Modulers (Portugal), EPTISA (Spain)
  - Tasks Technical and scientific consultancy
  
- **2012**
- Project Description **Technical and scientific consultancy for EKMAN Brasil**  
Hydrodynamics, sediment transport and dredging management modeling studies
- Client Institution Action Modulers (Portugal), EKMANBRASIL (Brazil)
  - Tasks Technical and scientific consultancy
  
- **2011-2013**
- Project Description **Technical and scientific consultancy for Action Modulers**  
Development of a search and rescue module in MOHID Water Modelling System in the framework of the SAFER project
- Client Institution Action Modulers (Portugal)
  - Tasks Software development and testing
  
- **2011**
- Project Description **Technical modeling study for Action Modulers**  
High resolution hydrodynamic modeling around brigde pillars in Douala (Cameroon)
- Client Institution Action Modulers (Portugal) AQUALOGUS (Portugal)
  - Tasks Technical and scientific consultancy
  
- **2011**
- Project Description **Technical and scientific consultancy for EPAGRI**  
Technical and scientific training in hydrodynamics applied to aquaculture
- Client Institution EPAGRI (Santa Catarina - Brasil)
  - Tasks Technical and scientific training
  
- **2011**
- Project Description **Technical modeling study for AQUALOGUS**  
Hydrodynamics and sediment transport impacts of the Dande Port (Angola)
- Client Institution AQUALOGUS (Portugal)
  - Tasks Technical and scientific consultancy
  
- **2010- 2012**
- Project Description **Technical and scientific consultancy for INTECMAR**  
Hydrodynamic and ecosystem modelling in Ria de Arousa (Spain)
- Client Institution INTECMAR (Spain)
  - Tasks Technical and scientific consultancy
  
- **2010- 2011**
- Project Description **Technical and scientific consultancy for IST**  
Development of operational tools for HAB's prediction and development of generic interfaces between hydrodynamic and biogeochemical models
- Client Institution IST (Portugal)
  - Tasks Software development
  
- **2010**
- Project Description **Technical and scientific consultancy for INPE**  
Hydrodynamic and water quality modelling in Brazilian coastal areas
- Client Institution Intituto Nacional de Pesquisa Espacial (National Institute for Space Research - Brazil)
  - Tasks Technical and scientific consultancy

- **2010-2012**
  - Project Description
    - Client Institution
    - Tasks
  - **2009-2011**
  - Project Description
    - Client Institution
    - Tasks
  - **2009-Present**
  - Project Description
    - Client Institution
    - Tasks
  - **2008-2012**
  - Project Description
    - Client Institution
    - Tasks
  - **2004-Present**
  - Project Description
    - Client Institution
    - Tasks
  - **2002-Present**
  - Project Description
    - Client Institution
    - Tasks
  - **2007-2010**
  - Project Description
    - Client Institution
    - Tasks
  - **2007-2008**
  - Project Description
    - Client Institution
    - Tasks
  - **2006-2009**
  - Project Description
    - Client Institution
    - Tasks
  - **2005 - 2006**
  - Project Description
    - Client Institution
    - Tasks
- Technical and scientific consultancy for PROES**  
Hydrodynamic and water quality modelling  
PROES (Spain), HIDROMOD (Portugal)  
Technical and scientific consultancy
- Technical and scientific consultancy for INTERCONTROL**  
Hydrodynamic and water quality modelling in the Valencia harbor (Spain)  
INTERCONTROL (Spain), HIDROMOD (Portugal)  
Technical and scientific consultancy
- Technical and scientific consultancy for HYDEC**  
Hydrodynamic, sediment transport in coastal systems (Malaysia)  
HYDEC (Malaysia), HIDROMOD (Portugal)  
Technical and scientific consultancy
- Portuguese Coast Operational Modelling System**  
Circulation forecast system for the Portuguese Coast  
Technical University of Lisbon (Internal Project)  
Coordination of Software Development, Operational Modeling
- Portuguese Coast Wave Forecast System**  
Wave forecast system for the Portuguese Coast  
Technical University of Lisbon (Internal Project)  
Coordination of Software Development, Operational Modeling
- MOHID Water Modelling System**  
Development of the integrated water modelling system MOHID  
Technical University of Lisbon (Internal Project)  
Project coordinator and development (<http://mohid.codeplex.com>)
- ECOOP**  
European Coastal Shelf Sea Operational Observing and Forecasting System – Implementing an operational forecasting system for the Portuguese coast  
EU (FP6) - Technical University of Lisbon (IST)  
Development, technical and financial coordinator at IST
- EASY**  
European Atlantic Forecast System – Integrating operational modelling systems  
EU (INTERREG IIIB) - Technical University of Lisbon (IST)  
Development and technical coordination at IST
- INSEA**  
Data Integration System for Eutrophication Assessment in Coastal Waters - Development of an integrated modelling system for the Estoril coast (Portugal)  
EU - Technical University of Lisbon (IST)  
Development and technical coordination at IST
- SIMTEJO**  
Monitoring and Modeling of environmental impacts of wastewater discharge in the Lisbon urban area  
SimTejo – Águas de Portugal  
Hydrodynamic and water quality modeling

- **2002 - 2006**
    - Project Description
    - Client Institution
    - Tasks
- MABENE**  
 Managing Benthic Ecosystems in Relation to Physical Forcing and Environmental Constraints  
 EU - Technical University of Lisbon (IST)  
 Hydrodynamic and water quality modeling
- **2002-2009**
    - Project Description
    - Client Institution
    - Tasks
- SANEST**  
 Monitoring and Modeling of environmental impacts of wastewater discharge in the Estoril Coast  
 Sanest – Águas de Portugal  
 Numerical modeling of hydrodynamics, surface discharges and a submarine outfall

## EDUCATION

- **2002 - 2005**
    - Institution
- Master Degree in Ecology, Management and Modeling of the Water Environment  
 Instituto Superior Técnico – Technical University of Lisbon
- **1996 - 2001**
    - Institution
- Degree in Environmental Engineering  
 Instituto Superior Técnico – Technical University of Lisbon

## ADDITIONAL TRAINING

- **2005**
- NATO Advanced Studies Institute – Course on Advanced Modelling Techniques for Rapid Diagnosis and Assessment of Chemical, Biological, Radiological and Nuclear (CBRN) Agents Effects on Water Resources, 4-16 December 2005, Kumburgaz, Turkey
- **2006**
- Open Modelling Interface (OpenMI), WL Delft Hydraulics, 16-18 May 2006, Delft, The Netherlands

## LECTURES

- **2006**
    - Institution
    - Tasks
- 1<sup>st</sup> International MOHID Course - Lisbon, Portugal  
 Technical University of Lisbon  
 Course organization, Course Lectures of MOHID GUI, GIS and MOHID Water
- **2007**
    - Institution
    - Tasks
- 2<sup>nd</sup> International MOHID Course - Lisbon, Portugal  
 Technical University of Lisbon  
 Course organization, Course Lectures of MOHID GUI, GIS and MOHID Water
- **2008**
    - Institution
    - Tasks
- 3<sup>rd</sup> International MOHID Course - Sarigerme, Turkey  
 Technical University of Lisbon & IGEM Akademia  
 Course organization, Course Lectures of MOHID GUI, GIS and MOHID Water
- **2009**
    - Institution
    - Tasks
- Coastal hydrodynamics modelling - MOHID Course - Fortaleza, Brazil  
 Technical University of Lisbon & LABOMAR (Fortaleza, Brazil)  
 Course organization, Course Lectures of MOHID GUI, GIS and MOHID Water
- **2009**
    - Institution
    - Tasks
- MOHID Course on coastal and estuarine applications - Lisbon, Portugal  
 Technical University of Lisbon & HIDROMOD  
 Course organization, Course Lectures of MOHID GUI, GIS and MOHID Water
- **2009**
    - Institution
    - Tasks
- 4<sup>o</sup> International MOHID Course - Sarigerme, Turkey  
 Technical University of Lisbon & IGEM Akademia  
 Course organization, Course Lectures of MOHID GUI, GIS and MOHID Water
- **2010**
    - Institution
- 5<sup>o</sup> International MOHID Course - Istanbul, Turkey  
 Technical University of Lisbon & IGEM Akademia

Tasks	Course organization, Course Lectures of MOHID Studio and MOHID Water
• 2011	Basic and Advanced MOHID course on coastal and estuarine applications
• Institution	EPAGRI, Florianópolis, Santa Catarina – Brasil
Tasks	Course organization, Course Lectures of MOHID Studio and MOHID Water
• 2013	MOHID Course on coastal and estuarine applications - Lisbon, Portugal
• Institution	Technical University of Lisbon & Action Modulers
Tasks	Course organization, Course Lectures of MOHID Studio and MOHID Water

## PERSONAL SKILLS AND COMPETENCES

### MOTHER TONGUE

### PORTUGUESE

### OTHER LANGUAGES

- Reading Skills
- Writing Skills
- Verbal Skills

### ENGLISH

Excellent  
Excellent  
Excellent

- Reading Skills
- Writing Skills
- Verbal Skills

### SPANISH

Excellent  
Good  
Good

- Reading Skills
- Writing Skills
- Verbal Skills

### FRENCH

Basic  
Basic  
Basic

## TECHNICAL SKILLS AND COMPETENCES

- Software Development

Coordinator of the development and technical/scientific training of the MOHID Water Modeling System at [www.mohid.com](http://www.mohid.com) and [mohid.codeplex.com](http://mohid.codeplex.com)

Large experience in developing numerical modeling software using Fortran 90, namely the MOHID Water Modelling System, including also numerical libraries like MPI, OpenMP, HDF and NetCDF. Large experience in the development of operational modelling support tools in VB.NET, C#, Java, ASP.NET, HTML, Matlab

- Software Usage

Experience in using Microsoft Visual Studio 2005-2010 and all common office tools  
Advanced knowledge of numerical modelling tools: Wave Watch III, SWAN (waves)

## MOST RELEVANT PUBLICATIONS

FERNANDES, L., 2005, "Modelling Arsenic Dynamics in the Tagus Estuary", MSc thesis in Ecology, Management and Modelling of the Marine Environment, Instituto Superior Técnico, Technical University of Lisbon

M. Mateus, G. Riflet, P. Chambel, L. FERNANDES, R. Fernandes, M. Juliano, F. Campuzano, H. de Pablo, and R. Neves, 2012, An operational model for the West Iberian coast: products and services, *Ocean Sci.*, 8, 713-732, doi:10.5194/os-8-713-2012

Andrew Clive Banks, Pascal Prunet, Julien Chimot, Pedro Pina, Jerome Donnadille, Eric Jeansou, Muriel Lux, Giorgos

Petihakis, Gerasimos Korres, Giorgos Triantafyllou, Clement Fontana, Claude Estournel, Caroline Ulises, LUIS FERNANDES, 2012, A satellite ocean color observation operator system for eutrophication assessment in coastal waters, Journal of Marine Systems, Volume 94, Supplement, June 2012, Pages S2-S15, ISSN 0924-7963, 10.1016/j.jmarsys.2011.11.001.

N. Vaz, L. FERNANDES, P.C. Leitão, J.M.Dias, R.Neves, 2009, The Tagus Estuarine Plume Induced by Wind and River Runoff: Winter 2007 Case Study, Journal of Coastal Research, SI56, 1090-1094, ICS 2009 Proceedings

Martin, F., Hedger, R. D., Dodson, J. J., FERNANDES, L., Hatin, D., Caron, F. and Whoriskey, F. G., 2009, Behavioural transition during the estuarine migration of wild Atlantic salmon (*Salmo salar* L.) smolt. Ecology of Freshwater Fish, 18: 406–417. doi: 10.1111/j.1600-0633.2009.00357.x

Trancoso, A., Saraiva, S., FERNANDES, L., Pina, P., Leitão, P. and Neves, R., 2005, Modelling Macroalgae using a 3D hydrodynamic ecological model in a shallow, temperate estuary, Ecological Modelling, Vol. 187, Issues 2-3, 232-246

G. Riflet, P.C. Leitão, A. R. Trancoso, A. Canas, R. Fernandes, L. FERNANDES, A.C. Garcia, M. Mateus, R.J. Neves, 2007, Assessing the quality of a pre-operational model for the Portuguese Coast, Geophysical Research Abstracts, Vol. 9, 09979, 2007

Ramiro Neves, J. Saldanha Matos, Luís FERNANDES, Filipa Ferreira; 2007, Integrated Water Management, Symposium on Scientific Research at the Technical University of Lisbon, Professor Manuel Seabra Pereira, Lisbon, 2- 3 February, Lisbon, Portugal – Published as “A Portrait of State-of-the-Art Research at the Technical University of Lisbon”, Oom de Seabra Pereira, M. (Ed.), Springer, 2007, X, 622 p., Hardcover, ISBN: 978-1-4020-5689-5

Frank Braunschweig, Paulo Chambel, Luís FERNANDES, Pedro Pina and Ramiro Neves; 2004, The object oriented design of the integrated modelling system Mohid; Proceedings of the XVth International Conference on Computational Methods in Water Resources (CMWR XV), June 13-17 2004, Chapel Hill, NC, USA

Luca Van Duren, Phil J. Wiles, Luis FERNANDES, Jens K. Petersen, Hans Burchard, John H. Simpson, Tom Ysebaert, Peter M.J. Herman, 2005, Large-scale advection and small-scale turbulent mixing in mussel-dominated estuaries, Warnemuende Turbulence Days 2005, Warnemuende, Germany, 28-30 September

F. Braunschweig, L. FERNANDES , P. Galvão, R. Trancoso, P. Pina and R. Neves, 2005, Mohid GIS - A geographical information system for water modeling software, Geophysical Research Abstracts, Vol. 7, 08213 - European Geosciences Union