

# CURRICULUM VITAE

## VARVARA ZANIA, PHD

*Address: Technical University of Denmark, Department of Environmental and Resource Engineering,  
Building 119.*

*Phone: +45 45255092*

*Email: [vaza@byq.dtu.dk](mailto:vaza@byq.dtu.dk)*

*ORCID 0000-0001-8270-1246*

---

### HIGHER EDUCATION

---

**2009** PhD: 'Seismic distress of Municipal Solid Waste Landfills: Failure Mechanisms and Mitigation measures'. Technical University of Crete, Division of Mechanics, Supervisor Associate Professor: Y. Tsompanakis.

**2004** Postgraduate Diploma (M.Sc.): 'Design and construction of underground structures', National Technical University of Athens.

**2003** Civil Engineering Diploma, National Technical University of Athens.

### ACADEMIC EXPERIENCE

---

**2016-** Associate Professor, Technical University of Denmark (DTU).

**2012- 2016** Assistant Professor, Technical University of Denmark (DTU).

**2010 - 2012** Post Doctoral Researcher, Technical University of Denmark (DTU).

**2010 - 2012** Teaching Assistant, (Lecturing and tutoring) 11374 Seismic and Wind Engineering (10 ECTS), 11465 Advanced Geotechnical Engineering (5 ECTS)

### SCIENTIFIC FOCUS AREAS

---

Soil dynamics, Soil – structure – interaction, numerical modelling, physical modelling, laboratory testing.

### PUBLICATION RECORD

---

Web of Science publications: 24 Citations: 185 h-index: 8 (excluding self citations)

Scopus publications: 40 Citations: 210 h-index: 8 (excluding self citations)

Google Scholar publications: 79 Citations: 329 h-index: 9

ResearchGate RG Score 21.2

### SUPERVISION OF PHDS

---

**2021-** Digital Twins for Sustainable underground constructions. Efthymios Panagiotis. Main supervisor.

**2018-2022** Efficient performance of large infrastructure: a geomechanical approach towards sustainable design. Emil Mejlhede Kinslev. Main supervisor.

**2017-2021** Multiscale assessment of Swelling and Compressibility of Fine Grained Geomaterials. Giorgia Di Remigio. Main supervisor.

**2016-2019** Railway substructure system based on asphalt. Tulika Bose. Main supervisor

**2014-2017** Numerical modelling of Offshore Foundations for Jacket Structures. Chiara Latini. Main supervisor

2013 -2017 Deterioration models for cement bound materials in structural design and evaluation of heavy duty pavements. Asmus Skar. Co-supervisor

## **EXTERNALLY FUNDED RESEARCH PROJECTS**

2022 -2023 Kaptajn Aage Nielsens Familiefond, Sustainable infrastructure and foundations supported by advanced characterization of soil. 170,000 DKK

*Role: Academic main applicant and project manager*

2022-2023 COWI Fonden, Characterisation of national geotechnical test sites for an open database in Denmark. 474,692 DKK. Principal Investigator: Kenny Kataoka Sørensen ( Aarhus University – Department of Civil and Architectural Engineering)

*Role: Project partner in WP1*

2018-2021 Innovationsfonden, Industrial PhD. Efficient performance of large infrastructure: a geomechanical approach towards sustainable design. 2M DKK

*Role: Academic main applicant and project manager*

2016-2019 Innovationsfonden, Grand Solutions. ROADS2RAILS: Innovative new concept for asphalt based railway construction. 9 M. DKK. Principal Investigator: Ole Grann Andersson (Teknologisk Institut)

*Role: Work package 1 and 3 leader*

2014-2017 Det Strategiske Forskningsråd, Programkomiteen for Bæredygtig Energi og Miljø. ABYSS (Advancing BeYond Shallow waterS) - Optimal design of offshore wind turbine support structures. 21.6 M. DKK. Principal Investigator: Prof. Mathias Stolpe (DTU Wind)

*Role: Participant, coordinator of subtasks in work package 1*

## **BOARDS AND ACADEMIC SERVICES**

2019 – 2022: Member of the Editorial Advisory Board of ICE's International Journal of Physical Modelling in Geotechnics, IJPMG.

2019: Review panel member for a European research foundation

2018: Opponent of PhD Thesis. Installation of Monopiles for Offshore Wind Turbine Foundations. I. Anusic. Norwegian University of Science and Technology, Trondheim, December 2018.

2017 – 2018: Member of the International Advisory Board of the International Conference on Physical Modelling in Geotechnics ICPMG 2018, London, June 2018.

2018 – : Member of the Editorial Review Board for journal Frontiers in Built Environment: Computational Methods in Structural Engineering.

2015 – 2016 : Member of the International Advisory Committee of the 3<sup>rd</sup> European Conference on Physical Modelling in Geotechnics EUROFUGE 2016, Nantes, May 2016.

2015 – : Nominated Member: ISSMGE Technical Committee on Physical Modelling in Geotechnics (TC104).

2015: Opponent of PhD Thesis. Rock Physics of Reservoir Rocks with Varying Pore Water Saturation and Pore Water Salinity. K. Katika. Technical University of Denmark, Copenhagen, December 2015.

2010 – : Reviewer in the following scientific journals: Advances in Environmental Geotechnics, Geotechnique, Geotechnique letters, Journal of Earthquake Engineering, Soil Dynamics and Earthquake Engineering, Wind Energy, Soils and Foundations, and several conference proceedings.

## **INVITED LECTURES**

2015 Numerical modelling of dynamic response of offshore foundations, Simulia Regular Users Meeting, Copenhagen, Denmark.

- 2014 Dynamic Soil – Pile – Structure Interaction, University of Newcastle, Newcastle, Australia.
- 2014 Soil – Pile – Structure Interaction, Norwegian Geotechnical Institute, Oslo, Norway.
- 2011 Numerical Modelling and Analysis of Soil – Structure Interaction Problems, Simulia Regular Users Meeting, Copenhagen, Denmark.

## **TEACHING EXPERIENCE**

---

- 2011 – today 11465 Advanced Geotechnical Engineering (ECTS 5, ~100 students, course responsible V.Zania since 2014).
- 2012 – today 11080 Advanced Building design (ECTS 10, ~100 students, course responsible J. Karlshoj).
- 2015 – 2016 11464 Advanced Soil Mechanics (ECTS 5, ~60 students, course responsible V.Zania).
- 2010 – 2019 11374 Seismic and Wind Engineering (ECTS 10, ~50 students, course responsables C. Georgakis and H. Koss)
- 2011 – today Organization and teaching of 46 special courses.
- 2011 – today 55 Master thesis supervision, 11 Bachelor/Diplom thesis supervision,

## **PERSONAL DEVELOPMENT**

---

- 2018 Project Management for researchers at DTU, Technical University of Denmark
- 2017 The PhD Supervision Process: Methods and Tools, Technical University of Denmark
- 2015 Supervision of larger projects, Technical University of Denmark
- 2014 PhD Supervision Course, Technical University of Denmark
- 2014 Teaching and Learning Course, 'Teaching Development Project' Module 4, Technical University of Denmark.
- 2013 Teaching and Learning Course, 'Teaching and Teacher Development' Module 3, Technical University of Denmark.
- 2013 Teaching and Learning Course, 'Teaching Methods and Course Planning' Module 2, Technical University of Denmark.
- 2010 Teaching and Learning Course, 'Teaching and Learning' Module 1, Technical University of Denmark.

## **PROFESSIONAL EXPERIENCE**

---

- 2013 Seminar on Geotechnical Earthquake Engineering, DKBI, tutor.
- 2012 Evaluation of the Seismic Response of Railway Bridge BR39 Katra – Quazigund Rail Link, project engineer.
- 2008 Slope stability analysis and design of stabilization measures, as free-lance engineer.
- 2006 – 2007 Translation of European standards. Occupied by: Hellenic Organization of Standardization.
- 2005 Junior engineer, participation in static design of gas plants. Occupied by: Consolidated Contractors international Company (CCC).
- 2002 Trainee engineer. Occupied by: Hellenic Ministry of Environmental Engineering, Physical Planning and Public Works.

## **ISI JOURNAL PUBLICATIONS**

---

- A.1. Lehane, B. M., **Zania, V.**, Chow, S. H., & Jensen, M. (2022). Interpretation of centrifuge CPT data in normally consolidated silica and carbonate sands. *Géotechnique*, 1–35. <https://doi.org/10.1680/jgeot.21.00177>

- A.2. Kinslev, E. M., Hededal, O., Rocchi, I., & **Zania, V.** (Accepted/In press). Mode based characterisation of swell deformations in a high plasticity Paleogene clay. *Canadian Geotechnical Journal*. <https://doi.org/10.1139/cgj-2021-0243>
- A.3. Di Remigio, G., Rocchi, I., & **Zania, V.** (2021). New method for a SEM-based quantitative microstructural clay analysis - MiCA. *Applied Clay Science*, 214, [106248]. <https://doi.org/10.1016/j.clay.2021.106248>
- A.4. Di Remigio, G., Rocchi, I., & **Zania, V.** (2021). Scanning Electron Microscopy and clay geomaterials: From sample preparation to fabric orientation quantification. *Applied Clay Science*, 214, [106249]. <https://doi.org/10.1016/j.clay.2021.106249>
- A.5. Bose, T., Levenberg, E., & **Zania, V.** (2021). Numerical modeling of a ballastless track mockup based on asphalt. *Construction and Building Materials*, 274, [121852]. <https://doi.org/10.1016/j.conbuildmat.2020.121852>
- A.6. Bose, T., **Zania, V.**, & Levenberg, E. (2020). Experimental Investigation of a Ballastless Asphalt Track Mockup under Vertical Loads. *Construction and Building Materials*, 261, [119711]. <https://doi.org/10.1016/j.conbuildmat.2020.119711>
- A.7. Latini C., & **Zania V.** (2019) Vertical dynamic impedance of suction caissons, *Soils and Foundations*, <https://doi.org/10.1016/j.sandf.2018.09.013>.
- A.8. Truong, P., Lehane, B. M., **Zania, V.**, & Klinkvort, R. T. (2019). Empirical approach based on centrifuge testing for cyclic deformations of laterally loaded piles in sand. *Geotechnique*, 69(2), 133-145 DOI: 10.1680/jgeot.17.p.203
- A.9. Bose, T., Levenberg, E., & **Zania, V.** (2018). Analyzing Track Responses to Train Braking. *Proceedings of the Institution of Mechanical Engineers, Part F: Journal of Rail and Rapid Transit*, 232(7), 1984-1993.
- A.10. Sandal, K., Latini, C., **Zania, V.**, & Stolpe, M. (2018). Integrated optimal design of jackets and foundations. *Marine Structures*, 61, 398-418.
- A.11. Jelinek T., **Zania V.**, & Giuliani L., (2017). Post-earthquake fire resistance of steel buildings, *Journal of Constructional Steel Research*, 138C, 774-782, DOI: 10.1016/j.jcsr.2017.08.021
- A.12. Latini C., & **Zania V.**,(2017). Dynamic lateral response of suction caissons, *Soil dynamics and Earthquake Engineering*, 100, 59-71. DOI: 10.1016/j.soildyn.2017.05.020.
- A.13. Damgaard, M., **Zania, V.**, Andersen, L. V., & Ibsen, L. B. (2014). Effects of soil–structure interaction on real time dynamic response of offshore wind turbines on monopiles. *Engineering Structures*, 75, 388-401.
- A.14. **Zania V.**,(2014). Natural vibration frequency and damping of slender structures founded on monopiles, *Soil dynamics and Earthquake Engineering*, 10.1016/j.soildyn.2014.01.007
- A.15. **Zania V.**, Tsompanakis Y., Psarropoulos P.N., (2010). Seismic displacements of landfills and deformation of geosynthetics due to base sliding, *Geotextiles and Geomembranes*, 28, pp. 491 - 502.
- A.16. **Zania V.**, Tsompanakis Y., Psarropoulos P.N., (2010). Base sliding and dynamic response of landfills, *Advances in engineering software*, 41, pp. 349 - 358.
- A.17. **Zania V.**, Tsompanakis Y., Psarropoulos P.N., (2008). Seismic distress and slope instability of municipal solid waste landfills, *Journal of Earthquake Engineering*, 12(2), pp. 312-340.
- A.18. **Zania V.**, Psarropoulos P.N., Karabatsos Y., and Tsompanakis Y., (2008). Inertial distress of waste landfills, *Journal of Computers & Structures*, 86(7-8), pp. 642-651.