

# CURRICULUM VITAE

DR. IR. PETER O. VAN IMPE

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## PERSON INFORMATION

Date and place of birth: July 5th 1974, Aalst, Belgium.  
Nationality: Belgian.  
Marital status : Married - 3 children.

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## ADDRESS

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## ACADEMIC DEGREES

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| 1995 | BSc. Civil Engineering, Ghent University, Belgium.  |
| 1997 | MSc. Civil Engineering, Ghent University, Belgium.<br>Thesis: <i>Interaction soil-expanding grout in anchor design</i> ;<br>Promotor: Dr. ir. P. Mengé.   |
| 1999 | MSc. Geotechnical Engineering, Ghent University.<br>Thesis: <i>Consolidation of saturated, highly compressible porous media</i> ; Promotor: Dr. ir. P. Mengé.   |
| 2003 | PhD Environmental Geotechnics, Dipartimento di Fisica e Ingegneria dei Materiali e del Territorio, Università degli Studi di Ancona, Ancona, Italy.<br>Thesis: <i>Consolidation, contaminant transport and chemico-osmotic effects in liner materials : a theoretical and experimental study</i> ; Promotors: Prof. Dr. ir. E. Pasqualini (UNIAN), Dr. D. Constaes (UGent). |

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## CAREER

- 10/1997–10/1999 Scientific researcher IWT-project “Zandwinningsput” (use of horizontal drainage in soft soils, characterization of soil–cement mixtures), Laboratory of Geotechnics, Ghent University, Belgium.
- 10/1999–10/2003 Scientific researcher GOA-project “A simulation model for the coupling of consolidation and contaminant transport for covering liners of waste disposals”, Laboratory of Geotechnics, Ghent University, Belgium.
- 10/2003–10/2006 Postdoctoral researcher, assistant-professor, Laboratory of Geotechnics, Ghent University Belgium.
- 10/2006–today Geotechnical and Geo-environmental consultancy office AGE bvba.
- 11/2007–today Research leader MIP-project “In situ conditioning of dredged material and mineral sludges”, Laboratory of Geotechnics, Ghent University, Belgium (part-time).

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## PROFESSIONAL ACTIVITIES

### Research

- Stress-strain behaviour of clay-cement mixtures.
- Design parameters for the  $\Omega$  screw pile.
- Preliminary design of small diameter tunnel boring machine for expanding clays.
- Large strain consolidation.
- Vacuum drainage technique.
- Development of CBFISCC and FISCC codes simulating large strain consolidation of dredged material (in co-operation with Nfam<sup>2</sup> research group, Ghent University).
- Impact of (de)floculating agents on the large strain behaviour of soft mineral sludges.
- Development of the general equations for consolidation, coupled flows and osmotic effects in clay.
- Development of GenMo v1 and GenMo v2 codes simulating coupled flow of 2 resp. 3 ion-groups in consolidation soils, taking into account competitive sorption, electrostatic interaction and physico-chemical effects (in co-operation with Nfam<sup>2</sup> research group, Ghent University).

- Promotor and assistant to several final degree and doctoral works on soil mechanics, foundation engineering and environmental geotechnics (UGent and UNIAN).

#### Consulting (Ghent University and AGE bvba)

- Slope stability port extension project Bintulu, Malaysia.
- Foundation study El Ferdan bridge, vertical and lateral capacity of large diameter bored piles.
- Slope stability phosphogypsumstack Rieme, analysis of intermediate and finale top cover system.
- Cover system acid tar ponds, stress-strain analysis acid tar material, Ertvelde, Belgium.
- Slope stability analysis phosphogypsumstack Proviron.
- Laboratory study on efficiency of geobags in dewatering paper sludge, Svartsjö, Zweden.
- Laboratory study to optimize quantity and type of  $\text{Fe}^{3+}$  in active barrier system.
- Analysis environmental parameters of a brownfield, London Gateway.
- Stability analysis cover system landfill Hooge Maey, Antwerp, Belgium.
- Use of non-typical materials for top cover systems (dredged material, goethiet,...).
- 3D MODFLOW simulations (several projects).
- Capacity of large diameter bored piles on crushable sands, Djibouti port.
- Consultancy on deep excavations in soft soils, Saint-Petersburg, Russia (Novaya Gollandya project, Second Mariinsky Theatre project, Gasprom city project)
- Stress-strain behaviour of crushable sands in land reclamation areas, Saudi-Arabia (Manifa Island) and Montevideo port, Uruguay.
- Stability of gabion wall.
- Geotechnical expert or advisor to the expert in lawsuits.

#### Other

- Head of the testing laboratory (organisation, budgets, reporting), Laboratory of Geotechnics, Ghent University (2003–2006).
- Head of the Environmental Geotechnics Research Group, Laboratory of Geotechnics, Ghent University (2003–2006).
- Member of the organizing committee of the BAP conferences (Deep Foundations on Bored and Auger Piles) edition 1998, 2003 and 2008.

- Network system administrator, Laboratory of Geotechnics, Ghent University.
- Organisator training sessions on Geotechnical and Environmental Geotechnics issues.
- Member of scientific review committee VICEG (Fifth International Conference on Environmental Geotechnics), Cardiff, UK 2006.
- Member of scientific review committee 6ICEG (Sixth International Conference on Environmental Geotechnics), New Delhi, India 2010.

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#### MEMBERSHIP OF RELEVANT PROFESSIONAL AND SCIENTIFIC ASSOCIATIONS

- Member of BGGF/GMBS (Belgian Geotechnical Society, ISSMGE).
- Member of IGS (International Geosynthetics Society).
- Member of IWWG (International Waste Working Group).
- Member of KVIV (Koninklijke Vlaamse Ingenieursvereniging).
- Member of technical committee on “Alternative Top Cover Materials”, adaptations to the VLAREA regulations on the use of waterglass mixtures as top cover material on landfills.
- Core-member of the International Technical Committee TC5 “Environmental Geotechnics” (ISSMGE).

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#### TEACHING

- 2002-2004: Lectures “Fundamentals of Environmental Engineering : Theoretical background on modelling direct and coupled flows in saturated soils” in the framework of “Civil Engineering and the Environment” (Prof. Dr. ir. William Van Impe), Bachelor Civil Engineering, Ghent University.
- 2002–2004: Lectures “Basic principles of flow through porous media” and “Advanced (coupled) flow and the related laboratory testing” in the framework of MSc. Environmental Geotechnics, Ghent University.
- 2003: series of lectures (20 hrs) on “Migration of groundwater contaminants” in the framework of flemish inter-university co-operation (VLIR) with the University of Cochabamba, Bolivia (16-20 June 2003).
- 2003–2005: Co-worker on Integrated Projects (part on foundation engineering), Bachelor Civil Engineering, Ghent University.
- 2003–2006: Course on “Grondwater- and contaminantflow”, MSc. Civil Engineering, Ghent University.

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## COMPUTER SKILLS

- Geotechnical software (PLAXIS, GEOSLOPE Office, MODFLOW and related programs, HELP, LPILE, GROUP, POLLUTE, ...).
- Laboratory software (Labview).
- Visualisation software (Axum, gnuplot, 3D Master, Grapher, Surfer).
- Office applications ( $\text{\LaTeX} 2_{\epsilon}$ , MS Office suite).
- Operating systems (MS Windows XP/Vista, UNIX/Linux).
- Basic programming (Turbo Pascal, HP Pascal, Visual Basic, HTML, php, Tcl/Tk).
- Basic hardware skills.

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## PUBLICATIONS

- 1997            Van Impe P.O. (1997) : Use of a finite-element model to analyse the effect of an expanding grout in soil anchors, Proc. of the 11<sup>th</sup> Young Geotechnical Engineers' Conference, Madrid, Spain, September 24-27 1997 / ed. Sociedad Espanola de Mecanica des Suelo, pp. 73-74.
- 1998            Bottiau M.J., Meyus I.A., Van Impe P.O., Russo G. (1998) : Load testing at Fély site : introducing the Omega B+ pile, Proc. of the 3<sup>rd</sup> International Conference on Foundations on Bored and Auger Piles, BAP III, Gent, Belgium, October 18-21 1998 / ed. W.F. Van Impe, Balkema Publishers Rotterdam, pp. 187-200.
- Van Impe W.F., Viggiani C., Van Impe P.O., Russo G., Bottiau M. (1998) : Load-settlement behaviour versus distinctive Omega-pile execution parameters, Proc. of the 3<sup>rd</sup> International Conference on Foundations on Bored and Auger Piles, BAP III, Gent, Belgium, October 18-21 1998/ ed. W.F. Van Impe, Balkema Publishers Rotterdam, pp. 355-368.
- Peiffer H., Van Impe W.F., Van Impe P.O. (1998) : Soil parameters relevant to screw pile research testing at Fély test site, Proc. of the 3<sup>rd</sup> International Conference on Foundations on Bored and Auger Piles, BAP III, Gent, Belgium, October 18-21 1998 / ed. W.F. Van Impe, Balkema Publishers Rotterdam, pp. 411-416.

- Van Impe W.F., Verstraeten K., Van Impe P.O. (1998) : Experiences with CFA pile type under an existing building, Proc. of the 3<sup>rd</sup> International Conference on Foundations on Bored and Auger Piles, BAP III, Gent, Belgium, October 18–21 1998 / ed. W.F. Van Impe, Balkema Publishers Rotterdam, pp. 273–280.
- 1999 Van Impe W.F., Maertens L., Van Impe P.O. (1999) : Pile group behaviour prediction at El Ferdan - Egypt, Proc. of the 13<sup>th</sup> European Conference on Soil Mechanics and Geotechnical Engineering, Amsterdam, The Netherlands, June 7–10 1999 / Eds. F. Barends et al., Balkema Publishers Rotterdam, pp. 783–789.
- Van Impe W.F., Van Impe P.O. (1999) : Mechanical properties of MSW and considerations on consolidation of dredged materials, Proc. 17<sup>th</sup> Conferenze di Geotecnica di Torino, Torino, Italy, November 23–25, 1999 / volume 17.08, pp. 1–17.
- 2000 Van Impe W.F., Maertens, L., Van Impe P.O. (2000) : Foundation piers of the El Ferdan Bridge over the Suez Canal, honoring Prof. Katzenbach, Darmstadt, Germany, May 15, 2000, pp. 87–102.
- Van Impe W.F., Peiffer H., Van Impe P.O., De Vlieger H., K. Van Craenenbroeck (2000) : Evaluation of the soft soil improvement technique on a sludge deposit in Antwerp, Proc. International Conference on Geotechnical and Geological Engineering GeoEng 2000, Melbourne, Australia, November 19–24, 2000 / Technomic Publishing Company, pp. 361.
- 2001 Mazzieri F., Van Impe W.F., Haegeman W., Fratolocchi E., Van Impe P.O. (2001) : Preparation procedure influence on properties of compacted clay specimens, Proc. 15<sup>th</sup> International Conference on Soil Mechanics and Geotechnical Engineering, Istanbul, Turkey, August 27–31, 2001 / Balkema Publishers Rotterdam, pp. 1995–1998.
- Van Impe W.F., Van Miegheem J., Vandyke S., Van Impe P.O. (2001) : Underwater vacuum consolidation of dredged silt - a case history, Proc. 3<sup>rd</sup> International Conference on Soft Soil Engineering, Hong Kong, December, 2001 / Balkema Publishers Rotterdam, ISBN 90-265-1866-8, pp. 499–506.
- Van Impe W.F., Van Miegheem J., Vandyke S., Van Impe P.O. (2001) : Increasing the consolidation rate and macro

structural strength of silt through underwater vacuum consolidation, bijdrage tot rapport ISSMGE TC17, 2001.

2002

Mazzieri F., Van Impe P.O., Van Impe W.F., Constales D. (2002) : Effect of consolidation on contaminant transport parameters of compacted clays, Proc. 4<sup>th</sup> International Congress on Environmental Geotechnics, Rio de Janeiro, Brazil, August 11-15, 2002 / Eds. L.G. De Mello and M. Almeida, Balkema Publishers Rotterdam, pp. 183–188.

Van Impe P.O., Mazzieri F., Van Impe W.F., Constales D. (2002) : A simulation model for consolidation and contaminant coupled flows in clay layers, Proc. 4<sup>th</sup> International Congress on Environmental Geotechnics, Rio de Janeiro, Brazil, August 11-15, 2002 / Eds. L.G. De Mello and M. Almeida, Balkema Publishers Rotterdam, ISBN 90-5809-501-0, pp. 189–194.

Van Impe W.F., Verastegui R.D., Van Impe P.O. (2002) : Underwater sediments for the design of an embankment, Proc. International Workshop TC36 “Foundation Engineering in difficult soft soil conditions”, Mexico City, Mexico, May 23–24, 2002.

Van Impe W.F., Verastegui R.D., Van Impe P.O., Van Miegheem J. (2002) : Underwater sediments for the design of an embankment, Proc. 30<sup>th</sup> PIANC Congress, Sydney, Australia, September, 2002.

Constales D., Van Impe P.O., Mazzieri F. (2002) : Modeling chemico-osmotic phenomena induced by pollutant migration in clayey barriers, Proc. 5<sup>th</sup> European Conference on Numerical methods in Geotechnical Engineering, Paris, France, September 4–6, 2002 / Paris : LCPC, 2002. - ISBN 2-7208-6004-2, pp. 815–820.

2003

Mazzieri F., Van Impe P.O., Van Impe W.F., Constales D. (2003): Measurement of chemico-osmotic parameters in clayey soils, Proc. 13<sup>th</sup> European Conference on Soil Mechanics and Geotechnical Engineering, Prague, Czech Republic, August 25–28, 2003 / Ed. M. Vanicek, Czech Geotechnical Society, pp. 433–468.

Van Impe P.O., Mazzieri F., Constales D., Van Impe W.F. (2003): Coupled flow model for three-ion advective-diffusive-reactive transport in consolidating clay liners, Proc. 13<sup>th</sup> European Conference on Soil Mechanics and Geotechnical Engineering, Prague, Czech Republic, August 25–28, 2003 / Ed. M. Vanicek, Czech Geotechnical Society, pp.227–232.

- Van Impe W.F., Van Impe P.O., Mazzieri F.(2003): Advective-diffusive-reactive transport in consolidating clay liners and relevant chemico-osmotic parameters, honoring Prof. Meissner, Kaiserslautern, heft 9, pp. 219–228.
- 2004 Fratalocchi E.; Pasqualini E. ; Tazioli A. ; Di Emidio G. ; Van Impe P.O. (2004): Laboratory procedures to evaluate the efficiency of the permeable reactive barriers, Simposio sobre Geotecnia Ambiental Y Mejora Del Terreno, Valencia, 6–8 October, 2004 / Ed. Sociedad Espanola de Mecanica des Suelo. - Madrid : Heliotipia Artistica, 2004 , pp. 61–66.
- Van Impe W.F., Verastegui Flores R.D., Van Impe P.O., Mengé P., Van den Broeck M. (2004) : Deep mixing research results in under water conditions. Proc. 16<sup>th</sup> International Conference on Soil Mechanics and Geotechnical Engineering, Osaka, September 12–16, 2005 / Rotterdam Netherland : Millpress, 2005 - ISBN 90-5966-027-7, pp. 1149-1936.
- 2005 Mazzieri F., Van Impe P.O., Di Emidio G. (2005): Chemico-osmotic behaviour of modified “Multiswellable” bentonite. Proc. 16<sup>th</sup> International Conference on Soil Mechanics and Geotechnical Engineering, Osaka, September 12–16, 2005 / Rotterdam Millpress, 2005 - ISBN 90-5966-027-7, pp. 2297–2300.
- Van Impe P.O., Van Impe W.F., Mazzieri F. (2005): Impact of osmotic efficiency on contaminant transport parameters. Proc. 16<sup>th</sup> International Conference on Soil Mechanics and Geotechnical Engineering, Osaka, September 12–16, 2005 / Rotterdam Millpress, 2005 - ISBN 90-5966-027-7, pp. 2343–2346.
- 2006 Di Emidio G., Van Impe P.O. (2006): Geoenvironmental characterization of dredged sediments as alternative materials for covers, Proc. 5<sup>th</sup> International Conference on Environmental Geotechnics, Cardiff, Wales, UK, June 26–30, 2006 / Ed. H.R. Thomas - Thomas Telford Publishing London, ISBN 0-7227-3472-5, pp. 438–444.
- Di Emidio G., Van Impe P.O. (2006): Alternative landfill covers with unconventional materials, Proceedings of the 17<sup>th</sup> European Young Geotechnical Engineers’ Conference, Zabreb, Croatia, 20–22 July 2006./ Ed. Szavits-Nossan, V. - Zabreb : Croatian Geotechnical Society, 2006 - 539 p. - ISBN 953-95486-0-8 p. 455–460.
- 2007 Di Emidio G., Van Impe W.F., Van Impe P.O., Mazzieri F. (2007): Hydraulic Conductivity, Free Swell and Swelling

- Pressure of a Dense PreHydrated GCL (DPH GCL), Proceedings of the 1<sup>st</sup> Middle European Conference on Landfill Technology, Budapest, Hungary, November 19–20, 2007.
- 2008 Di Emidio G., Mazziere F., Van Impe P.O., Van Impe W.F. (2008): Hydraulic Conductivity Performance of a Dense Prehydrated GCL Overlap, Proceedings of the 1<sup>st</sup> Pan American Geosynthetics Conference & Exhibition, Cancun, Mexico, March 2–5, 2008.
- Van Impe W.F., Van Impe P.O. (2008), editors : Proceedings of the 5<sup>th</sup> International Conference on Foundations on Bored and Auger Piles, BAP V, Ghent, Belgium, / CRC Press, ISBN 978-0-415-47556-3.
- 2009 Van Impe P.O., Barbetti L., Van Impe W.F. (2009): Determination of Consolidation Parameters of Industrial Wastes Sludges, Proceedings of the 17<sup>th</sup> International Conference on Soil Mechanics and Geotechnical Engineering, Alexandria, Egypt, October 5–9, 2009, to be published.
- 2010 Van Impe P.O., Barbetti L., Van Impe W.F. (2009): Impact of flocculating agents on stress-strain behaviour of natural mineral sludges, Proceedings of the 6<sup>th</sup> International Congress on Environmental Geotechnics, New Delhi, India, November 8–12, 2010, to be published.

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#### CONFERENCES WITH DIRECT INPUT

- 9/1997 11<sup>th</sup> Young Geotechnical Engineers' Conference, Madrid, Spain, September 24–27, 1997 : paper, panel presentation.
- 10/1998 3<sup>rd</sup> International Conference on Foundations on Bored and Auger Piles, BAP III, Gent, Belgium, October 18–21, 1998 : member of organizing committee, paper.
- 5/1999 12<sup>th</sup> European Conference on Soil Mechanics and Geotechnical Engineering, "Geotechnical Engineering and transportation infrastructure", Amsterdam, The Netherlands, June 7–10, 1999 : paper.
- 11/1999 17<sup>th</sup> Conferenze di Geotecnica di Torino, "Controllo e gestione degli inquinanti del sottosuolo", Torino, Italy, November 23–25, 1999 : paper.
- 12/1999 Workshop on Design Practice, Modelling and Laboratory Testing Related to Landfill Clay Liners, Gent, Belgium, December 20–21, 1999 : member of the organizing committee.

- 11/2000 International Conference on Geotechnical and Geological Engineering GeoEng 2000, Melbourne, Australia, November 19–24, 2000 : paper.
- 8/2001 15<sup>th</sup> International Conference on Soil Mechanics and Geotechnical Engineering, Istanbul, Turkey, August 27–31, 2001 : paper.
- 8/2002 4<sup>th</sup> International Congress on Environmental Geotechnics, Rio de Janeiro, Brazil, August 11–15, 2002 : paper.
- 6/2003 4<sup>th</sup> International Conference on Foundations on Bored and Auger Piles, BAP IV, Gent, Belgium, June 2–4, 2003 : member of the organizing committee.
- 8/2003 13<sup>th</sup> European Conference on Soil Mechanics and Geotechnical Engineering, Prague, Czech Republic, August 25–28, 2003 : paper, panel presentation.
- 8/2003 Workshop TC5 on Use of GCLs in waste containment, Prague, Czech Republic, August 29, 2003 : presentation.
- 9/2005 16<sup>th</sup> International Conference on Soil Mechanics and Geotechnical Engineering, Osaka, September 12–16, 2005 : paper, panel presentation.
- 12/2005 Workshop on Soil-structure interaction modelling, Gent, Belgium, December 1–2, 2005 : member of the organizing committee.
- 5/2006 5<sup>th</sup> International Conference on Environmental Geotechnics, Cardiff, Wales, UK, June 26–30, 2006 : paper, panel presentation, technical session chairman, member of the scientific review committee.
- 9/2006 Workshop on Geotechnical parameters from laboratory and in-situ testing, Ghent, Belgium, September 12–13, 2006 : member of the organizing committee.
- 6/2008 International Geotechnical Conference “Development of Urban Areas and Geotechnical Engineering”, Saint-Petersburg, Russia, June 16–19, 2008 : keynote-lecture (session 2 “Soil characterization for geotechnical and geoenvironmental purposes in urban areas as a basis for geotechnical design”), chairman session 2, chairman session 3.
- 9/2008 5<sup>th</sup> International Conference on Foundations on Bored and Auger Piles, BAP V, Ghent, Belgium, September 8–10, 2008 : co-organisor.

- 10/2009            17<sup>th</sup> International Conference on Soil Mechanics and Geotechnical Engineering, Alexandria, Egypt, October 5–9, 2009 : paper, panel presentation.
- 11/2009            6<sup>th</sup> International Congress on Environmental Geotechnics, New Delhi, India, November 8–12, 2010 : paper, member of the scientific review committee.