

Fahim Al-Neshawy
Staff Scientist
Department of Civil Engineering
Mineral Based Materials and Mechanics
Type of address: Postal address.
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Qualifications

Doctoral degree, Engineering and Technology, Aalto University
Award Date: 20 Jun 2013

Licentiate degree, Engineering and Technology, Helsinki University of Technology
Award Date: 17 Dec 2007

Master's degree, Engineering and Technology, Helsinki University of Technology
Award Date: 16 Dec 1996

Employment

Staff Scientist

Staff Scientist
Department of Civil Engineering
Aalto University
1 Jun 2016 → present

Staff Scientist

Staff Scientist
Mineral Based Materials and Mechanics
Aalto University
1 Jan 2019 → present

Research output

Mechanical Properties and Microstructural Analysis of Concrete Designed for Low and Intermediate Level Nuclear Waste Repositories

Al-Neshawy, F. & Ragaa, A. B., 1 Dec 2025, In: Nordic Concrete Research. 73, 2, p. 121-138 18 p.

In-situ Compressive Strength Assessment of Reinforced Concrete Structures

Al-Neshawy, F., Wallenius, A. & Punkki, J., 1 Jun 2025, In: Nordic Concrete Research. 72, 1, p. 29-46 18 p.

Determining the Location of Steel Reinforcement in Thick Concrete Walls by Non-Destructive Inspection

Al-Neshawy, F. & Puttonen, J., 1 Dec 2023, In: Nordic Concrete Research. 69, 2, p. 55-71 17 p.

Combined NDT methods to determine the variations in compressive strength throughout concrete structures

Al-Neshawy, F., Ferreira, M. & Puttonen, J., 2023, *Proceedings of the International Conference on Non-destructive Evaluation of Concrete in Nuclear Applications - NDE NucCon 2023*. Aalto-yliopisto, p. 368-376 9 p. (Aalto University publication series SCIENCE + TECHNOLOGY; vol. 2023, no. 3).

Comprehensive state-of-the-art report for long-term behaviour of concrete structures in repository environment

Al-Neshawy, F., Ba Ragaa, A. & Punkki, J., 2023, Aalto-yliopisto. 85 p. (Aalto University publication series SCIENCE + TECHNOLOGY; vol. 2023, no. 4)

Laboratory study on corrosion of steel rebars in anoxic environments - Deliverable 2.2: ConLoT project – Long-term testing of the durability of concrete at final disposal conditions

Al-Neshawy, F., Ba Ragaa, A. & Punkki, J., 2023, Aalto-yliopisto. 68 p. (Aalto University publication series SCIENCE + TECHNOLOGY; vol. 2023, no. 5)

Proceedings of the International Conference on Non-destructive Evaluation of Concrete in Nuclear Applications - NDE NucCon 2023

Al-Neshawy, F. (Editor), Ferreira, M. (Editor), Bohner, E. (Editor), Kekäläinen, P. (Editor), Oey, T. (Editor), Lay, V. (Editor) & Niederleithinger, E. (Editor), 2023, Aalto-yliopisto. 393 p. (Aalto University publication series SCIENCE + TECHNOLOGY; vol. 2023, no. 3)

Using non-destructive testing methods for locating the steel reinforcement in reinforced concrete structures

Al-Neshawy, F., Ba Ragaa, A. & Puttonen, J., 2023, *Proceedings of the International Conference on Non-destructive Evaluation of Concrete in Nuclear Applications - NDE NucCon 2023*. Aalto-yliopisto, p. 335-344 10 p. (Aalto University publication series SCIENCE + TECHNOLOGY; vol. 2023, no. 3).

Stability of Air Content in Fresh Concretes with PCE-Based Superplasticizers

Al-Neshawy, F., Ojala, T. & Punkki, J., Jul 2019, In: *Nordic Concrete Research*. 60, 1, p. 145-158 14 p.

Mock-up wall for NDT&E of NPP thick-walled reinforced concrete structures

Al-Neshawy, F., Ojala, T., Ferreira, M. & Puttonen, J., 1 Aug 2018, *12th European Conference on Non-Destructive Testing (ECNDT 2018)*. NDT.net, 10 p. (The e-Journal of Nondestructive Testing; vol. 23, no. 8).

Increase of Air Content of Concrete After Mixing

Al-Neshawy, F. & Punkki, J., 2018. 12 p.

Influence of PCE-Superplasticizers on the Stability of Concrete Air Content

Al-Neshawy, F., Ojala, T. & Punkki, J., 2018, *Superplasticizers and Other Chemical Admixtures in Concrete: Proceedings Twelfth International Conference*. Liu, J., Wang, Z., Holland, T. C., Huang, J. & Plank, J. (eds.). American Concrete Institute, p. 405-419

"NDT MATRIX" - A Tool for Selecting Non-Destructive Testing Methods for NPP Concrete Structures

Al-Neshawy, F., Ferreira, M., Bohner, E. & Puttonen, J., 20 Aug 2017, *24th International Conference on Structural Mechanics in Reactor Technology - Proceedings*. International Association for Structural Mechanics in Reactor Technology (IASMiRT), 10 p.

Securing the stable protective pore system of concrete - Report for "Robust Air"

Al-Neshawy, F. & Punkki, J., 2017, Aalto University. 105 p. (Aalto University publication series SCIENCE + TECHNOLOGY; vol. 2017, no. 10)

Stability of air-entrainment with PCE-superplasticizers

Al-Neshawy, F. & Punkki, J., 2017, *Proceedings of the XXIII Nordic Concrete Research Symposium*. Tange Hasholt, M. (ed.). Norsk Betongforening, p. 149-152 4 p. (Nordic concrete research).

Chemical changes of cement pastes due to the effect of combined carbonation and chloride penetration

Al-Neshawy, F., May 2016, In: *Nordic Concrete Research*. 54, 1/2016, p. 21-30 2.

Selection Matrix for Non-Destructive Testing of NPP Concrete Structures

Al-Neshawy, F., Sistonen, E., Puttonen, J., Ferreira, M. & Bohner, E., 2016, *19th World Conference on Non-Destructive Testing 2016: WCNDT 2016*. NDT.net, 9 p. (NDT.net).

AALTO UNIVERSITY SCHOOL OF ENGINEERING, Department of Civil and Structural Engineering, FINLAND : BASIC DATA OF THE ORGANIZATION

Al-Neshawy, F., Sistonen, E., Kari, O.-P., Eik, M. & Puttonen, J., 2015, *1st Workshop of TU1404 Ljubljana, Slovenia, April 16-17, 2015*. Schlicke, D., Trtnik, G., Bosiljkov, B. V., Azenha, M. & Staquet, S. (eds.). Ljubljana: University of Ljubljana, p. 28

Research Projects : Recent Research Projects related to the COST Action TU1404

Al-Neshawy, F., Sistonen, E., Kari, O.-P., Eik, M. & Puttonen, J., 2015, *TU1401 COST action, 1st WORKSHOP with Focus on experimental testing of cement based materials held in Ljubljana, Slovenia, April, 16-17, 2015*. Schlicke, D.,

Azenha, M. & Staquet, S. (eds.). Ljubljana: University of Ljubljana, p. 34

von Konow Academy Database (TvK-DB). A database based on the accurate field research and laboratory studies of mortars initiated by PhD Thorborg von Konow
Al-Neshawy, F., 2015

Ageing Mechanisms of Building Structures and their Management

Al-Neshawy, F. & Sistonen, E., 2014, *1st International Conference on Ageing of Materials & Structures, AMS'14, Delft University of Technology, Delft, The Netherlands, 26-28 May 2014*, van Breugel, K. & Koenders, E. A. B. (eds.). Delft, The Netherlands: Delft University of Technology, p. 313-320

von Konow Academy Database (TvK-DB). A database based on the accurate field research and laboratory studies of mortars initiated by PhD Thorborg von Konow
Al-Neshawy, F. & Sistonen, E., 2014

Computerised prediction of the deterioration of concrete building facades caused by moisture and changes in temperature
Al-Neshawy, F., 2013, Aalto University. 226 p.

Developing a Computerized Aging Management System for Concrete Structures in Finnish Nuclear Power Plants

Al-Neshawy, F., Piironen, J., Sistonen, E., Vesikari, E., Tuomisto, M., Hradil, P. & Ferreira, M., 2013, *International Workshop NUCPERF 2012: Long-Term Performance of Cementitious Barriers and Reinforced Concrete in Nuclear Power Plant and Radioactive Waste Storage and Disposal (RILEM Event TC 226-CNM and EFC Event 351)*. L'Hostis, V. & Gens, R. (eds.). EDP Sciences, p. 1-8 03001. (EPJ Web of Conferences ; vol. 56).

Development of database for the in-service inspection of the concrete structures of the Finnish Nuclear Power Plants

Al-Neshawy, F., Sistonen, E., Vesikari, E. & Ferreira, M., 2013, *IABSE Workshop on Safety, Failures and Robustness of Large Structures, Tuusula, Finland, February 14-15, 2013*. - International Association for Bridge, I. & Engineering, S. (eds.). Finland: Suomen rakennusinsinöörien liitto RIL, p. 226-233

Analysis of the moisture performance of wall structures at the zero-energy Luukku-house

Al-Neshawy, F., Lylykangas, K., Piironen, J., Peittola, M. & Puttonen, J., 2012, *IABSE CONFERENCE SHARM EL SHEIKH, EGYPT 7-9th May 2012*. Egypt: International Association for Bridge and Structural Engineering

Effect of different Repair Techniques on the Hygrothermal Performance of Concrete Façades

Al-Neshawy, F., Piironen, J., Sistonen, E. & Puttonen, J., 2012, *V International PhD Student Workshop on Durability of Reinforced Concrete From Composition to Service Life Design, Espoo, Finland, February 9-10, 2012*. Ferreira, R. M., Gulikers, J. & Andrade, C. (eds.). Espoo: VTT Technical Research Centre of Finland, p. 107-121

Computerized assessment of the moisture and thermal originated deterioration of concrete facades

Al-Neshawy, F., Piironen, J. & Puttonen, J., 2011, *Concrete Solutions*. Grantham, M., Mechtcherine, V. & Schneck, U. (eds.). CRC Press, p. 343-347 5 p.

Effect of NaCl and different CO2 concentrations on the mineral compositions of a hardened cement paste

Al-Neshawy, F., Sistonen, E. & Piironen, J., 2011, *21st Nordic Concrete Research Symposium, Hämeenlinna, 30.5.-1.6.2011*. Nordic Concrete Federation, p. 243-246

Network system for assessing the moisture and thermal behaviour of repaired concrete building facades

Al-Neshawy, F., Piironen, J., Peltola, S., Sistonen, E. & Puttonen, J., 2011, In: *Journal of Information Technology in Construction*. 16, paper 34, p. 601-616

Measuring the bowing of marble panels in building facades using terrestrial laser scanning technology

Al-Neshawy, F., Piironen, J., Peltola, S., Erving, A., Heiska, N., Nuikka, M. & Puttonen, J., 2010, In: *Journal of Information Technology in Construction*. 15, p. 64-74

The use of ICT for monitoring the hygrothermal behavior of building structures

Al-Neshawy, F., Laurila, T., Vuorinen, V. & Mäkitalo, M., 2010, *CIB W78 2010, Kairo, Egypti, 16.-19.11.2010*. Professor Peter Barret, P. D. A. & Dr Richard Haig, D. K. K. (eds.). International Council for Research and Innovation in Building and Construction (CIB), p. '.

Assessment of the moisture and thermal performance of repaired building facades

Al-Neshawy, F., Sistonen, E., Piironen, J., Peltola, S. & Puttonen, J., 2009, *International ECCE Conference Current State and Challenges for Sustainable Development of Infrastructure Euroinfra 2009 Helsinki, Finland, October 15-16, 2009*. Professor, D. T. A. S. (ed.). Helsinki, Finland: European Council of Civil Engineers (ECCE) , p. 47-48

Monitoring Relative Humidity and Temperature for Life-Time Assessment of Sandwich-Type Concrete Structures

Al-Neshawy, F., Sistonen, E., Piironen, J., Peltola, S. & Puttonen, J., 2009, *20th International Conference on Structural Mechanics in Reactor Technology (SMiRT 20), Espoo, Finland, August 9-14, 2009*. VTT Technical Research Centre of Finland, p. 9

The Potential of Terrestrial Laser Scanning for Detecting the Deterioration of Building Facades

Al-Neshawy, F., Peltola, S., Piironen, J., Erving, A., Heiska, N., Salo, P., Nuikka, M., Kukko, A. & Puttonen, J., 2009, *Concrete Solutions: the International Conference on Concrete Solutions, Padua, Italy, 22-25 June 2009*. Grantham, M., Majorana, C. & Salomoni, V. (eds.). London, U.K.: Frank Cass Publishers, p. 395-399

The potential of the terrestrial laser scanning for geometrical building facades inspection

Al-Neshawy, F., Piironen, J., Peltola, S. & Puttonen, J., 2009, In: *Rakenteiden mekaniikka*. 42, 4, p. 235-245

Detecting the Deterioration of Building Facades Using Terrestrial Laser Scanning Technique

Al-Neshawy, F., Pöntinen, P., Erving, A., Salo, P., Heiska, N., Kukko, A., Kaartinen, H. & Puttonen, J., 2008, *The IABSE Conference 'Information and Communication Technology (ICT) for Bridges, Buildings and Construction Practice' in Helsinki, Finland, June 4 6, 2008*. IABSE Finnish Group

KT-tietokanta (the database software) Tietokantaohjelma, johon kerätään kuntotutkimusten tiedot.

Al-Neshawy, F., Piironen, J., Sistonen, E. & Puttonen, J., 2008

Desing of database based on condition survey of concrete facades

Al-Neshawy, F., Sistonen, E., Piironen, J. & Huovinen, S., 2007, *CONSEC'07, Concrete under severe conditions: Environment and loading, Tours, France, June 4-6, 2007*. Toutlemonde et al, E. :. (ed.). p. 1799

Korjatun julkisivurakenteen kosteusteknisen toiminnan seuranta

Al-Neshawy, F., Sistonen, E. & Piironen, J., 2007, *Tampere University of Technology, Institute of Structural Engineering, Rakennusfysiikka 2007. Uusimmat tutkimustulokset ja hyvät käytännön ratkaisut. Seminaari 18 - 19.10.2007, Tampere, Finland, 2007*. Vinha, J. & Korpi, M. (eds.). Tampereen teknillinen yliopisto, p. 143

New Method for Monitoring the Hygrothermal Condition of Repaired Facades

Al-Neshawy, F., Sistonen, E., Piironen, J. & Huovinen, S., 2007, *CONSEC'07, Concrete under severe conditions: Environment and loading, Tours, France, June 4-6, 2007*. Toutlemonde et al., E. :. (ed.). p. 1807-1812

Development of Database for Concrete Facades' Condition Survey

Al-Neshawy, F., Sistonen, E., Piironen, J. & Huovinen, S., 2006, *European Symposium on Service Life and Serviceability of Concrete Structures, ESCS-2006, Proceedings, Helsinki, Finland, June 12-14, 2006*. p. 300

Intergrated management of Condition Survey Database for Concrete Facades

Al-Neshawy, F. & Piironen, J., 2006, p. 1, (2nd International RILEM Symposium on Advances in Concrete through Science and Engineering, Quebec City, Canada, September 11 - 13.2006).

Monitoring the Hygrothermal Performance of Repaired Concrete Facades

Al-Neshawy, F., Sistonen, E., Piironen, J. & Huovinen, S., 2006, *European Symposium on Service Life and Serviceability of Concrete Structures, ESCS-2006, Proceedings, Helsinki, Finland, June 12 - 14. 2006*.

The Development of a Condition Survey Database Management System and Hygrothermal Monitoring Method for Concrete Facades

Al-Neshawy, F., Sistonen, E., Piironen, J. & Huovinen, S., 2006, *Concrete Solutions 2006, Proceedings of the Second International Conference on Concrete Repair, St-Malo, Brittany, France, June 27-29, 2006*. p. 561

RH and temperature Measurement (the communication software) Tietokoneohjelma, joka mittaa, kerää ja tallentaa kosteusmonitoriointin tiedot

Al-Neshawy, F., 2005

Sementtimäärällä ja vesisementtisuhteella merkittävä vaikutus betonin kuivumisnopeuteen

Al-Neshawy, F., 1997, In: *Rnet : rakennus- ja yhdyskuntatekniikan tiedotuslehti*. 1, p. 51

Activities

Ernst Niederleithinger

Al-Neshawy, F. (Host)

24 Oct 2018 → 26 Oct 2018

NDT&E Advanced Training Workshop

Al-Neshawy, F. (Member)

27 Jun 2018 → 3 Jul 2018

Stability of air-entrainment with PCE-superplasticizers

Al-Neshawy, F. (Contributor) & Punkki, J. (Speaker)

25 Aug 2017

Mapei AS

Al-Neshawy, F. (Visiting researcher) & Punkki, J. (Visiting researcher)

2017

IABSE Workshop, Helsinki, Finland, February 11-12, 2015, Finland

Al-Neshawy, F. (Contributor)

2015

SAFIR2014 FINAL SEMINAR, Hanasaari, Helsinki, Finland, 19.-20.3.2015, Finland

Al-Neshawy, F. (Contributor)

2015

SMiRT-23 2015, 23rd International Conference on Structural Mechanics in Reactor Technology, SMiRT-23, Manchester, United Kingdom - August 10-14, 2015, United Kingdom

Al-Neshawy, F. (Contributor)

2015

David Lange

Al-Neshawy, F. (Host)

1 Jan 2014

1st International Conference on Ageing of Materials & Structures, AMS'14, Delft, Netherlands, 26 – 28 May 2014

Al-Neshawy, F. (Contributor)

2014

University (External organisation)

Al-Neshawy, F. (Chair)

2014

Vagelis Papadakis

Al-Neshawy, F. (Host)

1 Jan 2013

IABSE Workshop, Helsinki, Finland, February 14-15, 2013, Finland

Al-Neshawy, F. (Contributor)

2013

OECD-NEA, CSNI Working Group on the Integrity and Ageing of Components and Structures Workshop, Prague, Czech Republic 17-19.9.2013, Czech Republic

Al-Neshawy, F. (Contributor)

2013

SAFIR2014 - Interim Seminar, Hanasaari, Swedish-Finnish Cultural Centre, 21.-22.3.2013, Finland

Al-Neshawy, F. (Contributor)

2013

University (External organisation)

Al-Neshawy, F. (Chair)

2013

Vagelis Papadakis

Al-Neshawy, F. (Host)

1 Jan 2012

IABSE Conference on Global Thinking in Structural Engineering: Recent Achievements, Sharm El Sheikh, Egypt, 7-9 May 2012, Egypt

Al-Neshawy, F. (Contributor)

2012

NUCPERF 2012 RILEM Event TC 226-CNM EFC Event 351, Cadarache, France 12-15 November 2012, France

Al-Neshawy, F. (Contributor)

2012

Concrete Solutions 2011, 4th International Conference on Concrete Repair 26-28. Sept. 2011, Dresden, Germany, Germany

Al-Neshawy, F. (Contributor)

2011

CIB W78 2010, 27th International Conference Applications of IT in the AEC Industry. Cairo, Egypt 16-18 November 2010., Egypt

Al-Neshawy, F. (Contributor)

2010

20th International Conference on Structural Mechanics in Reactor Technology, Dipoli Congress Center, Espoo, Finland, August 9-14, 2009

Al-Neshawy, F. (Contributor)

2009

3rd International Conference on Concrete Repair (Concrete Solutions 2009), Venice/Padova, Italy 29 June-2 July 2009, Italy

Al-Neshawy, F. (Contributor)

2009

DuraInt-Project Workshop: Effect of interacted deterioration parameters on service life of concrete structures in cold environments” March 2-4, 2009, VTT and TKK, Espoo, Finland, Finland
Al-Neshawy, F. (Contributor)
2009

Euroinfra 2009, International ECCE Conference, October 15-16, 2009, Helsinki, Finland
Al-Neshawy, F. (Contributor)
2009

Foreign Organisation
Al-Neshawy, F. (Visiting researcher)
2009

Foreign Organisation
Al-Neshawy, F. (Visiting researcher)
2007

Foreign Organisation
Al-Neshawy, F. (Visiting researcher)
2007

Foundit Nordic/Salford Workshop 8-9 October 2007, Iso-Britannia
Al-Neshawy, F. (Contributor)
2007

Foundit Nordic/Salford Workshop 8 - 9 October 2007, University of Salford, U.K., 2007., Iso-Britannia
Al-Neshawy, F. (Contributor)
2007

Foundit Seminar, 12.-13.12.2007, Helsinki University of Technology, Finland, Finland
Al-Neshawy, F. (Contributor)
2007

FOUNDIT SEMINAR, 3rd TWO-DAY SPRING WORKSHOP: MAPS, MODELS AND METHODS, Finland
Al-Neshawy, F. (Contributor)
2007

Found Seminar, Helsinki University of Technology, 12 - 13.12.2007., Finland
Al-Neshawy, F. (Contributor)
2007

Concrete Solutions, 2nd International Conference on Concrete Repair, 27 – 29, June 2006, St-Malo, Brittan, France
Al-Neshawy, F. (Contributor)
2006

European Symposium on Service Life and Serviceability of Concrete Structures, 12. - 14. June 2006, Helsinki, Finland
Al-Neshawy, F. (Contributor)
2006

Foreign Organisation
Al-Neshawy, F. (Visiting researcher)
2006

Foreign Organisation

Al-Neshawy, F. (Visiting researcher)
2006

Nordic construction IT seminar, 29. - 30.3.2006, Espoo, Finland

Al-Neshawy, F. (Contributor)
2006

The Nordic Graduate School for the Construction Sector, Lynby, DTU 12.12.2006

Al-Neshawy, F. (Contributor)
2006

The Nordic Graduate School for the Construction Sector, Tukholma, KTH 22.09.2006

Al-Neshawy, F. (Contributor)
2006

XIX Symposium on Nordic Concrete Research & Development – A Meeting Place for Research and Practice, 12.-15.June, Sandefjord, Norway

Al-Neshawy, F. (Contributor)
2005

Prizes

Student prize: Oskari Vilamon rahaston väitöskirjapalkinto 2014 Oskari Vilamon rahasto, Finland

Al-Neshawy, F. (Student prize recipient), 2014

Projects

LOIKKA: Betonin CO₂-päästöjen puolittaminen

Punkki, J. (Principal investigator), Gebre, T. (Project Member), Saranya, R. (Project Member), Illarionova, E. (Project Member), Al-Neshawy, F. (Project Member), Rantala, A. (Project Member), Repo, V. (Project Member), Iqbal, A. (Project Member), Antonova, A. (Project Member), Orfanoudaki, I. (Project Member), Piironen, J. (Project Member), Alapieti, T. (Project Member) & Vähälä, I. (Project Member)
EU The Recovery and Resilience Facility (RRF)
01/03/2022 → 28/02/2024

CONAGE: Critical studies in support of the Ageing Management of NPP concrete infrastructure

Puttonen, J. (Principal investigator), Ojala, T. (Project Member), Ahmed, H. (Project Member), Al-Neshawy, F. (Project Member) & Sistonen, E. (Project Member)
01/02/2019 → 31/01/2020

WANDA: NDE of NPP primary circuit components and concrete infrastructure

Puttonen, J. (Principal investigator) & Al-Neshawy, F. (Project Member)
01/01/2016 → 31/01/2017

Non destructive examination of NPP primary circuit components and concrete infrastructure

Puttonen, J. (Principal investigator), Al-Neshawy, F. (Project Member), Huuskonen-Snicker, E. (Project Member) & Ojala, T. (Project Member)
01/01/2017 → 31/01/2018

SAFIR2014-MANAGE (VYR)

Puttonen, J. (Principal investigator), Sistonen, E. (Project Member), Kari, O.-P. (Project Member), Piironen, J. (Project Member) & Al-Neshawy, F. (Project Member)
01/01/2011 → 31/01/2015

WANDA (VYR)

Puttonen, J. (Principal investigator), Al-Neshawy, F. (Project Member) & Sistonen, E. (Project Member)
01/01/2015 → 31/01/2016

WANDA (VYR) 2018 - T21400

Puttonen, J. (Principal investigator), Al-Neshawy, F. (Project Member) & Ojala, T. (Project Member)
01/02/2018 → 31/01/2019