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Cyprus University of Technology | Department of Civil Engineering & Geomatics

Τεχνική Διάλεξη

«*Building the future: Concrete's role in renewable energy storage*»

με ομιλητή τον Dr Damian Stefaniuk (MIT Dept of Civil & Environmental Engineering)

Τετάρτη, 25 Νοεμβρίου 2026, ώρα 17.30
Εκπαιδευτικό Κέντρο ΕΤΕΚ, Λευκωσία



MIT ec³ hub

Πρόγραμμα εκδήλωσης

17.30 Καλωσόρισμα
17.35 Τεχνική Διάλεξη (στα αγγλικά)
18.15 Συζήτηση
18.45 Κλείσιμο / Συμπεράσματα

Δηλώστε συμμετοχή μέχρι τις 20.11.2026 ηλεκτρονικά στον σύνδεσμο
https://forms.gle/6HrWxWgSW1KDCPaU8

Περίληψη Διάλεξης: We delve into the innovative realm of electron-conducting carbon concrete (ec^3), a revolutionary material that marries the structural capabilities of traditional concrete with advanced energy storage functions. This next-generation concrete employs a unique blend of hydrophobic nano-carbons, binder, aggregate, and water, resulting in electron-conducting carbon network within the cement matrix. The ec^3 technology not only mitigates CO_2 emissions typically associated with conventional battery production but also repurposes carbon black, a prevalent byproduct from, e.g., hydrogen production, thus contributing to a circular economy.

The presentation will showcase the practical applications of ec^3, from powering small electronic devices to its potential in large-scale energy storage solutions. We will highlight its crucial electro-chemical properties and explore its future applications. By integrating energy storage directly into construction materials, ec^3 technology paves the way for energy-autarkic shelters, self-charging roads, and more resilient power grids, fundamentally transforming how we approach sustainable construction and energy management.

Βιογραφικό Ομιλητή: Damian Stefaniuk serves as a Research Scientist within the Massachusetts Institute of Technology (MIT) Department of Civil and Environmental Engineering, the MIT Concrete Sustainability Hub (CSHub), and the MIT Electron-conductive Cement-based Materials Hub (ec^3 Hub). In his research he focuses on science-enabled engineering of sustainable cement-based materials, with applications ranging from designing corrosion-resistant prestressed bridge structures to exploring chemically induced pre-cure carbonation for carbon storage and developing electron-conductive concrete for renewable energy storage. The overall goal of his research is to make civil engineering infrastructure part of the solution of the urgently needed energy transition while mitigating greenhouse gas emissions associated with cement production.

Η Τεχνική Διάλεξη συνδιοργανώνεται από το ΕΤΕΚ, το Τμήμα Πολιτικών Μηχανικών και Μηχανικών Γεωπληροφορικής, και το Sustainable Energy Laboratory του Τεχνολογικού Πανεπιστημίου Κύπρου, και υποστηρίζεται από το U.S. Department of State μέσω του Alumni Engagement Innovation Fund.

Για περισσότερες πληροφορίες επικοινωνήστε με τον Δρ Στέλιο Γιατρό: Stylianos.yiatros@cut.ac.cy / 25002094

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