

# **ENGINEERING MECHANICS 2026**

**32<sup>nd</sup> INTERNATIONAL CONFERENCE**

**MAY 11 – 13, 2026, MEDLOV, CZECH REPUBLIC**



## **PROGRAMME OF THE CONFERENCE**

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**Institute of Thermomechanics  
of the Czech Academy of Sciences**

**Institute of Solid Mechanics, Mechatronics and Biomechanics,  
Faculty of Mechanical Engineering, Brno University of Technology**

**Institute of Theoretical and Applied Mechanics  
of the Czech Academy of Sciences**

**ŽĎAS, a.s., Žďár nad Sázavou**

**IFTToMM Member Committee of the Czech Republic**

**Czech Society for Mechanics**

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## CONTACT ADDRESS OF THE ENGINEERING MECHANICS 2026

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**The EM2026 Conference is hosted by the Hotel Medlov, located 20 km from the town of Svratka and 11 km from the previous venue in Milovy.**

**Address:**

**Hotel Medlov,**

**Fryšava pod Žákovou horou 143,**

**592 31 Fryšava pod Žákovou horou**

**Czech Republic**

**hotel reception and Registration Desk:**

Tel.: +420 566 619 201

e-mail: [info@medlovhotel.cz](mailto:info@medlovhotel.cz)

# HONORARY COMMITTEE

Pavel Cesnek, MSc, Managing Director of the ŽDAS, Inc.

## SCIENTIFIC COMMITTEE

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*Institute of Thermomechanics of the CAS, Prague, CZ*

Igor Zolotarev, PhD. (co-chairman)  
*Institute of Thermomechanics of the CAS, Prague, CZ*

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*University of Ljubljana, Ljubljana, SI*

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*Politecnico di Milano, Milan, IT*

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*Brno University of Technology, CZ*

Jiří Plešek, PhD.  
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*University of Malta, MT*

Prof. Ing. Milan Sokol, PhD.  
*Slovak University of Technology, Bratislava, SK*

Prof. Václav Uruba, PhD.  
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Assoc. Prof. Stanislav Věchet, Ph.D  
*Brno University of Technology, Brno, CZ*

Prof. Pavel Vlasák, DSc.  
*Institute of Hydrodynamics CAS, Prague, CZ*

Prof. Jaroslav Zapoměl, DSc.  
*Institute of Thermomechanics of the CAS, Ostrava, CZ*

# 1. GENERAL INFORMATION

## ACCOMMODATION

Accommodation has been reserved at Hotel Medlov. Kindly contact the hotel reception upon arrival for check-in and further assistance.

## BADGES

Participants are kindly requested to wear their badges during the conference in order to gain access to scientific sessions, meals, transportation, and other services.

## BOARDING

Boarding is provided for participants in the hotel restaurant, beginning with dinner on Monday and concluding with lunch on Wednesday. Breakfast is served from 7:30, while lunch and dinner are scheduled according to the conference programme. The costs of lunch, coffee breaks and dinner are included in the conference fee. A visible conference badge is required as identification for service.

## CONFERENCE REGISTRATION

The Registration corner of the EM2026 Conference is located in the lobby of Hotel Medlov. It is open from 13:00 to 18:30 on Monday, 11<sup>th</sup> May 2026, from 8:00 to 15:00 on Tuesday and from 9:00 to 10:45 on Wednesday. Accommodation is managed by the hotel reception. For any inquiries regarding hotel services, please contact the hotel reception.

## INSURANCE

The Conference Committee is not responsible for participants' health issues or losses. Visitors from abroad are advised to obtain insurance in their home country prior to travel.

## INTERNET SERVICES

Wi-Fi and internet services will be available in the hotel for the duration of the conference.

## REFRESHMENT

Coffee, mineral water and other refreshments will be available during the coffee breaks for all participants. Outside of these breaks, snacks can be purchased at the hotel bar (10:00 – 23:00). For other options, please contact the hotel staff.

## TRANSPORTATION

Transportation from Žďár nad Sázavou to Medlov and back (travel time 30 min.):

- A special minibus to the hotel Medlov will depart from Žďár nad Sázavou (bus station in front of the railway station) on May 11 (Monday) at 13:40.
- A special minibus to Žďár nad Sázavou (bus & railway station) will depart from the hotel Medlov on May 13 (Wednesday) at approximately 12:45. The departure time will be specified during the conference.

- Connections to Žďár nad Sázavou on Monday, 11 May 2026:

Brno hl.n.	10:13	→ Žďár n.Sázavou	11:23	Train R 984
Brno hl.n.	12:13	→ Žďár n.Sázavou	13:23	Train R 982
Brno hl.n.	14:13	→ Žďár n.Sázavou	15:23	Train R 980
Praha hl.n.	10:04	→ Žďár n.Sázavou	12:36	Train R 979
Praha hl.n.	12:04	→ Žďár n.Sázavou	14:36	Train R 981

- Connections from Žďár nad Sázavou on Wednesday, 13 May 2026

Žďár n.Sázavou	13:25	→ Praha hl.n.	15:55	Train R 982
Žďár n.Sázavou	14:38	→ Brno hl.n.	15:44	Train R 981
Žďár n.Sázavou	15:25	→ Praha hl.n.	17:55	Train R 980
Žďár n.Sázavou	16:47	→ Brno hl.n.	17:53	Train R 983
Žďár n.Sázavou	16:25	→ Praha hl.n.	18:55	Train R 978

A public bus Nr. 140 is operating between Nové Město na Moravě (bus & railway station) and Nové Město na Mor., hotel Medlov rozc. (the bus stop at the hotel), fare CZK 26, weekdays:

Nové Město n M., Dopr. term.	6:12	7:12	8:12	10:08	12:08	13:08	14:08	15:12	16:08	17:15	19:15
hotel Medlov rozc.	6:19	7:19	8:19	10:15	12:15	13:15	14:15	15:19	16:15	17:22	19:22
hotel Medlov rozc.	6:43	7:10	7:45	9:41	11:45	13:45	14:41	14:45	16:41	17:45	
Nové Město n M., Dopr. term.	6:50	7:19	7:52	9:48	11:52	13:52	14:48	15:52	16:48	17:52	

## 2. SCIENTIFIC INFORMATION

The **ENGINEERING MECHANICS 2026** — 32<sup>nd</sup> International Conference continues in the tradition of the fruitful meetings which have been held in Svatka for many years.

The Programme Committee has selected 37 contributions for the presentation (29 lectures and 8 posters) including two invited keynote lectures. All accepted papers are published in the electronic Conference Proceedings “Engineering Mechanics 2026“. The proceedings will be also published on-line on the web page [www.engmech.cz](http://www.engmech.cz) (e-ISBN: 978-80-87012-94-9, e-ISSN: 1805-8248).

### OFFICIAL LANGUAGE

The official languages of the conference are Czech, Slovak and English. No simultaneous translation is provided. Speakers are kindly asked to present in English if there is someone in the audience who does not understand Czech or Slovak.

### LECTURES

The conference includes keynote lectures (plenary sessions) and standard sessions. Both types of sessions will be held in the main lecture hall (**Conference Hall**).

The keynote lecture presentation lasts 60 minutes, while a standard lecture lasts 20 minutes, including discussion. The chairs of the scientific sessions are responsible for keeping the schedule. Presenting authors are kindly asked to contact their session chair at least 10 minutes before the start of the session and to check that their presentation is functioning properly.

A data projector and a PC are available in the lecture hall. No other facilities will be provided unless the speaker uses their own device—please contact the Conference Secretariat. A technician will be available in the lecture hall throughout the conference.

## POSTER SESSION

The poster exhibition area is located in the hotel lobby and will be accessible from Monday afternoon. Each poster has been assigned a panel approximately 0.9 × 1.2 m in size (suitable for A0 format), clearly labelled with its number and title. Fixing materials will be provided on-site and at the Registration Desk. Authors are kindly asked to leave their posters on display until the end of the conference to ensure continued visibility and engagement.

Poster authors may register their contribution for the Poster Competition for the Prize of the Managing Director of ŽĎAS at the Registration Corner. Posters entered into the competition will be marked with a red sticker. Two prizes will be awarded—one in each of the following age categories of the presenting author: under 33 years, and 33 years and above. **By entering the competition, authors confirm their availability to attend the Award Ceremony in person, as personal presence is a requirement for receiving the prize.**

Interactive poster sessions will take place during coffee breaks, offering informal opportunities for discussion with authors. A special interactive poster session will be held on Tuesday at 13:30, when the poster jury—chaired by Mr. Radek Vlček, MSc., Technical Director of the ŽĎAS company—will review the displays for official evaluation. Authors are strongly encouraged to be present during this time and throughout all interactive sessions to allow the committee to engage directly with them.

Winners of the competition will be announced and awarded on Tuesday evening at 18:00, just before the Conference Dinner. Authors are kindly requested to remove their posters by Wednesday noon.

## VARIATIONS

The Scientific Committee reserves the right to modify the programme for scientific or technical reasons. In case a speaker is absent at the scheduled time, subsequent speakers may be advanced, and the following break extended accordingly.

## TECHNICAL EXHIBITIONS

Experimental equipment, instruments, hardware, and software related to engineering mechanics may be exhibited in the hotel lobby, depending on availability and interest.

## LIST OF SECTIONS

Section	Abbreviation	Lecture Hall
Keynote Lectures	<i>KEY</i>	Conference Hall
Poster Session	<i>POS</i>	
Dynamics	<i>DYN</i>	Conference Hall
Mechanics of Solids	<i>SOL</i>	
Mechatronics	<i>MTC</i>	
Fluid Mechanics	<i>FLU</i>	
Biomechanics	<i>BIO</i>	
Reliability of Structures	<i>REL</i>	
Fracture Mechanics	<i>FRA</i>	
Tecnological Processes	<i>TEC</i>	
Fluid Mechanics	<i>FLU</i>	

### 3. CONFERENCE TIMETABLE

<b>Monday, May 11, 2026</b>	
Hotel lobby	
13:00 - 18:30	Registration of participants
Plenary session	Conference Hall
15:00 - 15:30	Opening ceremony
15:30 - 17:30	Keynote lectures
18:00	Dinner - Restaurant

<b>Tuesday, May 12, 2026</b>			
8:30 - 11:10	Conference Hall · Sessions		Hotel lobby
	<i>DYN</i>	<i>MCT</i>	
11:10 - 11:30	Coffee Break		Registration of Participants (Hotel Lobby) 8:00 - 15:00
11:30 - 12:50	Conference Hall · Sessions		
	<i>SOL</i>		
12:50 - 14:30	Lunch - Restaurant		Poster Session Main Hotel Lobby 8:00 - 18:00
14:30 - 15:30	Conference Hall · Sessions		
	<i>BIO</i>		
15:30 - 16:00	Coffee Break		
18:00 - 18:30	Announcement of the Poster Session winner - Conference Hall		
18:30 - 23:00	Conference Dinner - Restaurant		

## Wednesday, May 13, 2026

<b>8:30 – 10:30</b>	<b>Conference Hall · Sessions</b>	<b>Registration of Participants (Hotel Lobby) 9:00 – 10:45</b>
	<i><b>FLU</b></i>	
<b>10:30 - 10:50</b>	<b>Coffee Break</b>	
<b>10:50 - 12:10</b>	<i><b>REL+FRA+TRC</b></i>	
<b>12:10 - 12:15</b>	<b>Closing ceremony - Conference Hall</b>	
<b>12:15 - 14:00</b>	<b>Lunch - Restaurant</b>	

## 4. PROGRAMME OF THE PRESENTATIONS

***Monday – May 11, 2026 – Conference Hall***

**15:00 – 15:30      *Opening Ceremony – Plenary session***

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***Keynote lectures – Plenary session (KEY)***

**15:30 - 17:30**      chairman:      **Petruška J.**

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<b>15:30 - 16:30</b>	<b>Valášek M.</b> QUA VADIS MECHANICS Subjective Point of View
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<b>16:30 - 17:30</b>	<b>Frost M.</b> GENERALIZED STANDARD MATERIALS FRAMEWORK AND ITS APPLICATION TO COMPUTATIONAL MECHANICS OF SHAPE MEMORY ALLOYS
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**18:00**      ***Dinner - Restaurant***

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## ***Tuesday – May 12, 2026 – Conference Hall***

**8:30 – 10:00**    *Dynamics*    chairman: Horáček J.

**(DYN)**

8:30	<b>Bayer J., Urushadze S., Černý M.:</b> PORTABLE SOLUTIONS FOR MEASURING DYNAMIC STRESS AND CURVATURE OF BUILDING STRUCTURES
8:50	<b>Čečrdle J.:</b> EXPERIMENTAL INVESTIGATION OF PROPELLER AERODYNAMIC DERIVATIVES
9:10	<b>Fischer C., Náprstek J.:</b> POST-CRITICAL STABILITY OF STATIONARY SOLUTIONS IN A 2DOF GENERALIZED VAN DER POL AEROELASTIC MODEL
9:30	<b>Kukla O.:</b> SOFTWARE SIMULATION OPTIONS FOR EVTOL TILTWING CONFIGURATIONS

**9:50 – 11:10**    *Mechatronics*    chairman: Věchet S.

**(MCT)**

9:50	<b>Červenka M., Košťál R.:</b> ABSOLUTE POSITION SENSING IN AIRCRAFT CONTROL SYSTEMS USING 3D MAGNETIC SENSORS
10:10	<b>Neusser Z.:</b> WAVE-BASED CONTROL FOR MECHANICAL SYSTEMS WITH FORCE FEEDBACK
10:30	<b>Valášek M., Zavřel J., Nečas M., Vatandas O.E.:</b> OPTIMAL STIFFNESS OF MECHATRONIC STIFFNESS
10:50	<b>Celik H.F., Vatandas O.E.:</b> DESIGN AND ENERGY MANAGEMENT OF ELECTRIC FAN MOTORIZED (EDF) VTOL UNMANNED AERIAL VEHICLE

**11:10 – 11:30**    *Coffee Break – Restaurant*

**11:30 – 12:50**    *Mechanics of Solids*    chairman: Petruška J.

**(SOL)**

11:30	<b>Fíla T., Falta J.:</b> LOW-AMPLITUDE STRESS WAVE MEASUREMENT IN SPLIT HOPKINSON BARS USING A VISCOELASTIC POLYMERIC BAR: ROLE OF PULSE SHAPING
11:50	<b>Špaková A., Němeček J., Němeček J.:</b> CORRELATION OF LOCAL MICROMECHANICAL PROPERTIES WITH EDS CHEMICAL PROFILES IN BLENDED CEMENT PASTE
12:10	<b>Němeček J., Prošek Z., Lukeš J., Němeček J.:</b> MICROMECHANICAL PROPERTIES OF STEEL CORROSION PRODUCTS
12:30	<b>Novotný R., Šebek F.:</b> EFFECT OF TEMPERATURE AND STRAIN RATE ON HARDENING OF METALLIC MATERIALS

**12:50 – 14:30**    *L u n c h - Restaurant*

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**14:30 – 15:30    *Biomechanics*    chairman: Radolf V.**

**(BIO)**

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14:30	<b>Horáček J., Radolf V., Švec J.G., Laukkanen A.M.:</b> VIBRATIONS OF FACIAL TISSUES DURING PHONATION IN “RESONANT” AND “NON-RESONANT” VOICE QUALITY
14:50	<b>Votava T., Marcián P. , Košková O. , Fuis V. , Wolff J.:</b> BONE REMODELLING AROUND IMPLANT – TIME EFFECTIVE ALGORITHM
15:10	<b>Ouldyerou A., Mehboob H.:</b> FINITE ELEMENT MODELING OF PATIENT-SPECIFIC MANDIBULAR PLATES FOR CONDYLAR FRACTURE

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**15:30                    *Coffee Break – Restaurant***

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**18:00 - 18:30        *Announcement of the Poster Session winner – Hotel Lobby***

**18:30 - 23:00        *Conference Dinner - Restaurant***

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## Wednesday – May 13, 2026 – Conference Hall

8:30 – 10:30 *Fluid Mechanics* chairman: Zolotarev I.

(FLU)

8:30	<b>Burda R., Vondál J., Sedlář M., Abrahánek P.:</b> INFLUENCE OF PIPING SYSTEM PARAMETERS ON WATER HAMMER USING 1D CFD APPROACH
8:50	<b>Kout K., Němeček J., Němeček J.:</b> MODELING CONCRETE FLOW IN FORMWORK USING TWO-WAY FLUID-STRUCTURE INTERACTION
9:10	<b>Ledvinková B., Hračov S., Macháček M.:</b> CFD ANALYSIS OF BLOCKAGE EFFECT FOR RECTANGULAR CYLINDERS IN WIND TUNNEL FLOW
9:30	<b>Macháček M., Hračov S., Dejmal K.:</b> POST-CRITICAL FLUTTER MODE AT THE ONSET OF INSTABILITY IN A FOOTBRIDGE DECK SECTION MODEL WITH AERODYNAMIC MODIFICATIONS
9:50	<b>Šnábl P., Procházka P., Skála V.:</b> VELOCITY CALIBRATION OF A WIND TUNNEL WITH BYPASS FLOW FOR BLADE CASCADE AEROELASTIC STUDIES
10:10	<b>Vacek K., Sváček P.:</b> FINITE ELEMENT SIMULATION OF INCOMPRESSIBLE AIRFLOW THROUGH HUMAN VOCAL FOLDS

10:30 – 10:50 *Coffee Break – Restaurant*

10:50 – 12:10 *REL* chairman: Němeček J.

(REL+FRA+TEC)

10:50	<b>Kałaczyński T., Liss M., Łukasiewicz M.:</b> MODAL TESTS OF TECHNICAL OBJECTS
11:10	<b>Polach P., Bělohoubek M., Václavík J.:</b> COMPUTATIONAL AND EXPERIMENTAL SUPPORT FOR THE DEVELOPMENT OF MOBILE HYDROGEN REFUELING STATION
11:30	<b>Pavlas J., Slavík S., Růžička M., Mára V., Krčil J.:</b> FATIGUE ASSESSMENT OF TURBINE BLADE BASED ON SURFACE COATING DEGRADATION AFTER EXTREME LOADING
11:50	<b>Vomáčko V., Miller V.:</b> DESIGN OF AN INFRARED HEATING SYSTEM FOR AUTOMATED FIBER PLACEMENT OF THERMOPLASTIC TAPES

12:10 – 12:15 *Closing Ceremony – Conference Hall*

12:15 *L u n c h - Restaurant*

# Hotel Lobby

**Poster Session**

**(POS)**

**Note:**

All of the posters exhibited at the Conference can be registered into the competition for the **Prize of the Managing Director of the ŽĎAS Company**. The special committee – under chairmanship of **Mr. Radek Vlček, MSc.**, technical director of the ŽĎAS company – will conclude the assessment of the posters exhibited on **Tuesday at 13:30**.

**May 11 – 13, 2026 – Hotel Lobby**

**Poster Session: Monday 17:30 - Wednesday 12:00 (POS)**  
**chairmen: Formánek M. & Radolf V.**

<b>P01 FLU</b>	<b>Duda D., Yanovych V., Tomášková T., Janský V., Uruba V.:</b> DELAYED TURBULENCE DECAY CAUSED BY SWIRLER GRIDS
<b>P02 FLU</b>	<b>Janský V., Duda D., Uruba V., Yanovych V.:</b> FLUCTUATION ANIZOTROPY OF ISOTHERMAL FLOW TROUGH NUCLEAR FUEL ROD BUNDLE MODEL WITH SWIRLER-MIXING GRIDS
<b>P03 MCT</b>	<b>Pohludka J., Vechet S., Krejsa J., Chen K. S.:</b> DESIGN OF A SENSOR-INTEGRATED ROBOTIC HEAD FOR AUTONOMOUS INDOOR NAVIGATION OF A BIPEDAL ROBOT
<b>P04 BIO</b>	<b>Skorupa A., Piasecka-Belkhat A.:</b> MODELLING MASS TRANSFER DURING CRYOPRESERVATION IN A BIOLOGICAL SAMPLE TREATED AS A HOMOGENEOUS AND POROUS MATERIAL WITH UNCERTAIN PARAMETERS
<b>P05 FLU</b>	<b>Smyk E.:</b> ENTROPY GENERATION ANALYSIS FOR PRANDTL POWER LAW VELOCITY PROFILES IN CIRCULAR PIPES
<b>P06 REL</b>	<b>Stopel M., Szyca M., Seňko J., Radtke K.:</b> A FRAMEWORK FOR WIND TURBINE STRUCTURAL DAMAGE DETECTION VIA UAV IMAGING AND ARTIFICIAL INTELLIGENCE
<b>P07 TEC</b>	<b>Szyca M., Smyk E., Bučko M.:</b> STUDY ON THE IMPACT OF SINGLE-LEAF DOOR DESIGN IN TRAMS ON THE RATE OF PASSENGER EXCHANGE
<b>P08 TEC</b>	<b>Zbončák R.:</b> INDEXING GEARBOX CAROUSEL HYBRID DISC MANUFACTURING