UNIVERSIDAD DE COSTA RICA

LanammeUCR
Laboratorio Nacional de
Materiales y Modelos Estructurales

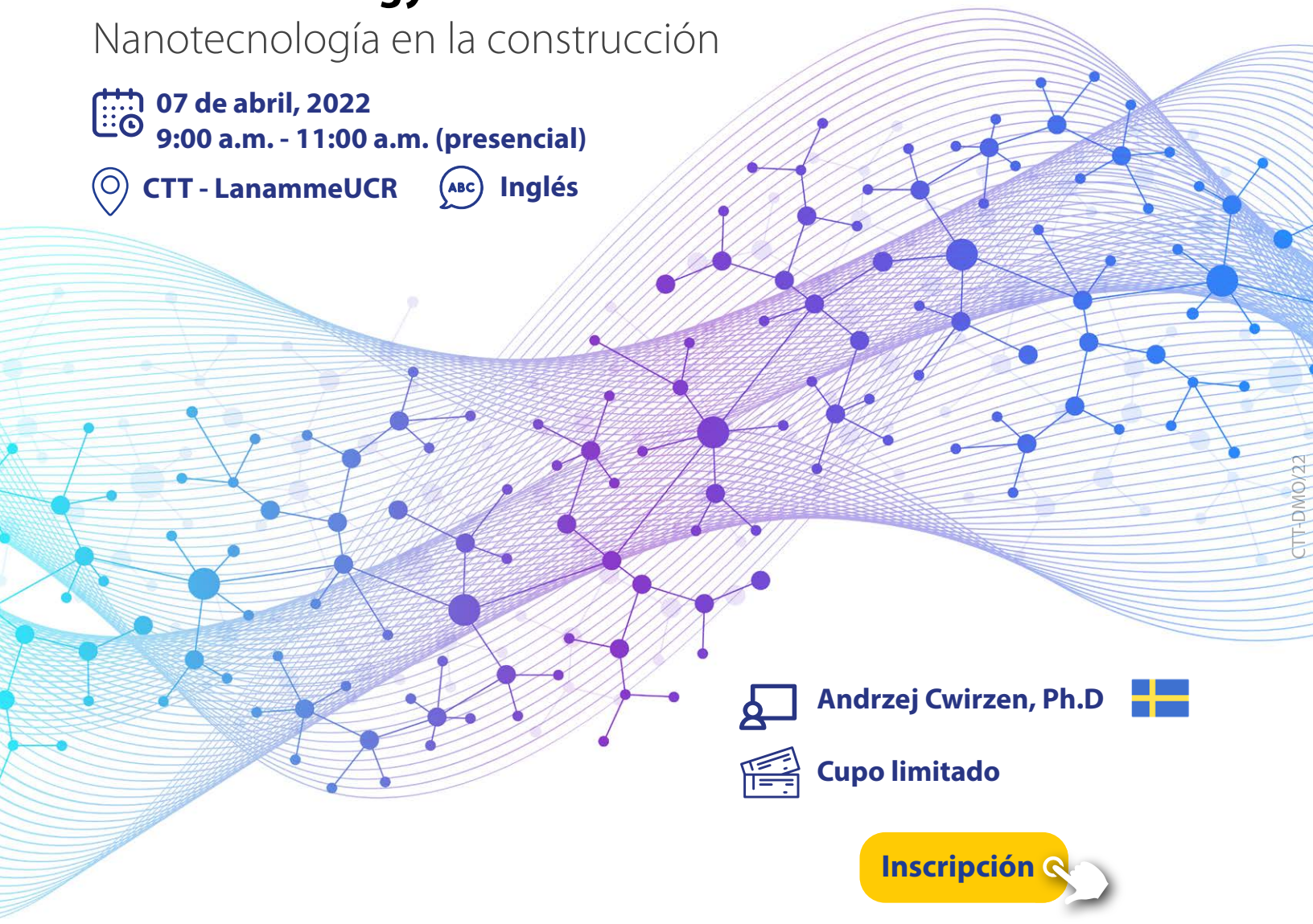
Conferencia gratuita

Nanotechnology in construction

Nanotecnología en la construcción

07 de abril, 2022
9:00 a.m. - 11:00 a.m. (presencial)

CTT - LanammeUCR **Inglés**



CTT-DMO/22

Andrzej Cwirzen, Ph.D

Cupo limitado

Inscripción

> La nanotecnología podría definirse como una ingeniería a escala molecular. A menudo se asocia solo con campos de alta tecnología, es decir, la medicina, la biotecnología, la electrónica o la industria espacial. Sin embargo, en los últimos años han demostrado que la nanotecnología también se puede aplicar con éxito en la construcción

Dirigido a estudiantes, docentes, profesionales en Ingeniería Civil.

Información e inscripciones: (506) 2511-2519 capacitacion.lanamme@ucr.ac.cr

Contenidos:

- Historia de la nanotecnología.
- Ventajas y riesgos potenciales.
- Aplicaciones de nanotubos de carbono, nanofibras de carbono, grafeno, modificaciones de concretos con nanomateriales, concretos inteligentes de autocontrol y autorreparación basados en nanofibras de carbono.
- Sistemas de monitorización basados en sensores SmartCem.
- Captación de energía a partir de concretos nanomodificados.
- Sistemas de monitorización de la salud estructural basados en nanomateriales.

Andrzej Cwirzen, Ph.D

Professor in Structural Engineering, Chair of Building Materials
Researcher unique identifier (ORCID): orcid.org/ 0000-0001-6287-2240

Academic career and education

2019 Luleå University of Technology, Sweden
Professor, Head of Building. Materials research group

2015-2018 Luleå University of Technology, Sweden
Professor, Head of Structural. Engineering research group

2013 - 2015 Aalto University, Finland Associate Professor

2010- 2012 Aalto University, Finland Docent (Adjunct Professor)

2007 - 2009 Finnish Academy of Sciences, Finalnd Postdoc position

2006 - 2007 Helsinki University of Technology, Finland
Teaching researcher

2004 - 2005 Helsinki University of Technology, Finland
Postdoctoral researcher

2000 - 2004 Helsinki University of Technology, Finland
Postgraduate studies

1/2000-6/2000 University of Bradford, UK Research Scientist

1998 - 2000 Silesian University of Technology, Poland
Teaching assistant

1998 Silesian University of Technology, Poland
Master of Science in Civil. Engineering

Industrial career

2016- MCE – LTU laboratory, Sweden. Member of the steering group

2007 - 2014 Aaro Kohonen Oy, Finland Consultant – concrete expert (part time)

2008 - 2011 Consolis Technology Oy, Finland. R&D Project manager (part time)

Publications

Scopus: >70 publications, H-index 21, >1700 citations
Google Scholar; H-index 23, >2500 citations

Books

Cwirzen A.,„Carbon Nanotubes and Carbon Nanofibers in Concrete—Advantages and Potential Risks", 1st Edition, Elsevier, 2021, 382p, Paperback ISBN: 9780323858564, eBook ISBN: 9780323855723

Patents

DK2514727T3 Alkali-activated concrete composition and use of composition in concrete casting"
EP2514727A3 „An alkali activated limestone concrete composition and use of composition in concrete casting"
FI20080172A „Hybridimateriaali, menetelm ja laitteet niiden valmistamiseksi, komposiitit ja niiden sovellukset"

Main supervision of PhD students (completed):

- PhD Abeer Humad; 2019, LTU
- PhD Katalin Orosz: 2017, LTU

Co-supervisor of PhD students (completed)

- PhD Giedrius Zirgulis: 2010-2015, Trondheim-Norway-University of Technology,
- PhD Pawel Niewiadomski, 2018 roku, Politechnika Wroclawska-Poland
- PhD Yahya Ghaseni, 2019, LTU, Szwecja
- PhD Faez Sayahi, 2019, LTU, Szwecja,
- PhD Elsa Nystr m, 2021, LTU, Szwecja,

Invited and key lectures (chosen)

- 2020, "Nanomaterials for sustainable concrete", key lecture, 11th International Conference on Sustainable Built Environment 2020, Sri Lanka
- "Alternative approaches to incorporate CNTs and CNFs into cementitious matrixes", invited lecture at the Norwegian University of Science and Technology (NTNU), Department of Structural Engineering, Trondheim 21.02.2012
- "Incorporation of nanomaterials into cementitious matrixes", invited lecture at the School of Civil and Environmental Engineering, University of Technology Sydney, July 2011
- "Nanomaterials in construction - advantages and treads", First International Conference on Composites and Nanocomposites (ICNC - 2011), January 7-9, 2011, Kottayam, Kerala, India

Reviewing appointments for international journals: Journal of Materials in Civil Engineering, Cement and Concrete Research, Advanced Cement Research, Applied clay science, ScienceAsia, etc.

Editorial Boards:
Editorial Board Member, Advances in Civil and Environmental Engineering
Editorial Board Member: Scientific Journals (SJ) issued by the Maritime University of Szczecin, Materiały budowlane, Scientific Editor, Magazyn Builder, member of the scientific board, członek rady naukowej, Guest Editor, Materials journal MDPI, Academic Editor, Hindawi, Advances in Civil Engineering, Editorial Board Member, Advances in Civil and Environmental Engineering, Editorial Board Member: Scientific Journals (SJ) issued by the Maritime University of Szczecin, International Journal of Negative Results – Editorial Board Member

Memberships: RILEM (Senior Committee member - Durability of Alkali Activated Binders), American Nanosociety, American Concrete Institute, TRB Committee Member: Task Force on Nanotechnology-Based Concrete Materials, AFN15T, USA, Member of several committees in ACI