



HISTRATE

*Advanced Composites under High Strain Rate Loading
A Route to Certification-by-Analysis*

2026 Conference

PROGRAMME

10TH - 11TH JUNE 2026

DAY 1 10 June

WEDNESDAY

09:00 – 09:30 **Registration**

09:30 – 09:45 **Welcome by Local Organizer and Opening Speech**
University of Latvia

Tatjana Glaskova-Kuzmina
Guntars Kitenbergs

09:45 – 10:00 **Introduction by Action Chair**
HISTRATE - A Route to Certification-by-analysis for Impact-loaded Aeronautical Composite Structures

Patricia Verleysen

10:00 - 10:30 *Neural Network Based Composite Failure Prediction for Accelerated Explicit Finite Element Simulations*

Jens Wiegand
(Invited Speaker)

10:30 - 11:00 *Novel Simulation Methods and Best Practices for Composites Under High Strain Rates*

Cristiano Veloso
(Invited Speaker)

11:00 – 11:30 **COFFEE BREAK**

11:30 – 12:45 **Session 1 - Novel composite materials for high strain applications (WG3)**

Chair:
Vineta Srebrenkoska
Mauro Zarrelli

11:30 – 11:45 *Evaluating Thermal Reconsolidation Efficiency in CF/PEKK Composites Subjected to Single and Multiple Low-Velocity Impacts*

Hatice S. Sas

11:45 – 12:00 *Structural Performance of Voided RC slab under Blast Loading*

Ashish Kumar
Chaudhary - **ONLINE**

12:00 – 12:15 *New Epoxy/ESO Composite Systems Produced by Pultrusion and Their High Strain Rate Compressive Performance*

Ivan Vasileski

12:15 – 12:30 *Explosion Fabrication of High Entropy Composites for High Strain Rate Applications*

Nikoloz Chikhradze

12:15 - 12:30 *Enhanced Mechanical Performance of MXene-Coated Basalt Fiber-Reinforced Composites Impregnated with Star-Like Polymer-Modified Epoxy Matrix*

Tatjana Glaskova-Kuzmina



LUNCH BREAK

Tatjana.Glaskova-Kuzmina@univ.lv



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13:45 – 14:45 Poster session with 3 minute pitches

**Chair: Hatice Sinem
Şaş Çaycı**

14:45 – 15:45

COFFEE BREAK with POSTER SESSION

15:45 – 17:15 Session 2 - Novel simulation methods and best practices for composites under high strain rates (WG4)

**Chair: Andreas
Hornig**

15:45 – 16:00 *Modelling and simulation of the mechanical response and damage of carbon fibre-reinforced polymer (CFRP) laminates for aero-structures subjected to simulated lightning strike*

Albertino Arteiro

16:00 – 16:15 *Incubation-time-based failure criterion to predict delamination due to spalling and through-thickness impact loading*

Andreas Hornig

16:15 – 16:30 *Fracture modeling of the interface for composites: stick-slip behaviors – a dynamic process*

Dayou Ma

16:30 – 16:45 *High-Velocity Impact Behaviour of CFRP–PET Foam Sandwich Panels: Experimental Characterisation, Tomography and Numerical Modelling*

Filipe Ribeiro

16:45 – 17:00 *Numerical Modelling of the Additively Manufactured Continuous Fibre Reinforced Composites*

Fran Ušurić

17:00 – 17:15 *Advanced 3D Modeling of Functionally Graded Sandwich Plates under High Strain Rate Loading*

Volkan Kahya

19:30

CONFERENCE DINNER



Tatjana Glaskova-Kuzmina @



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THURSDAY

08:45 – 09:00 Registration

09:00 - 10:30 Industry Session on Certification of Composite Products

Intro by Michele Meo & Jens Wiegand

09:00 - 09:30 *Image-based High Strain Rate Testing of Composites: beyond Hopkinson's bar*

**Fabrice Pierron-
ONLINE**
(Invited Speaker)

09:30 – 10:00 *The Use of Multiscale Modeling & Machine Learning for Certification by Analysis in Composite Materials*

David Dumas
(Invited Speaker)

10:00 - 10:30 **Keynote speech:** *Quo vadis Certification by Analysis?*

André Haufe

10:30 – 11:00

COFFEE BREAK

11:00 – 12:30 Session 3 - Multi-modal sensing for impact detection and damage characterisation (WG5)

Chair: Rohan Soman

11:00 – 11:15 *Ultrasound Array Signal Reconstruction for Porosity and Defect Characterization in Complex Composite Structures Subjected To High Strain*

Krzysztof Dragan

11:15 – 11:30 *Impact Detection in Composite Structures in Aircraft and Space Systems*

Michele Meo

11:30 – 11:45 *Impact Damage Influence on the Local Wavenumber of Guided Ultrasonic Waves in Thermoplastic Composites*

Pawel Malinowski

11:45 – 12:00 *MWCNT-Modified Cellulose Interleaved Multifunctional CARALL Composites for Real-Time Impact Detection and EMI Shielding*

Volkan Eskizeybek

12:00 - 12:15 *Local Wavenumber Imaging of Thin-walled Structures for Damage Detection*

Lukasz Pieczonka

12:15 - 12:30 *Detection of Impact Events Using Optical Fiber Sensors*

Rohan Soman

12:30 – 12:45

COFFEE BREAK



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[Tatjana Glaskova-Kuzmina](#)



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12:45– 13:30 **Session 4 - Advanced testing and instrumentation for composites under high strain rates (WG6)**

Chair: Andrei Anisimov

12:45 – 13:00 *In-Situ Liquid Resin Healing of Elium/Glass Fibre Composites for Wind Turbine Blades under Elevated Mode I Loading Rates*

Mohamad Alsaadi

13:00 – 13:15 *Temperature-Dependent Impact Behavior of Carbon Fiber/PEKK Composite Laminates*

Ceren Yildirim

13:15 – 13:30 *Multiaxial Characterisation of Polymers and Composites from Quasi-Static to High Strain Rates*

Naveen Chakravarthi Petchiappan

13:30 – 14:30

LUNCH

14:30 – 15:00 **Session 4 - Advanced testing and instrumentation for composites under high strain rates (WG6) - continued**

Chair: Tatjana Glaskova-Kuzmina

14:30 – 14:45 *Design of A Round-robin Exercise on the High Strain-rate Tensile Properties of Commercial Structural Composites*

Marco Peroni

14:45 – 15:00 *HISTRATE: Progress Towards a Roadmap for Standardisation of High Strain Rate Testing of Composite Materials*

Andrei Anisimov

15:00 - 15:45

COFFEE BREAK with POSTER SESSION



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15:45 - 16:15

Invited speaker: Route to Certification-by-Analysis of Thick Walled Single Loadpath Flight Critical Composite Landing Gear Components

Tjaard Sijpkes
Intro by Andrei Anisimov

16:15 - 17:00

Session 5 - Novel simulation methods and best practices for composites under high strain rates (WG4) - continued

Chair: Andreas Hornig

16:15 - 16:30 *Coupling Proper Generalized Decomposition with Domain Decomposition for 2D ElasticWave Simulation*

Toufik Boubehziz

16:30 - 16:45 *Numerical Investigation of the Effect of Adhesives Used in Honeycomb Composite Structures Subjected to High-Velocity Ballistic Impact on Impact Resistance and Its Prediction Using the Fuzzy Logic Method*

Yunus Emre Togar

16:45 - 17:00 *High Strain Rate Deformation of Nanocomposites: A Molecular Dynamics Simulation*

Murat Şen

17:00 - 17:15

SUMMARY AND FAREWELL

*Elena Stoykova
Tatjana Glaskova-Kuzmina*



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Poster Presentations

- Maciej Radzienski Multipoint Excitation-Based S0 Mode Conversion Mapping for BVID Detection in Complex Composite Laminates
- Elena Stoykova Numerical Simulation of a Shearographic System with a Pixelated Polarization Camera
- Alicja Szostak Microring Resonators for Impact Sensing in Plates
- Yang Zhang Frequency-Wavenumber Domain Guided Wave Mode Superposition Imaging for Surface Damage Characterization of Composite Materials
- Vito Pagliarulo Non-destructive investigation of basalt-based laminates by shearography and ESPI
- Amine Haj Taieb Textile-Fiber-Based Metamaterial Structures for Impact Detection and Damage Characterisation: A Review of Multi-Modal Sensing Approaches
- Violeta Madjarova Laser Speckle Photometry of Composites under Tensile Loading
- Patrycja Pyzik Lamb wave dispersion for material characterisation of short fiber-reinforced polymer composite plates
- Çağatay Yılmaz A Numerical Study on the Usage of Lamb Waves for Damage Detection in Fiber Reinforced Polymers
- Ana-Teodora Untariu Dynamic Mechanical Analysis of neat PK and two PK-GF30 Batches
- Kaleeswaran Balasubramaniam EMAT-Based Detection of Interfacial Disbonds in Composites for Dynamic and High-Strain-Rate Applications
- Ezio Cadoni High strain rate characterisation of natural fiber composites for drones (HISTRAND)
- Özgen Çolak Çakır Microstructure-Driven Design of Strain-Rate Sensitive Nanocomposites
- Svetlana Risteska Damage and Delamination Behavior of Thermoset Composites under Impact and Medium to High-Strain-Rate Compression
- Aldobenedetto Zotti, Mauro Zarrelli High Strain Rate Behavior of Silica Loaded Epoxy Nanocomposites
- Sara Srebrenkoska Effect of ATL Processing Parameters on the Flexural Behavior and High Strain Rate Response of Carbon Fiber/PPS Thermoplastic Laminates
- Svetlana Risteska Defect Evolution and High-Strain Rate Mechanical Performance of Thermoset and Thermoplastic Fiber-Reinforced Composites



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- Abdülkadir Sezai Saraç Magneto-Mechanical Response of Electrospun Polyacrylonitrile/Magnetic Nanoparticle Composite Nanofibers for Dynamic Sensing
- Sabri Can Ekerer Additively manufactured PETG - PLA hybrid composites: Effect of high strain rates on tensile properties
- Shunqi Zhang Stochastic Effects of Interlayer Matrix Non-Uniformity on Impact Response of TPU Thermoplastic Composites
- Vineta Srebrenkoska Predictive Modeling of Ballistic Limit and Trauma Response in Aramid Fiber Reinforced Phenolic Composites
- Brikena Duga Parameters Optimization of the Gurson–Johnson–Cook Damage Model for Dual Phase Steel
- Burak Bal Molecular Dynamics Investigation of Dislocation-Mediated Mechanical Behavior and Hydrogen Embrittlement in Metal-Matrix Composites Under High Strain Rate Loading
- Yüksel Çakır Multi-Layer Perceptron Neural Network Based Prediction of Dynamic Stress–Strain Response of Polyethylene



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Speakers*

NAME ORGANISATION

Tatjana Glaskova-Kuzmina	University of Latvia
Guntars Kitenbergs	University of Latvia
Patricia Verleysen	Ghent University
Jens Wiegand	Compact Engineering Ltd. Cyprus
Cristiano Veloso	Beyond Composite, Portugal
Hatice Sinem Sas	University of Sheffield
Ashish Kumar Chaudhary	Indian Institute of Technology, Ropar
Ivan Vasileski	Goce Delcev University, North Macedonia
Nikoloz Chikhradze	Grigol Tsulukidze Mining Institute, Georgia
Albertino Arteiro	INEGI, Faculty of Engineering, University of Porto
Andreas Hornig	TUD Dresden University of Technology
Dayou Ma	Politecnico di Milano, Italy
Filipe Ribeiro	Instituto de Soldadura e Qualidade, Portugal
Fran Ušurić	University of Zagreb, Croatia
Volkan Kahya	Karadeniz Technical University, Türkiye
Fabrice Pierron	MatchID nv, Belgium
David Dumas	Cenaero ASBL, Belgium

NAME ORGANISATION

André Haufe	Ansys (part of Synopsis) Germany
Krzystof Dragan	Air Force Institute of Technology, Poland
Michele Meo	University of Southampton
Pawel Malinowski	Polish Academy of Science, Poland
Volkan Eskizeybek	Çanakkale Onsekiz Mart University, Türkiye
Lukasz Pieczonka	University of Krakow, Poland
Rohan Soman	Polish Academy of Science, Poland
Mohammad Alsaadi	University College Dublin, Ireland
Ceren Yıldırım	Thermoplastics Composite Research Centre, The Netherlands
Naveen Chakravarthi Petchiappan	Ghent University, Belgium
Marco Peroni	European Commission, Italy
Andrei Anisimov	TU Delft, The Netherlands
Toufik Boubehziz	ENSAM France
Yunus Emre Togar	Yıldız Technical University, Türkiye
Murat Şen	Firat University, Türkiye
Elena Stoykova	Bulgarian Academy of Science
Tjarad Sijpkens	TU Delft, The Netherlands
Mauro Zarrelli	CNR IPCB Italy

* listed per order of talks



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Poster Presenters

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Maciej Radzienski	Institute of Fluid Flow Machinery, Polish Academy of Science Poland
Elena Stoykova	Institute of Optical Materials and Technologies, Bulgarian Academy of Science
Alicja Szostak	Gdansk University of Technology, Poland
Yang Zhang	Institute of Fluid Flow Machinery, Polish Academy of Science Poland
Vito Pagliarulo	CNR - National Research Council of Italy
Amine Haj Taieb	ISAMS University of Sfax, Tunisia
Violeta Madjarova	Institute of Optical Materials and Technologies, Bulgarian Academy of Science
Patrycja Pyzik	AGH University of Krakow, Poland
Çağatay Yılmaz	Abdullah Gül University, Türkiye
Ana-Teodora Untariu	Politehnica University of Timisoara, România
Kaleeswaran Balasubramaniam	Innerspec Technologies, Spain
Ezio Cadoni	University of Applied Sciences and Arts of Southern Switzerland

NAME ORGANISATION

Sabri Can Ekerer	Çukurova University, Türkiye
Shunqi Zhang	Politecnico di Milano, Italy
Vineta Srebrenkoska	Goce Delcev University, North Macedonia
Brikena Duga	University of Applied Sciences in Ferizaj, Kosovo
Burak Bal	Abdullah Gül University, Türkiye
Yüksel Çakır	İstanbul Technical University, Türkiye
Abdülkadir Sezai Saraç	İstanbul Technical University, Türkiye
Sara Srebrenkoska	Goce Delcev University, North Macedonia
Aldobenedetto Zotti	CNR - IPCB Italy
Svetlana Risteska	Goce Delcev University, North Macedonia
Özgen Çolak Çakır	İstanbul Technical University, Türkiye



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