

SMART

**Sustainable Maintenance and Rehabilitation
of Railway Track**

Workshop

Place: NOVA School of Science and Technology

Department of Civil Engineering

Room 4.17

Schedule: 4th of December: 9:00-18:00

5th of December: 9:00-18:00

Mode: Hybrid

Detailed preliminary program on next pages

(remote in blue, presential in green)

Information:

If you need more information, please ask Zuzana Dimitrovová (zdim@fct.unl.pt)

If you are interested in remote participation, please inform Zuzana Dimitrovová (zdim@fct.unl.pt) who will provide you with the Zoom link.



Promoter _____

Partners _____



Zuzana Dimitrovová
IDMEC



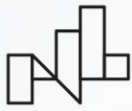
Jian Dai
Oslo Metropolitan
University (OsloMet)



Tiago Silva
NOVA.ID.FCT



Piotr Koziol
Cracow University of
Technology (CUT)



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4th of december	
Opening	09:00 - 09:15
Testing and inspection of permanent way and its components – Railway Institute experience Andrzej Massel Railway Institute, Director	09:15 - 09:30
Vision-based measurement – selected applications Piotr Kohut AGH University of Krakow	09:30 - 09:45
Analysis of track geometry degradation at a railway transition using InSAR measurements José Nuno Varandas NOVA School of Science and Technology (FCT NOVA)	09:45 - 10:30
Coffee break	10:30 - 11:00
UAV-assisted inspection of bridges Yonas Zewdu Ayele Oslo Metropolitan University (OsloMet)	11:00 - 11:45
Railway Infrastructure Inspection and Diagnosis based on Computer Vision and Deep Learning Tengjiao Jiang Norwegian University of Science and Technology (NTNU)	11:45 - 12:30
Application of continuous positioning techniques in identifying the geometric layout of a railway track Piotr Chrostowski Gdansk University of Technology	12:30 - 12:45
Lunch break	12:45 - 14:15
Drones for the survey and monitoring of railways Maria João Henriques Laboratory of Civil Engineering (LNEC), Concrete Dams Department, Head of Unit	14:15 - 15:00
Satellite based monitoring of road infrastructures: surface displacements, landslides susceptibility maps, vegetation monitoring use cases Nuno Duro Spotlite	15:00 - 15:45
to be defined Pedro Pereira Metropolitano de Lisboa, Head of the Centre of Innovation and Sustainable Development	15:45 - 16:30
Coffee break	16:30 - 17:00



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Assessment of the service quality of the railroad on the basis of its diagnostics Piotr Tokaj Railway Institute	17:00 - 17:45
A study of an energy recovery braking system implemented in the reduction of horizontal vibration of a seat suspension Tomasz Krzyżyński Koszalin University of Technology, The Polish Society of Theoretical and Applied Mechanics	17:45 - 18:00

5th of december	
Postgraduate Study in Rehabilitation of Railway Infrastructures (EPGRIF) - informative session about the course Zuzana Dimitrovová NOVA School of Science and Technology (FCT NOVA)	09:00 - 09:15
Railroad Rehabilitation Techniques - obligatory discipline of EPGRIF Eduardo Fortunato Laboratory of Civil Engineering (LNEC), Member of the Board of Directors	09:15 - 09:30
Railroad Inspection - obligatory discipline of EPGRIF Simona Fontul Laboratory of Civil Engineering (LNEC), Transportation Department	09:30 - 09:45
Geosynthetics in Railroad Rehabilitation - obligatory discipline of EPGRIF Madalena Barroso Laboratory of Civil Engineering (LNEC), Geotechnics Department	09:45 - 10:00
Dynamic and Long-Term Behavior of the Railroad - obligatory discipline of EPGRIF José Nuno Varandas NOVA School of Science and Technology (FCT NOVA)	10:00 - 10:15
Models for Calculating the Dynamic Performance of the Railroad - obligatory discipline of EPGRIF Zuzana Dimitrovová NOVA School of Science and Technology (FCT NOVA)	10:15 - 10:30
Coffee break	10:30 - 11:00



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BIM Methodology and Technical Databases - optional discipline of EPGRIF Paula Couto Laboratory of Civil Engineering (LNEC), Building Economy, Management and Technology Unit	11:00 - 11:15
Decision Support Methods - optional discipline of EPGRIF Maria João Falcão Laboratory of Civil Engineering (LNEC), Building Economy, Management and Technology Unit	11:15 - 11:30
Signal Processing for Condition Assessment - optional discipline of EPGRIF Tiago Silva NOVA School of Science and Technology (FCT NOVA)	11:30 - 11:45
Numerical Simulation of Railway Accidents for Passive Safety Analysis - optional discipline of EPGRIF Marta Carvalho NOVA School of Science and Technology (FCT NOVA)	11:45 - 12:00
Geosynthetics in the renewal of Beira Baixa railway line Nelson Pascoal and Madalena Barroso Afaplan - Planeamento e Gestão de Projectos, S.A.	12:00 - 12:15
Geosynthetics in the renewal of east railway line Carla Julieta Ribeiro and Madalena Barroso Globalvia	12:15 - 12:30
Lunch break	12:30 - 14:00
Rail track dynamics Piotr Koziol Cracow University of Technology (CTU)	14:00 - 14:45
The use of different data sources to identify railway track settlement on railway networks Albert Lau Norwegian University of Science and Technology (NTNU)	14:45 - 15:15
Laboratory investigation on railway and road materials Konrad Malicki, Jarosław Górszczyk Cracow University of Technology (CTU)	15:15 - 16:00
Coffee break	16:00 - 16:30
Round table - discussion	16:30 - 17:50
Closing	17:50 - 18:00



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