iddrg 2025


1-5 June 2025

# CONFERENCE PROGRAM

MCG

JDEUS
ADVANCED THERMAL SOLUTIONS
A DENSO GROUP COMPANY

AUTOFORM
Forming Reality

**Instituto Superior Técnico** | Lisbon | **Portugal**

iddrg 2025

# 44th Conference of the International Deep Drawing Research Group

## 1-5 June 2025

# CONFERENCE PROGRAM

**Instituto Superior Técnico** | Lisbon | **Portugal**

Title:

CONFERENCE PROGRAM
**iddrg2025 - 44th Conference of the International Deep Drawing Research Group**

Edited by:

**Paulo Martins**
Técnico Lisboa *(University of Lisboa, Portugal)*

**Abel Santos**
Faculty of Engineering *(University of Porto, Portugal)*

**Marta Oliveira**
CEMMPRE, Department of Mechanical Engineering *(University of Coimbra, Portugal)*

June 2025

Avenida Rovisco Pais, 1
1049-001 LISBOA

Graphic Design:
Luís Barros
luisbarrosdesign@gmail.com

iddrg 2025


# Welcome

The 44th Conference of the International Deep Drawing Research Group (IDDRG 2025) is focused on the Group's mission to coordinate research and development in the field of sheet metal forming. The conference brings together scientists, researchers, and industry professionals from around the world who are engaged in these areas and provides an open forum for participants to present their findings and advancements related to all aspects of sheet metal forming and related topics.

In line with the tradition of IDDRG conferences, the program will combine technical presentations with opportunities for discussion. The objective is encouraging innovative thinking and facilitate the valuable exchange of contacts and ideas among participants.

Lisbon, June 2025

**Iddrg2025** is sponsored by:

MCG

JDEUS
ADVANCED THERMAL SOLUTIONS
A DENSO GROUP COMPANY

AUTOFORM
*Forming Reality*

# CONFERENCE ORGANIZATION

## Chairs

**Paulo Martins**
Técnico Lisboa *(University of Lisboa, Portugal)*

**Abel Santos**
Faculty of Engineering *(University of Porto, Portugal)*

**Marta Oliveira**
CEMMPRE, Department of Mechanical Engineering *(University of Coimbra, Portugal)*

## Local Organizing Committee

**Beatriz Silva**
Técnico Lisboa *(University of Lisboa, Portugal)*

**Carlos Alves Silva**
Técnico Lisboa *(University of Lisboa, Portugal)*

**Ivo Bragança**
Instituto Superior de Engenharia de Lisboa *(Instituto Politécnico de Lisboa, Portugal)*

**João Magrinho**
Técnico Lisboa *(University of Lisboa, Portugal)*

**João Pragana**
Técnico Lisboa *(University of Lisboa, Portugal)*

**Luis M. Alves**
Técnico Lisboa *(University of Lisboa, Portugal)*

**Paula Jorge**
Técnico Lisboa *(University of Lisboa, Portugal)*

**Rui Sampaio**
Técnico Lisboa *(University of Lisboa, Portugal)*

## Secretariat

**Fátima Tavares**
Técnico Lisboa *(University of Lisboa, Portugal)*

**Paula Taborda**
Técnico Lisboa *(University of Lisboa, Portugal)*

# CONFERENCE ORGANIZATION

## Scientific Committee

- A. Erman Tekkaya *Germany*
- A. H. van den Boogaard *Netherland*
- Abel Santos *Portugal*
- Alexander Brosius *Germany*
- Ana Camacho Lopez *Spain*
- Ana Reis *Portugal*
- Beatriz Silva *Portugal*
- Bernard Rolfe *Australia*
- Brad Kinsey *USA*
- Carlos Alves Silva *Portugal*
- Carpoforo Valellano *Spain*
- Celalettin Karadogan *Germany*
- Chris Nielsen *Denmark*
- Daniel Casellas Padró *Spain*
- Dirk Mohr *Switzerland*
- Eneko Saenz de Argandoña *Spain*
- Gabriela Vincze *Portugal*
- Gašpar Gantar *Slovenia*
- Gerson Meshut *Germany*
- Gianfranco Palumbo *Italy*
- Hui Long *UK*
- Ivo Bragança *Portugal*
- Jeong Yoon *South Korea*
- Jian Cao *USA*
- Jianguo Lin *UK*
- João Magrinho *Portugal*
- João Pragana *Portugal*
- Joost Duflou *Belgium*
- José César de Sá *Portugal*
- José Luis Alves *Portugal*
- Jun Yanagimoto *Japan*
- K. Narasimhan *India*
- Katsuhide Nishio *Japan*
- Kazuhiko Kitamura *Japan*
- Kester Clarke *USA*
- Leopold Wagner *Austria*
- Livan Fratini *Italy*
- Łukasz Madej *Poland*
- Luis Filipe Menezes *Portugal*
- Luis M. Alves *Portugal*
- Maria Luisa Garcia-Romeu *Spain*
- Marion Merklein *Germany*
- Marta Oliveira *Portugal*
- Mathias Liewald *Germany*
- Matthias Weiss *Australia*
- Mihaela Banu *USA*
- Mike Worswick *Canada*
- Myoung-Gyu Lee *South Korea*
- Nader Asnafi *Sweden*
- Nico Langerak *Netherland*
- Niels Bay *Denmark*
- Omer Music *Turkey*
- Pasi Peura *Finland*
- Patrick Duroux *France*
- Paulo Martins *Portugal*
- Peter Groche *Germany*
- Pierre-Olivier Bouchard *France*
- Prashant Date *India*
- Rui Sampaio *Portugal*
- Sandrine Thuillier *France*
- Shi-Hong Zhang *China*
- Stefania Bruschi *Italy*
- Takashi Kuboki *Japan*
- Till Clausmeyer *Germany*
- Toshihiko Kuwabara *Japan*
- Tudor Balan *France*
- Wolfram Volk *Germany*
- Yannis Korkolis *USA*
- Yi Chin *UK*
- Zhigang Wang *Japan*
- Zsolt Lukács *Hungary*

# CONFERENCE INFORMATION

## Conference Venue

The conference is hosted by Instituto Superior Técnico (campus Alameda), University of Lisbon, at the Congress Center, which offers an Auditorium and several session rooms. The location is in the city center and is easily accessible by underground/ subway through “Saldanha” or “Alameda” stations.

## Registration Desk

The registration desk is located in the lobby of the Main Auditorium of the Congress Centre in floor 01, and will be open according to the schedule below; On Sunday, June 01 the registration desk will be located in the Holiday Inn hotel.

- Sunday, June 1 2025 - 14:30 - 17:30 - Hotel Holiday Inn
- Monday, June 2 2025 – 08:00 – 18:00
- Tuesday, 03 June 2025 - 08:45 – 17:30
- Wednesday, June 4 2025 - 08:45 – 17:30

## Participation Certificates

Participation certificates will be sent by email after the conference upon request to:
*Iddrg2025@tecnico.ulisboa.pt*

## Name Badges

Please use your name badge at all times, including technical sessions and social events.

## Coffee Breaks

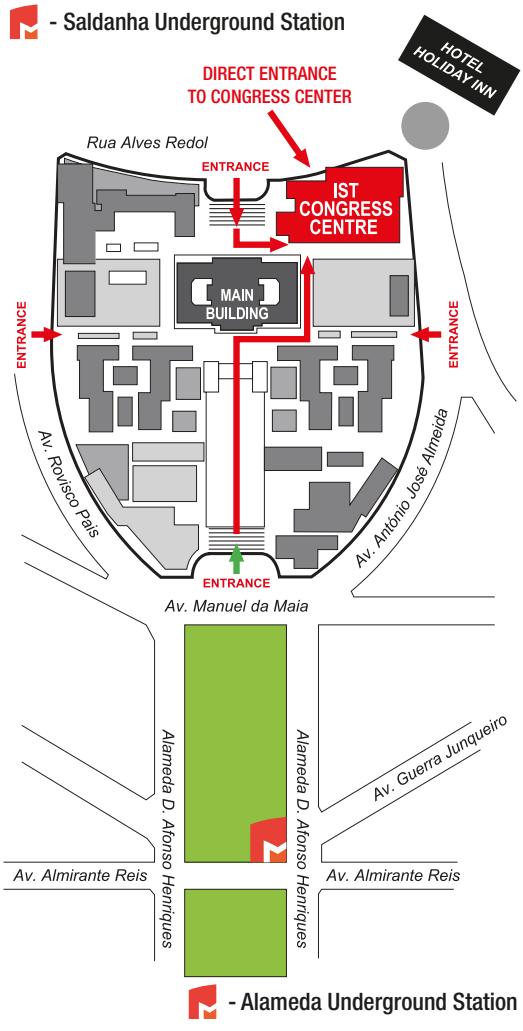
The coffee breaks will take place in the hall -2 (2nd basement) of the congress center and will be open to all participants. Kindly wear your badge

## Lunches

The lunch tickets included in the package received during the registration will be accepted in the Hotel Holiday Inn. The lunch opens at 12:00pm and offers several choices in self-service, including a daily vegetarian option. Note that the lunch tickets have different colors for each day and are valid only for the day printed in the front. Please use your badge.


## Map of Instituto Superior Técnico

With the location of the Congress Centre and Hotel Holiday Inn



# CONFERENCE INFORMATION

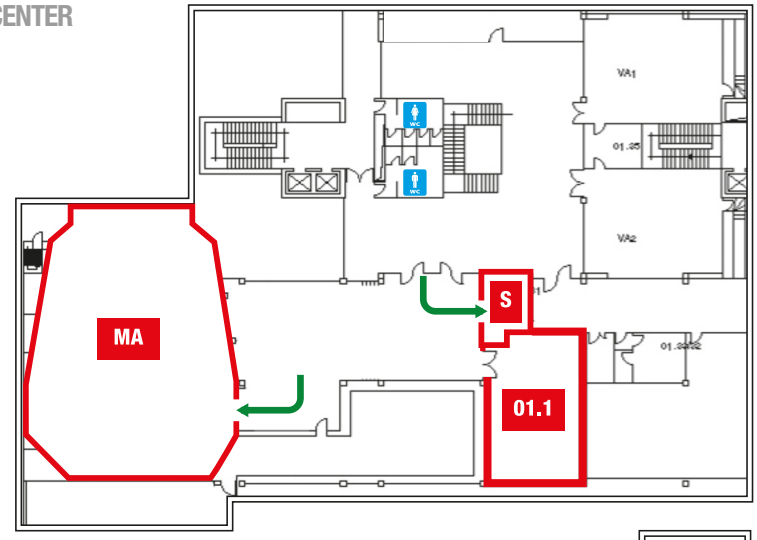
## Conference Proceedings

The Conference Proceedings can be accessed online at the following webpage:
**https://www.matec-conferences.org/articles/matecconf/abs/2025/02/contents/contents.html**

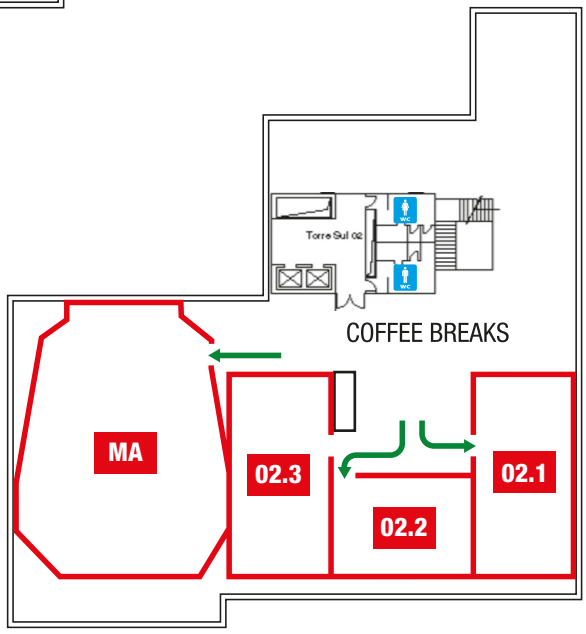
## Congress Center Floor Plans

CONGRESS CENTER

Floor -1
(1st Basement)




**MA -** Main Auditorium
**S -** Secretariat
**01.1 -** Session Room
**02.1 -** Session Room
**02.2 -** Session Room
**02.3 -** Speaker Ready Room




CONGRESS CENTER

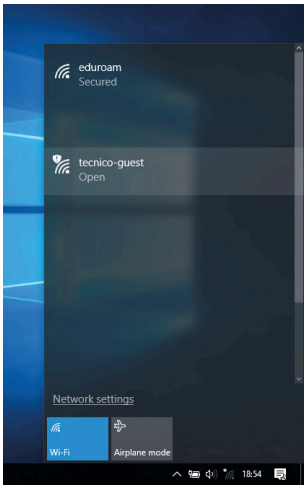
Floor -2
(2nd Basement)

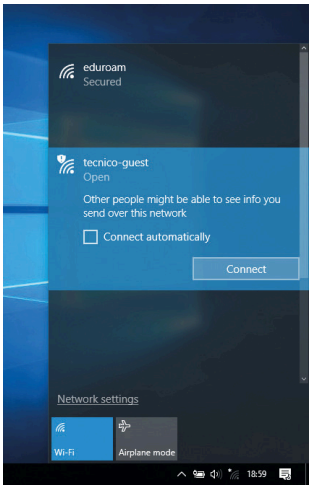
# CONFERENCE INFORMATION

## Internet Access

Participants from universities with access to the EDUROAM international Wi-Fi service may use their university login credentials.

Other participants can connect to Wi-Fi as follows: Wi-Fi SSID: **tecnico-guest**
Username: **IDDRG2025**
Password: **GLgzdm**





### Instructions:

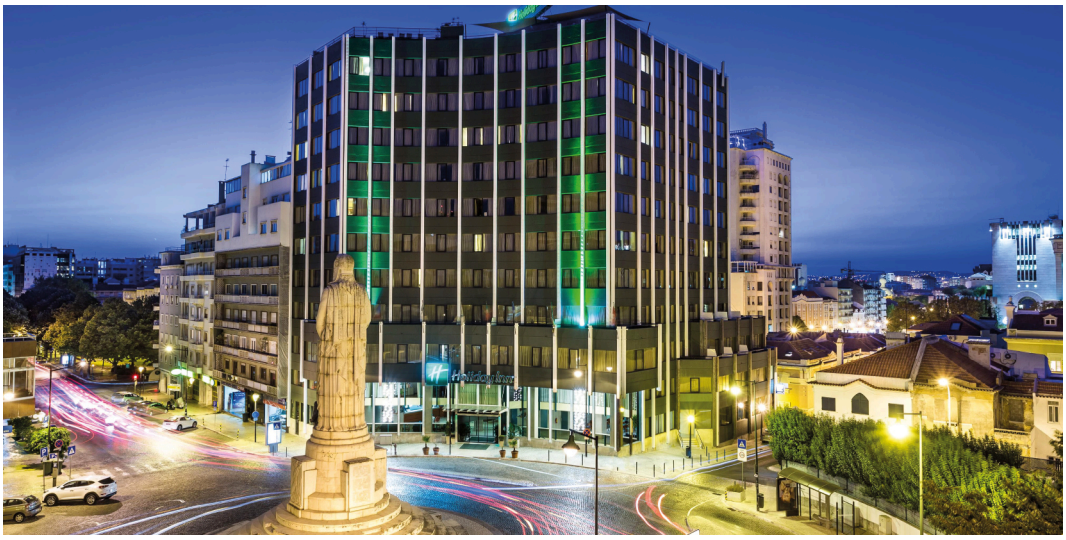
1. *Browse available wireless networks and select as SSID 'tecnico-guest'.*
2. *Set IP to automatic (DHCP). This is usually the default setting, so you may probably skip this step.*
3. *Open your browser and try to access any external website. You will be automatically redirected to the page https://wifi.ist.utl.pt/index.php.*

   *Follow the link 'Web based login' at the top of the page concerning short-time, conference and meetings accounts. Enter the above username/password when requested.*
4. *After step 3 you may freely browse and access the Internet. You may need to repeat the above steps if you close your browser or if the connection times out.*

### Instructions for Presenters

- Each Oral presentation will take 20 minutes including discussion.
- The files required for the presentation (PowerPoint or PDF) should be uploaded and tested for compatibility during the coffee or lunch breaks, prior to the start of the session, in Room 02.3 – *Speaker Ready Room*.
- The lecture rooms contain a Windows PC, with Office and Acrobat PDF Reader, connected to a data projector. The use of personal computers is not recommended.
- Technical support will be provided on-site by the **IDDRG2025** staff to ensure a smooth delivery of all presentations.

# SOCIAL PROGRAMME

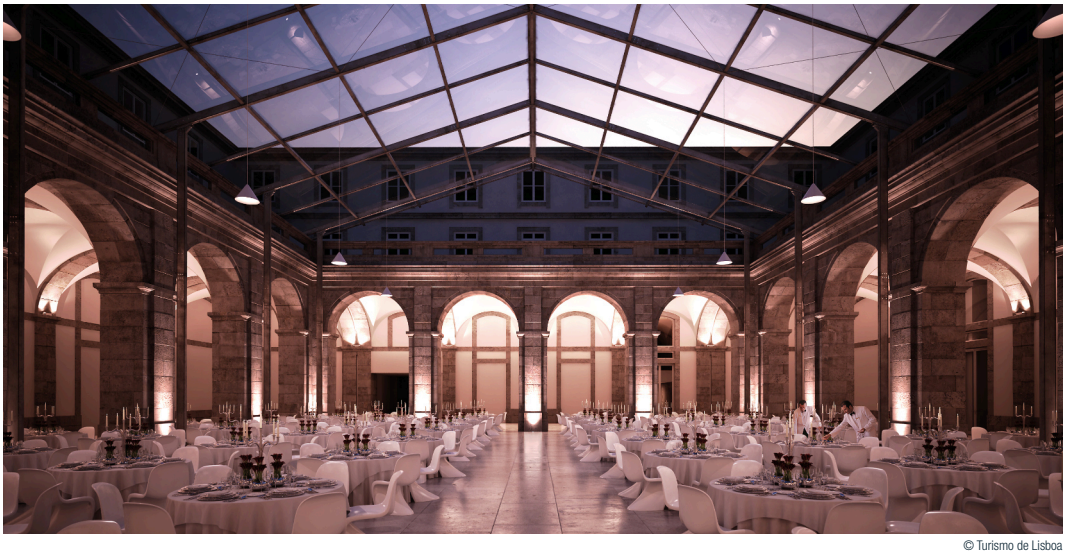


© Hotel Holiday Inn

## Welcome Reception > **June 01** - 17:30

The welcome reception will take place on Sunday June 01, 2025 at the Hotel Holiday Inn.

*Address:* **Holiday Inn Hotel** *- Av. António José Almeida, 28-A • 1000-044 Portugal*



© Turismo de Lisboa

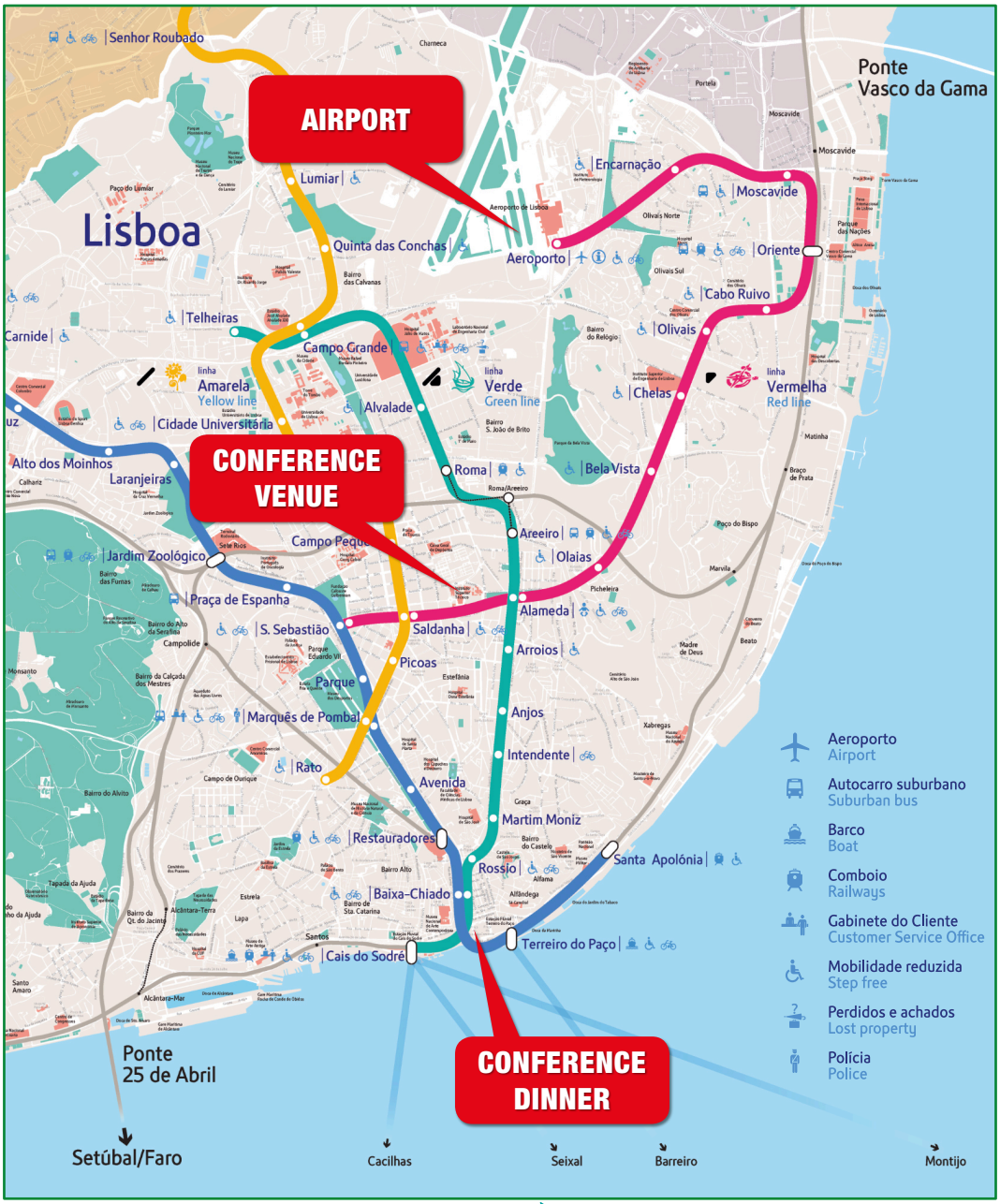
## Conference Dinner > **June 03** - 20:00

The conference dinner will be held at Páteo da Galé, located in the iconic Praça do Comércio, which faces the Tagus River, and easily accessible by subway via the "Terreiro do Paço" station, by taxi or by a walk of approximately 40 minutes through Lisbon's downtown avenues and squares.

*Address:* **Páteo da Galé** *- Praça do Comércio nº 10 • 1100-148 Lisboa*

# MAP OF LISBOA

## Network Map / Underground Lines




linha **Azul** Blue line

linha **Amarela** Yellow line

linha **Verde** Green line

linha **Vermelha** Red line

# GENERAL TOURIST INFORMATION

## Getting to Lisbon by air

Direct flights from most of European cities, North or South America and Africa land at the Portela Airport, terminal 1. A taxi ride from the airport to IST is about 4-5 km that takes 10-15 min, depending on traffic, and should cost around 8,00€. To downtown, the taxi ride is about 7 km and should cost around 10,00€. 1,60€ is charged for the transportation of luggage or animals.
A sure option is the "Taxi Voucher", a prepaid taxi service starting at 16,00€, on sale at the "Information Desk" in the arrival terminal. Lisbon Airport has its own Metro Station, Aeroporto - red line (see map of Lisbon with subway lines). Other options are the AeroBus and the Aeroshutle (4,00€).

## Getting to Lisbon by car

Drivers can use highway A1 when coming from the North, highway A2, through the 25 de Abril bridge, when coming from the South, and highway A12, through Vasco da Gama bridge, when coming from the Northeast.

## Getting to Lisbon by train

The St. Apolónia station is the terminal for trains arriving from the North of Portugal. Another option is to use the train station Oriente. From the South of Portugal an option is to use the train station Oriente. Connections to the metro lines exist at both stations (St. Apolónia - blue line, Oriente - red line).

## Moving around

*Taxi:*
Lisbon is served by an extensive network of public transportation that can take you anywhere in the city and to its surroundings. Taxis (black and green or beige) are cheap when comparing to most of the European countries. They can be called by phone, picked-up on taxi plazas or stopped on the street. The fare on the taxi meter should start at 3,25€ (daytime pick-up) or 3,90€ (night time). Outside the city limits, city fares are charged per kilometer. 1,60€ is charged for the transportation of luggage or animals. Before taking a taxi, inquire about the fare.

*Metro:*
The Lisbon Metro is a very comfortable and an easy way to reach most of the city, from 6:30 to 1:00. The Metro lines reach most of the city being the Metro stations close to IST:

- Alameda (red and green line)
- Saldanha (red and yellow line)

*Bus:*
The bus routes cover all Lisbon and extend to its outskirts. The tickets can be pre-paid, at the counters of Carris, the surface transportation operator for Lisbon, or bought aboard the bus, electric cars or funiculars. For IST hop off at one of the following bus stops:

- Av. Manuel da Maia
- Av. Rovisco Pais
- Arco do Cego

*Metro and Bus Fares:*
Reusable card - 0,50 €
METRO/CARRIS - 1,85 €
CARRIS Bus - 2,20 € (on board fare)
Tram - 3,20 € (on board fare)

*Trains:*
Suburban trains to Estoril and Cascais depart from the Cais do Sodré train station; to the south of the river cities depart from Roma - Areeiro (Entrecampos); and to Sintra depart from Rossio or Oriente train stations.
The ride to Cascais or to Sintra should take about 35-45 min, each way. The train ride to south of the river is a highlight as the train will cross the 25 de Abril bridge with magnificent views of Lisbon.

For IST, the nearby train stations are:

- Roma - Areeiro
- Entrecampos

# OTHER GENERAL INFORMATION

- National emergency number: 112
- Electricity: 220V, 50 Hz with standard European power sockets
- Temperature: high 28°C - low 18°C
- Currency: Euro (€)
- Banks: working hours are 8:30 – 15:00 *(Monday-Friday)*
- Pharmacies: 9:00 – 19:00
- Shops: 9:00 – 19:00
- Shopping Malls: 10:00 – 23:00

## Main Museums in Lisbon:

- Centro de Arte Moderna *(Modern Art Museum)*
- Museu do Oriente *(Oriente Museum)*
- Museu Calouste Gulbenkian *(Calouste Gulbenkian Museum)*
- Museu dos Coches *(Coach Museum)*
- Museu Nacional de Arte Antiga *(National Museum for Ancient Art)*
- Colecção Berardo *(The Berardo Collection)*
- Museu do Azulejo *(Tile Museum)*
- Aqueduto das Águas Livres *(Águas Livres' Aqueduct)*
- Basílica da Estrela *(Estrela Basilica)*
- Castelo de São Jorge *(Saint George's Castle)*
- Sé Patriarcal *(Patriarchal Church)*
- Mosteiro dos Jerónimos *(Jerónimos Monastery)*
- Padrão dos Descobrimentos *(Monument to the Overseas Discoveries)*
- Torre de Belém *(Belém Tower)*

iddrg 2025

# 44th Conference of the International Deep Drawing Research Group

## 1-5 June 2025

# SCIENTIFIC PROGRAM

**Instituto Superior Técnico** | Lisbon | **Portugal**

# PROGRAM AT A GLANCE

## Sunday, **June 1** - Holiday Inn Hotel

| | | | | |
|---|---|---|---|---|
| 14:30 – 17:30 | **Registration** | | | |
| 15:30 – 17:30 | **IDDRG Executive Committee Meeting** | | | |
| 17:30 – 18:30 | **Welcome Reception** | | | |

## Monday, **June 2**

| | | | | |
|---|---|---|---|---|
| 08:00 | **Registration** | | | |
| 09:00 | **Conference Opening Room MA** | | | |
| 09:30 | **KEYNOTE LECTURE I** (Room MA) > Marion Merklein \| Bart Carleer | | | |
| 10:30 | *Coffee Break* | | | |
| 11:00 | **Tribology I**<br>Room MA | **Sustainability**<br>Room 02.1 | **Materials Testing I**<br>Room 02.2 | **Incremental Forming**<br>Room 01.1 |
| 12:20 | *Lunch - **Holiday Inn Hotel*** | | | |
| 14:30 | **KEYNOTE LECTURE II** (Room MA) > Jianguo Lin | | | |
| 15:00 | **Ironing, Stamping and Spinning**<br>Room MA | **Tribology II**<br>Room 02.1 | **Materials Testing II**<br>Room 02.2 | **Hybrid Processes**<br>Room 01.1 |
| 16:40 | *Coffee Break* | | | |
| 17:00 | **Processes I**<br>Room MA | **Simulation I**<br>Room 02.1 | **Materials Testing III**<br>Room 02.2 | **Session in Honor of Professor Shihong Zhang**<br>Room 01.1 |

## Tuesday, **June 3**

| | | | | |
|---|---|---|---|---|
| 09:00 | **KEYNOTE LECTURE III** (Room MA) > Sandrine Thuillier \| Carlos Saraiva | | | |
| 10:00 | *Coffee Break* | | | |
| 10:30 | **Formability I**<br>Room MA | **Simulation II**<br>Room 02.1 | **Joining I**<br>Room 02.2 | **Tubes**<br>Room 01.1 |
| 12:10 | *Lunch - **Holiday Inn Hotel*** | | | |
| 14:30 | **Hot and Warm Forming I**<br>Room MA | **Formability II**<br>Room 02.1 | **Simulation III**<br>Room 02.2 | **Joining II**<br>Room 01.1 |
| 16:10 | *Coffee Break* | | | |
| 16:30 | **Simulation IV**<br>Room MA | **Hot and Warm Forming II**<br>Room 02.1 | **Formability III**<br>Room 02.2 | **Processes II**<br>Room 01.1 |
| 20:00 | **Conference Dinner** - Páteo da Galé | | | |

## Wednesday, **June 4**

| | | | | |
|---|---|---|---|---|
| 09:00 | **KEYNOTE LECTURE IV** (Room MA) > Mathias Liewald \| Vasco Burguete | | | |
| 10:00 | *Coffee Break* | | | |
| 10:30 | **Sensors**<br>Room MA | **Processes III**<br>Room 02.1 | **Artificial Intelligence I**<br>Room 02.2 | **Formability IV**<br>Room 01.1 |
| 12:10 | *Lunch - **Holiday Inn Hotel*** | | | |
| 14:30 | **KEYNOTE LECTURE V** (Room MA) > Shihong Zhang | | | |
| 14:30 | **Artificial Intelligence II**<br>Room MA | **Treatments**<br>Room 02.1 | **-**<br>Room 02.2 | **Formability V**<br>Room 01.1 |
| 16:20 | *Coffee Break* | | | |
| 16:40 | **Closing Ceremony** | | | |

## Thursday, **June 5** - Holiday Inn Hotel

| | |
|---|---|
| 08:30 | Bus Departure from Hotel Holiday Inn to MCG - Mind for Metal and JDEUS |
| 13:00 | Bus Departure from MCG - Mind for Metal and JDEUS to Hotel Holiday Inn |
| 14:00 | Arrival at Hotel Holiday Inn |

# SCIENTIFIC PROGRAM

iddrg 2025


## Sunday, **June 1**

| **Hotel Holiday Inn** | | **June 1** |
|---|---|---|
| 14:30 - 17:30 | **Registration** | |

| **Hotel Holiday Inn** | | **June 1** |
|---|---|---|
| 15:30 - 17:30 | **IDDRG Executive Committee Meeting** | |

| **Hotel Holiday Inn** | | **June 1** |
|---|---|---|
| 17:30 - 18:30 | **Welcome Reception** | |

# Monday, **June 2**

| **Conference Hall 01** | **June 2** |
|---|---|
| **08:00 - 09:00** | **Registration** |

| **Main Auditorium** | **June 2** |
|---|---|
| 09:00 - 09:30 | **Conference Opening** |

| **Main Auditorium** | **KEYNOTE LECTURES I** |
|---|---|
| **June 2** (09:30 - 10:30) | Chairman: ***Nico Langerak*** |

| TIME | PRESENTING AUTHOR | TITLE |
|---|---|---|
| 09:30 - 10:00 | *Marion Merklein* | **Hybridizing sheet forming with additive manufacturing**<br>*Marion Merklein, Friedrich-Alexander University of Erlangen-Nürnberg, Germany* |
| 10:00 - 10:30 | *Bart Carleer* | **Digital continuity in the stamping and BiW assembly**<br>*Bart Carleer, AutoForm, Switzerland* |

| 10:30 - 11:00 | *Coffee Break* |
|---|---|

| **Main Auditorium** | Parallel Session: **Tribology I** |
|---|---|
| **June 2** (11:00 - 12:00) | Chairman: ***Matthias Weiss*** |

| TIME | ID | PRESENTING AUTHOR | TITLE |
|---|---|---|---|
| 11:00 | **01011** | *Chris Valentin Nielsen* | **Flattening of asperities during biaxial in-plane deformation – Full mapping of the strain space by numerical simulations**<br>*Maximilian Zwicker, Paulo A.F. Martins, Chris Valentin Nielsen* |
| 11:20 | **01053** | *Philipp Schumann* | **Cavity design for surface textured sheets in metal forming**<br>*Philipp Schumann, Daniel Martin, Otavio M. Serra, Peter Groche* |
| 11:40 | **02013** | *Nagore Otegi* | **Enhancing contact pressure uniformity in strip drawing tests: a geometric approach to mitigate edge stress risers**<br>*Iñigo Llavori, Eneko Saenz de Argandoña, Alaitz Zabala, Alex McClosky, Maitane Uribe, Nagore Otegi* |

| **Room 02.1** | Parallel Session: **Sustainability** |
|---|---|
| **June 2** (11:00 - 12:00) | Chairman: ***Leopold Wagner*** |

| TIME | ID | PRESENTING AUTHOR | TITLE |
|---|---|---|---|
| 11:00 | **02026** | *Johannes Österreicher* | **Toward a circular economy in deep drawing: remanufacturing end-of-life automotive parts**<br>*Johannes Österreicher, Florian Grabner, Paul Oberhauser, Sindre L. Hovden, Carina Schlögl* |
| 11:20 | **01074** | *Michael Schiller* | **Tools from trash: Recycling pathways and use cases for rapid tooling**<br>*Peter Frohn-Sörensen, Michael Schiller, Tamara Reinicke, Bernd Engel* |
| 11:40 | **02036** | *Anna Payá* | **Effect of recycling on the mechanical properties and formability of sheet metal**<br>*Anna Payá, David Frómeta, Jaume Pujante, Manel Da Silva* |

| **Room 02.2** | | | Parallel Session: **Materials Testing I** |
|---|---|---|---|
| **June 2** (11:00 - 12:20) | | | Chairman: ***Carpóforo Vallellano*** |
| **TIME** | **ID** | **PRESENTING AUTHOR** | **TITLE** |
| 11:00 | **01002** | *David Naumann* | **Tensile testing of sheet metals at elevated temperatures with optical strain rate control**<br>*David Naumann, Marion Merklein* |
| 11:20 | **01075** | *Lisa Germain* | **Material parameter identification based on heterogeneous testing: validation in case of a forming process**<br>*Lisa Germain, Mafalda Gonçalves, Antonio Andrade-Campos, Sandrine Thuillier* |
| 11:40 | **01010** | *Rui F.V. Sampaio* | **A novel diagonal-cruciform test specimen to evaluate sheet formability**<br>*Rui F.V. Sampaio, João P.M. Pragana, Ivo M.F. Bragança, Carlos M.A. Silva, Paulo A.F. Martins* |
| 12:00 | **01080** | *Eugen Wolf* | **Investigation failure behavior in the shear tensile test with variety of specimen stiffness**<br>*Eugen Wolf, Alexander Brosius* |

| **Room 01.1** | | | Parallel Session: **Incremental Forming** |
|---|---|---|---|
| **June 2** (11:00 - 12:20) | | | Chairman: ***Ming Wang Fu*** |
| **TIME** | **ID** | **PRESENTING AUTHOR** | **TITLE** |
| 11:00 | **01039** | *Hui Long* | **Surface quality improvement under low-frequency and high-amplitude vibration in rotational vibration-assisted incremental sheet forming**<br>*Olivier Lewthwaite, Jamie Booth, Hui Long* |
| 11:20 | **01038** | *Elizabeth M. Mamros* | **Investigation using single point incremental forming (SPIF) to fabricate patient-specific, titanium orbital floor implants**<br>*Elizabeth M. Mamros, Lauren E. Blaha, Christian A. Kauffman* |
| 11:40 | **01079** | *Angela Cusanno* | **Robot-assisted single point incremental forming: focus on shape accuracy of the final part**<br>*Michele Cannillo, Angela Cusanno, Àngel Brisa i Álvarez, Martina Campanella, Antonio Piccininni, Ines Ferrer Real, Maria Luisa Garcia-Romeu, Gianfranco Palumbo* |
| 12:00 | **01051** | *Kaushik Bandyopadhyay* | **Influence of tool geometry and tool material on the formability and formed part accuracy in single point incremental forming**<br>*Suryakant Nagar, Kailash Sahu, Ritesh Banjare, Yogesh K. Dewangan, Kaushik Bandyopadhyay* |

| 12:20 - 14:30 | *Lunch - **Holiday Inn Hotel*** |
|---|---|

# Monday, **June 2**

| **Main Auditorium** | | **KEYNOTE LECTURES II** |
|---|---|---|
| **June 2** (14:30 - 15:00) | | Chairman: ***Nader Asnafi*** |
| TIME | PRESENTING AUTHOR | TITLE |
| **14:30 - 15:00** | *Jianguo Lin* | **Materials Characterisation and Modelling for Hot Stamping Applications**<br>*Jianguo Lin, Hong Kong Polytechnic University, China / Imperial College London, UK* |

| **Main Auditorium** | | | Parallel Session: **Ironing, Stamping and Spinning** |
|---|---|---|---|
| **June 2** (15:00 - 16:40) | | | Chairman: ***Hui Long*** |
| TIME | ID | PRESENTING AUTHOR | TITLE |
| 15:00 | **01030** | *Kaarel Siimut* | **Improving adjustable ironing punch performance using cemented carbide components**<br>*Kaarel Siimut, Kasper Mygind Madsen, Ermanno Ceron, Chris Valentin Nielsen* |
| 15:20 | **01007** | *Yeong-Maw Hwang* | **Study of deep drawing combined with ironing of a7075 aluminum alloy**<br>*Yeong-Maw Hwang, Yen-Lin Wu, Cheng-Chi Wang* |
| 15:40 | **01067** | *Yusuke Okude* | **Circular and square cups drawing and ironing of Ti alloy sheets by incremental press forming method**<br>*Yusuke Okude, Taku Iwaoka, Isao Nakamura, Tsuyoshi Muraoka, Takashi Katagiri* |
| 16:00 | **02002** | *Joseba Mendiguren* | **Integrating stamping tool temperature effects into early-stage process design: insights from an industrial benchmark**<br>*Lide Insausti, Alexander Barlo, Mats Sigvant, Johan Pilthammar, Eneko Saenz de Argandoña, Joseba Mendiguren* |
| 16:20 | **01040** | *Hui Long* | **Investigation of wrinkling initiation in shear spinning**<br>*Zhikun Li, Hui Long* |

| **Room 02.1** | | | Parallel Session: **Tribology II** |
|---|---|---|---|
| **June 2** (15:00 - 16:40) | | | Chairman: ***Chris V. Nielsen*** |
| TIME | ID | PRESENTING AUTHOR | TITLE |
| 15:00 | **01031** | *Jonas Moske* | **Inline wear detection in high-speed progressive dies using photometric stereo**<br>*Jonas Moske, Hasan Kutlu, Adrian Steinmeier, Pedro Santos, Arjan Kuijper, Andreas Weinmann, Peter Groche* |
| 15:20 | **02003** | *Eneko Saenz-de-Argandoña* | **Quantifying the amount of restraining due to friction in the different areas of drawing tools: a numerical analysis**<br>*Eneko Saenz-de-Argandoña, Alaitz Zabala, Ainhoa Guinea, Daniel Cañizares, Joseba Mendiguren* |
| 15:40 | **01036** | *Hengan Ou* | **Investigation of frictional behaviour in incremental sheet forming of grade one titanium sheet**<br>*Lars Korner, Hengan Ou* |
| 16:00 | **01062** | *Aiden Carley-Clopton* | **Multiscale simulation of surface roughening of a deep drawing steel due to sub-surface plastic deformation**<br>*Aiden Carley-Clopton, Grethe Winther, Oleg V. Mishin, Chris V. Nielsen* |

| **Room 02.2** | | | Parallel Session: **Materials Testing II** |
|---|---|---|---|
| **June 2** (15:00 - 16:40) | | | Chairman: ***Yannis Korkolis*** |
| **TIME** | **ID** | **PRESENTING AUTHOR** | **TITLE** |
| 15:00 | **01056** | *Kusaka Shota* | **The effect of bake hardening on the plastic strain dependency of elastic modulus**<br>*Kusaka Shota, Takashi Iwama, Kentaro Sato, Yoichiro Onishi, Tsuyoshi Shiozaki, Fusahito Yoshida* |
| 15:20 | **01027** | *Jemal Ebrahim Dessie* | **Determination of kinematic hardening parameters in W-temper forming of 6082 aluminum alloy**<br>*Jemal Ebrahim Dessie, László Rónai, Zsolt Lukács* |
| 15:40 | **02028** | *Sushil K. Mishra* | **Tension-compression asymmetry in AA2219: effect of temperature and stress states**<br>*Priya Tiwari, A.H. Siddiqui, Amit Singh, S. Narayan Murty, Sushil K. Mishra* |
| 16:00 | **01058** | *Philipp Althaus* | **Characterisation and modelling of the flow behaviour of a medium manganese steel for hot forming**<br>*Philipp Althaus, Radhakanta Rana, Hendrik Wester, Johanna Uhe, Bernd-Arno Behrens* |
| 16:20 | **01001** | *José Divo Bressan* | **nvestigations of roughness evolution in uniaxial and biaxial stretching of interstitial free - IF steel sheet**<br>*José Divo Bressan, Ricardo Kirchoff Unfer* |

| **Room 01.1** | | | Parallel Session: **Hybrid Processes** |
|---|---|---|---|
| **June 2** (15:00 - 16:40) | | | Chairman: ***Eneko Saenz de Argandoña*** |
| **TIME** | **ID** | **PRESENTING AUTHOR** | **TITLE** |
| 15:00 | **01018** | *Henrik Zieroth* | **Improving the local formability of a AA7075 aluminum alloy by laser-induced modification of the alloying concept**<br>*Henrik Zieroth, Marcel Stephan, Michael Schmidt, Marion Merklein* |
| 15:20 | **01072** | *Artem Alimov* | **Methodology for additive repair of press hardening dies using generic die segments and targeted deposition strategy**<br>*Artem Alimov, Rico Haase, Gökhan Ertugrul, Alexander Sviridov, Verena Kräusel, Claudio Krug, Sebastian Härtel* |
| 15:40 | **01060** | *Valentino A.M. Cristino* | **Integration of bending operation in hybrid additive manufacturing chains based on powder bed fusion**<br>*Valentino A.M. Cristino, Rui F.V. Sampaio, João P.M. Pragana, Ivo M.F. Bragança, Carlos M.A. Silva, Paulo A.F. Martins* |
| 16:00 | **02012** | *Gabriel Centeno* | **On the preliminary evaluation of formability of Ti6Al4V selected laser melted sheets**<br>*J. Andrés López-Fernández, Ana Rosa-Sainz, Inés Ferrer, Gabriel Centeno, M. Luisa García-Romeu, Carpóforo Vallellano* |
| 16:20 | **01008** | *Muhammad Ali Kaleem* | **Design criteria to use 3D printed polymeric tools in metal forming processes**<br>*Muhammad Ali Kaleem, Peter Frohn-Sörensen, Rainer Steinheimer, Bernd Engel* |

| | |
|---|---|
| 16:40 - 17:00 | *Coffee Break* |

# Monday, **June 2**

| **Main Auditorium** | | | Parallel Session: **Processes I** |
|---|---|---|---|
| **June 2** (17:00 - 18:20) | | | Chairman: ***Marion Merklein*** |
| **TIME** | **ID** | **PRESENTING AUTHOR** | **TITLE** |
| 17:00 | **02031** | *Jong-Hwa Hong* | **Manufacturing process of 46XX high-capacity, high-density cylindrical-type battery cell can**<br>*Jong-Hwa Hong, Ye-Chan Seo, Sumin Ji, Sedong Lee, Hongseok Seong, Eun-Yoo Yoon* |
| 17:20 | **02030** | *Wenlong Xie* | **Influence of process parameters on the quality of flexible forming of 316L bipolar plate**<br>*Wenlong Xie, Zonghui Su, Siying Deng, Yong Xu, Hongwu Song, Shihong Zhang* |
| 17:40 | **01021** | *Abdelrahman Essa* | **Inline monitoring of material properties and product shape in roll forming**<br>*Abdelrahman Essa, Marcus Decker, Harshil Padharia, Matthias Weiss* |
| 18:00 | **02001** | *Takashi Matsuno* | **Derivation of point plot-based ductile fracture loci through assimilation of finite element simulation and individual actual punched surface profile**<br>*Takashi Matsuno, Jin Eguchi, Yasuhiro Kunii, Kazuyuki Shimizu, Yuki Matsuki, Toyohisa Shinmiya, Eiji Iizuka* |

| **Room 02.1** | | | Parallel Session: **Simulation I** |
|---|---|---|---|
| **June 2** (17:00 - 18:20) | | | Chairman: ***Luis F. Menezes*** |
| **TIME** | **ID** | **PRESENTING AUTHOR** | **TITLE** |
| 17:00 | **01089** | *Werner Feix* | **An approach to modeling friction-stir welded joints in forming**<br>*Werner Feix, Celalettin Karadogan, Tobias Graf, André Haufe* |
| 17:20 | **02004** | *Dominique Saletti* | **Effect of $\sigma_b$ and $r_b$ identification method from bulge test on aluminium stamping simulation**<br>*Dominique Saletti, Dominique Daniel, Thierry Bayle, Laurent Laszczyk* |
| 17:40 | **01094** | *André Leonhardt* | **Increasing the displaced fluid volume of curved metal membranes for diaphragm compressors**<br>*Mikhail Solovev, André Leonhardt, Andreas Kunke, Till Clausmeyer* |
| 18:00 | **01024** | *Heng-Sheng Lin* | **Evaluation of forming methods for a micro cup-part used in an ultra-miniatured radio-frequency connector**<br>*Heng-Sheng Lin, Chuan-Hsi Hung, Zong-Ying Wang, Xing-Yonug Lo* |

| **Room 02.2** | | | Parallel Session: **Materials Testing III** |
|---|---|---|---|
| **June 2** (17:00 - 18:20) | | | Chairman: ***Sandrine Thuillier*** |
| **TIME** | **ID** | **PRESENTING AUTHOR** | **TITLE** |
| 17:00 | **01082** | *Leopold Wagner* | **Analysis of experimental scattering sources in local ductility measurement from flat tensile test sample fracture surfaces**<br>*Patrick Larour, Wolfgang Lumetzberger, Leopold Wagner* |
| 17:20 | **01063** | *Silke Klitschke* | **Investigations on strain rate dependent forming limits of 5xxx aluminium alloys for flow-line-free sheet metal forming**<br>*Silke Klitschke, Lukas Hauser, Mathias Liewald* |
| 17:40 | **02020** | *David Palomo* | **On the thermomechanical behaviour of polymeric sheets at localized necking**<br>*David Palomo, Andrés J. Martínez-Donaire, Domingo Morales, Carpóforo Vallellano* |
| 18:00 | **01055** | *Sriram Sadagopan* | **Effect of prestrain and strain path on retained austenite transformation and eventual fracture behavior of Q&P steels**<br>*Sriram Sadagopan, Brian Lin, Narayan Pottore, Su Liu, Hong Zhu* |

| **Room 01.1** | | | Parallel Session: **Session in Honor of Professor Shihong Zhang** |
|---|---|---|---|
| **June 2** (17:00 - 18:20) | | | Chairman: ***Paulo A.F. Martins*** |
| **TIME** | **ID** | **PRESENTING AUTHOR** | **TITLE** |
| 17:00 | - | *Nader Asnafi* | **Tool and die making, surface treatment, and repair by laser-based additive processes**<br>*Nader Asnafi* |
| 17:20 | **02041** | *Siying Deng* | **Investigation on the formability and deformation mechanism of Zircaloy-4 sheets with different initial textures during stamping**<br>*Siying Deng, Wenlong Xie, Shuaifeng Chen, Hongwu Song, Shihong Zhang* |
| 17:40 | **01029** | *M.W. Fu* | **Crystal plasticity finite element method application in micro/meso-scaled deep drawing and some related concerns**<br>*Xu Tong, M.W. Fu* |
| 18:00 | - | *Shuaifeng Chen* | **Fabrication of high-performance thin copper tube, wire and sheet: Alloy design and CP-FE simulation**<br>*Shuaifeng Chen* |

# Tuesday, **June 3**

| **Main Auditorium** | | **KEYNOTE LECTURES III** |
|---|---|---|
| **June 3** (09:00 - 10:00) | | Chairman: ***Abel Santos*** |
| **TIME** | **PRESENTING AUTHOR** | **TITLE** |
| 09:00 - 09:30 | *Sandrine Thuillier* | **Heterogeneous mechanical testing for virtual sheet metal forming**<br>*Sandrine Thuillier, Université de Bretagne Sud, France* |
| 09:30- 10:00 | *Carlos Saraiva* | **Research and Development at MCG-Mind for Metal**<br>*Carlos Saraiva, MCG – Mind for Metal, Portugal* |
| 10:00 - 10:30 | *Coffee Break* | |

| **Main Auditorium** | | | Parallel Session: **Formability I** |
|---|---|---|---|
| **June 3** (10:30 - 12:10) | | | Chairman: ***Till Clausmeyer*** |
| **TIME** | **ID** | **PRESENTING AUTHOR** | **TITLE** |
| 10:30 | **01049** | *Kevin Buducan* | **Mini-punch experimental device development and analysis for ductile damage identification of naval structures**<br>*Kevin Buducan, Christophe Pradille, Serge Bonhomme, Dorian Brousse, Bruno Leblé, Pierre-Olivier Bouchard* |
| 10:50 | **02005** | *Michael Brünig* | **Biaxial experiments and numerical analysis on damage and fracture in anisotropic aluminum sheets**<br>*Michael Brünig, Sanjeev Koirala, Steffen Gerke* |
| 11:10 | **01004** | *Leopold Wagner* | **Competing failure modes in hole expansion testing of AHSS sheets**<br>*Leopold Wagner, Patrick Larour, Johann Freudenthaler, Gernot Trattnig, Erich Berger* |
| 11:30 | **01026** | *Xiaoyu Yang* | **The effect of banded microstructures on the hole expansion behavior of hot-rolled steel**<br>*Xiaoyu Yang, Zhenli Mi* |
| 11:50 | **01022** | *Ji-Chao Zhang* | **Study on the failure behavior of advanced high strength steel considering stamping history**<br>*Ji-Chao Zhang, Changwei Lian, Fei Han* |

| **Room 02.1** | | | Parallel Session: **Simulation II** |
|---|---|---|---|
| **June 3** (10:30 - 11:50) | | | Chairman: ***Gabriel Centeno*** |
| **TIME** | **ID** | **PRESENTING AUTHOR** | **TITLE** |
| 10:30 | **01085** | *Gabriel Marín* | **Design of multi-step dies for sheet forming using a workpiece-performance-based approach: a preliminary study**<br>*Gabriel Marin, Florian Weber, Hosen Sulaiman, Martin Heuse, Yannis Korkolis* |
| 10:50 | **01070** | *Joséphine Chatellier* | **Characterization and modeling of multi-step drawing process for thick steel sheets**<br>*Joséphine Chatellier, Christophe Pradille, Christophe Kerisit, Pierre-Olivier Bouchard* |
| 11:10 | **01065** | *Toni Chezan* | **Integrating optical draw-in measurements with finite element analysis for enhanced process insights in sheet metal forming**<br>*Toni Chezan, Trunal Dhawale, Johan Pilthammar, Alexander Barlo, Omsri Aeddula* |
| 11:30 | **01032** | *Saaya Kanayama* | **Pad force required in shear-deformation sheet forming of curved hat channels for ultra-high-strength steels**<br>*Saaya Kanayama, Tohru Yonebayashi, Yasuharu Tanaka, Shunji Hiwatashi* |
| 11:50 | - | *Jeong Whan Yoon* | **Materials characterization and modeling for metal-polymer composite pouch film**<br>*Cheol Sagong, Taek Jin Jang, Taegyun Ahn, Jeong Whan Yoon* |

| **Room 02.2** | | | Parallel Session: **Joining I** *(organized by Alexander Brosius, Gerson Meshut and Marion Merklein)* |
|---|---|---|---|
| **June 3** (10:30 - 11:50) | | | Chairman: ***Alexander Brosius*** |
| **TIME** | **ID** | **PRESENTING AUTHOR** | **TITLE** |
| 10:30 | **01069** | *Pia Katharina Holtkamp* | **Integration of multiple-linear and tumbling kinematics into self-piercing riveting**<br>*Pia Katharina Holtkamp, Simon Wituschek, Michael Lechner, Gerson Meschut* |
| 10:50 | **01086** | *Stephan Lüder* | **Investigation of the impact of a rotationally superimposed punch stroke on the binding mechanisms of a clinched joint**<br>*Stephan Lüder, Eugen Wolf, Hans Christian Schmale, Alexander Brosius* |
| 11:10 | **01028** | *Abdulhakim S. Rahmato* | **Effect of pre-strain on the strength of similar aluminium EN AW5754-H22 alloy joined by clinching**<br>*Abdulhakim S. Rahmato, Péter Z. Kovács* |
| 11:30 | **02022** | *Ivo M.F. Bragança* | **Modelling wire-arc-additive manufacturing for joining by forming applications**<br>*João M.A. Viegas, Pedro M.S. Rosado, Rui F.V. Sampaio, João P.M. Pragana, Ivo M.F. Bragança, Carlos M.A. Silva, Paulo A.F. Martins* |

| **Room 01.1** | | | Parallel Session: **Tubes** |
|---|---|---|---|
| **June 3** (10:30 - 12:10) | | | Chairman: ***Shihong Zhang*** |
| **TIME** | **ID** | **PRESENTING AUTHOR** | **TITLE** |
| 10:30 | **01077** | *Rui Amaral* | **Analysis of springback in rotary draw bending process: numerical modeling with experimental validation**<br>*Rui Amaral, Daniel Cruz, Maria Almeida, Manuel Barros, Abel Santos, Ana Reis* |
| 10:50 | **02016** | *João Magrinho* | **On the determination of the forming limits of low alloy steel thin-walled tubes**<br>*João Magrinho, Pedro Cruz, Eneko Sáenz-De-Argandoña, Joseba Mendiguren, Maria Beatriz Silva* |
| 11:10 | **01048** | *Qinxiang Xia* | **Study on the formation mechanism of fish-scale defects during flow forming of copper alloy tubes with large thickness-to-diameter ratio**<br>*Qinxiang Xia, Jie Zhao, Gangfeng Xiao, Delin Tang, Huachun Cui* |
| 11:30 | **01044** | *Rachid Baleh* | **Energy performance of non-conventional metal tubular systems via a new multiaxial loading path**<br>*Rachid Baleh, Hayat Belguebli* |
| 11:50 | **02023** | *Inês Almeida* | **Formability limits by fracture in square tubes and L-section profiles**<br>*Inês Almeida, João Magrinho, Maria Beatriz Silva* |

| 12:10 - 14:30 | *Lunch - **Holiday Inn Hotel*** |
|---|---|

# Tuesday, **June 3**

| **Main Auditorium** | | | Parallel Session: **Hot and Warm Forming I** |
|---|---|---|---|
| **June 3** (14:30 - 16:10) | | | Chairman: ***Yoshinori Yoshida*** |
| **TIME** | **ID** | **PRESENTING AUTHOR** | **TITLE** |
| 14:30 | **01016** | *Jan Henning Risse* | **Investigation of hot stamping transition zones at tailored carburization at elevated temperatures**<br>*Jan Henning Risse, Marion Merklein* |
| 14:50 | **01009** | *Zhusheng Shi* | **Experimental and numerical investigations of effects of HFQ conditions on forming of AA6082 B-pillar components**<br>*Jiaqi Li, Ruiqiang Zhang, Jianguo Lin, Zhusheng Shi* |
| 15:10 | **01047** | *Shuki Nakamura* | **Heat treatment conditions for forming AA6022 aluminum sheet in a forming process with intermediate heat treatment**<br>*Shuki Nakamura, Ryutaro Akiyoshi, Masatoshi Yoshida* |
| 15:30 | **01003** | *Keitaro Mori* | **Simulation of hot stamping considering self-tempering**<br>*Keitaro Mori, Masahiro Kubo, Kazuo Okamura* |
| 15:50 | **01034** | *Laura Grifé* | **The relationship between fracture toughness and blanking performance of 850MPa hot-rolled steels**<br>*Vili Kesti, Laura Grifé, Pekka Plosila, David Frómeta, Antti Kaijalainen* |

| **Room 02.1** | | | Parallel Session: **Formability II** |
|---|---|---|---|
| **June 3** (14:30 - 16:10) | | | Chairman: ***José Divo Bressan*** |
| **TIME** | **ID** | **PRESENTING AUTHOR** | **TITLE** |
| 14:30 | **01064** | *Gregoire Mainguy* | **Comparison of nonlinear strain path correction models for the FLC characterisation**<br>*Gregoire Mainguy, Tudor Balan, Xavier Lemoine* |
| 14:50 | **02018** | *Olle Sandin* | **Using the particle finite element method for predicting edge-cracking in complex phase high-strength steel sheets**<br>*Olle Sandin, Patrick Larour, Juan Manuel Rodríguez, Jörgen Kajberg, Daniel Casellas* |
| 15:10 | **01066** | *Advaith Narayanan* | **Sheared edge formability of multi-phase steels under in- and out-of plane deformation**<br>*Advaith Narayanan, Rhys Northcote, Patrick Cleary, Miguel Quinones, Cliff Butcher* |
| 15:30 | **02015** | *Vincent Grolleau* | **Punch in a punch: validating FLC and fracture models for severe strain path changes**<br>*Vincent Grolleau, Engin Sen, Erik de Best, Christian C. Roth, Dirk Mohr* |
| 15:50 | **01076** | *David Frómeta* | **Enhanced ductility and fracture classification maps for advanced high-strength steels considering local ductility and fracture toughness**<br>*David Frómeta, Laura Grifé, Daniel Casellas* |

| **Room 02.2** | | | Parallel Session: **Simulation III** |
|---|---|---|---|
| **June 3** (14:30 - 16:10) | | | Chairman: ***Mathias Liewald*** |
| **TIME** | **ID** | **PRESENTING AUTHOR** | **TITLE** |
| 14:30 | **01020** | *Marta Oliveira* | **Correcting the earing profile resulting from misalignments of the blank in the deep drawing of a cylindrical cup**<br>*Marta Oliveira, Diogo M. Neto, Luis F. Menezes, Pedro M. Seixas, André F. Pereira* |
| 14:50 | **01017** | *Tsuyoshi Muraoka* | **Ear height control by die radius shape in cylindrical deep drawing**<br>*Tsuyoshi Muraoka, Yusuke Okude, Isao Nakamura, Takashi Katagiri* |
| 15:10 | **01093** | *Wei Tong* | **On the equivalence and differences of three plane-stress yield criteria for modelling orthotropic sheet metals with the tension-compression strength differential effect**<br>*Jie Sheng, Wei Tong* |
| 15:30 | **01078** | *Xavier Lemoine* | **Yoshida-Uemori model: Improvement of the elastic modulus evolutive model and Springback application**<br>*Xavier Lemoine* |
| 15:50 | **01013** | *Jan Jepkens* | **Introduction and validation of a surrogate model for warm forming and cathodic dip treatment of AA7075**<br>*Jan Jepkens, Eduard Ortlieb, Dominyka Vasquez Ramirez, Hendrik Wester, Johanna Uhe, Bernd-Arno Behrens* |

| **Room 01.1** | | | Parallel Session: **Joining II** *(organized by Alexander Brosius, Gerson Meshut and Marion Merklein)* |
|---|---|---|---|
| **June 3** (14:30 - 15:50) | | | Chairman: ***Ermanno Ceron*** |
| **TIME** | **ID** | **PRESENTING AUTHOR** | **TITLE** |
| 14:30 | **01081** | *Moritz Neuser* | **Mechanical joinability of microstructurally graded structural components manufactured from hypoeutectic aluminium casting alloys**<br>*Moritz Neuser, Malte Christian Schlichter, Kay-Peter Hoyer, Mathias Bobbert, Gerson Meschut, Mirko Schaper* |
| 14:50 | **01054** | *Mohammad Mehdi Kasaei* | **Tube fit joining: a novel technique for busbar-to-prismatic cell interconnections in electric vehicles**<br>*Mohammad Mehdi Kasaei, Vasco B. Gomes, Ricardo J.C. Carbas, Eduardo A.S. Marques, Lucas F.M. da Silva* |
| 15:10 | **01095** | *Pedro Rosado* | **On the hybridization of double-flush riveting with adhesive bonding**<br>*João M.B. Alpendre, Pedro M.S. Rosado, Rui F.V. Sampaio, João P.M. Pragana, Ivo M.F. Bragança, Carlos M.A. Silva, Paulo A.F. Martins* |
| 15:30 | **01035** | *Deekshith R Devulapally* | **Impact of non-rotationally symmetric joint orientation on neighbouring joints and component performance in lap shear specimens**<br>*Deekshith R Devulapally, Christian Steinfelder, Thomas Tröster, Alexander Brosius* |

| 16:10 - 16:30 | *Coffee Break* |
|---|---|

# Tuesday, **June 3**

| **Main Auditorium** | | | Parallel Session: **Simulation IV** |
|---|---|---|---|
| **June 3** (16:30 - 17:30) | | | Chairman: ***Zsolt Lukács*** |
| **TIME** | **ID** | **PRESENTING AUTHOR** | **TITLE** |
| 16:30 | **01033** | *Oana Cazacu* | **Multi-scale modelling of plastic anisotropy of aluminum sheets and application to deep-drawing**<br>*Oana Cazacu, Benoit Revil-Baudard* |
| 16:50 | **02035** | *Miguel Sousa Pereira* | **Integrated simulation process chain: from 3d roll forming design to crash analysis**<br>*Albert Sedlmaier, Thomas Dietl, André Abee, Johann Harrasser, Miguel Sousa Pereira* |
| 17:10 | **01019** | *Luis F. Menezes* | **Influence of thickness variability on the deep drawing of a cylindrical cup**<br>*Luis F. Menezes, Marta Oliveira, Diogo M. Neto, Carlos Monteiro, André F. Pereira* |

| **Room 02.1** | | | Parallel Session: **Hot and Warm Forming II** |
|---|---|---|---|
| **June 3** (16:30 - 17:30) | | | Chairman: ***Jianguo Lin*** |
| **TIME** | **ID** | **PRESENTING AUTHOR** | **TITLE** |
| 16:30 | **01012** | *Wan-Ling Chen* | **Observation of microstructural characteristics on the formability for AA 7075 alloy sheets under warm forming conditions**<br>*Wan-Ling Chen, Rong-Shean Lee* |
| 16:50 | **01025** | *Lorenz Albracht* | **Increasing the performance of hot forming parts by resistance heating in XHV-adequate atmosphere**<br>*Bernd-Arno Behrens, Sven Hübner, Ulrich Holländer, André Langohr, Alexander Schnettger, Jan-Ulrich Gellermann, Jörn Wehmeyer, Lorenz Albracht* |
| 17:10 | **02027** | *Georg Kunschert* | **Enhanced formability of a-ß titanium sheet material below 500°C**<br>*Georg Kunschert, Jürgen A. Nietsch, Angelika Cerny, Florian Grabner, Johannes A. Österreicher* |

| **Room 02.2** | | | Parallel Session: **Formability III** |
|---|---|---|---|
| **June 3** (16:30 - 17:30) | | | Chairman: ***Hengan Ou*** |
| **TIME** | **ID** | **PRESENTING AUTHOR** | **TITLE** |
| 16:30 | **02014** | *John Magliaro* | **Formability limits, damage and fracture mechanisms in AA5182 Al-Mg sheets formed under subzero temperature conditions**<br>*John Magliaro, Amir Behtash, Ahmet Alpas* |
| 16:50 | **02024** | *Yuichi Matsuki* | **The mechanism of microstructural transformation upon edge heat treatment on stretch flangeability and fracture of ultrahigh-strength steel with sheared edge**<br>*Yuichi Matsuki, Toyohisa Shinmiya* |
| 17:10 | **02021** | *Jan Gerlach* | **Damage-induced changes in elastic stiffness of DP800 sheets at large strains**<br>*Jan Gerlach, Robin Gitschel, Marlon Hahn, Yannis P. Korkolis, A. Erman Tekkaya* |

| **Room 01.1** | | | Parallel Session: **Processes II** |
|---|---|---|---|
| **June 3** (16:30 - 17:30) | | | Chairman: ***Gabriela Vincze*** |
| **TIME** | **ID** | **PRESENTING AUTHOR** | **TITLE** |
| 16:30 | **01005** | *Jan-Ulrich Gellermann* | **Method planning for deep drawing in the production of workpieces with variable shapes**<br>*Richard Krimm, Sven Hübner, Dennis Schmiele, Lennart Hinz, Malte Nagel, Jan-Ulrich Gellermann* |
| 16:50 | **02007** | *Miguel Jesus* | **Process limits improvement in sheet injection using locally heat-treated aluminium alloy**<br>*João Magrinho, Angela Cusanno, Miguel Jesus, Antonio Piccininni, Pasquale Guglielmi, Gianfranco Palumbo, Maria Beatriz Silva* |
| 17:10 | **01083** | *Xiuquan Cheng* | **Research on the residual stress distribution of aircraft engine blades repaired by laser shock peening and laser cladding composite process**<br>*Xiuquan Cheng, Junhao Zhang, Ruhao He, Gangfeng Xiao, Qinxiang Xia* |

| **Páteo da Galé - Praça do Comércio** | **June 3** |
|---|---|
| 20:00 - 23:00 | **Conference Dinner** |

# Wednesday, **June 4**

| **Main Auditorium** | | **KEYNOTE LECTURES IV** |
|---|---|---|
| **June 4** (09:00 - 10:00) | | Chairman: ***Marta Oliveira*** |
| **TIME** | **PRESENTING AUTHOR** | **TITLE** |
| 09:00 - 09:30 | *Mathias Liewald* | **Advancing Sheet Metal Characterization: The Need for further Standardized Testing Procedures**<br>*Mathias Liewald, University of Stuttgart, Germany* |
| 09:30 - 10:00 | *Vasco Burguete* | **Research and Development at JDEUS**<br>*Vasco Burguete, JDEUS/DENSO, Portugal* |
| 10:00 - 10:30 | *Coffee Break* | |

| **Main Auditorium** | | | Parallel Session: **Sensors** |
|---|---|---|---|
| **June 4** (10:30 - 12:10) | | | Chairman: ***Joseba Mendiguren*** |
| **TIME** | **ID** | **PRESENTING AUTHOR** | **TITLE** |
| 10:30 | **01092** | *Lander Galdos* | **Novel approaches for in-line draw-in measurement using cost effective tactile sensors**<br>*Lander Galdos, Laura Muñiz, Javier Trinidad, Andoitz Aranburu, Julian Ramirez Okariz, Aratz Barandiaran* |
| 10:50 | **01091** | *Dietmar Friesen* | **Investigation into noise emission reduction of a cutting press via active vibration control**<br>*Dietmar Friesen, Dennis Schmiele, Richard Krimm, Bernd-Arno Behrens* |
| 11:10 | **01057** | *Peter Scholz* | **Contributions to increasing the accuracy and reducing the forming forces of robot-based two-point incremental forming**<br>*Peter Scholz, Dieter Weise, Alexander Pierer, Christian Naumann, Martin Dix, Marina Terlau, Axel von Freyberg, Andreas Fischer* |
| 11:30 | **01050** | *Karl Johann Tilly* | **Development of a soft sensor for determining the cooling rate for press hardening of medium manganese steel**<br>*Karl Johann Tilly, Emad Scharifi, David Bailly* |
| 11:50 | **01088** | *Thomas Werner* | **Investigation of a test rig based on smart vision sensors for automated inspection of press-hardened automotive body components**<br>*Fabio Simon, Thomas Werner, Andreas Weidemann, Christina Guilleaume, Alexander Brosius* |

| **Room 02.1** | | | Parallel Session: **Processes III** |
|---|---|---|---|
| **June 4** (10:30 - 11:50) | | | Chairman: ***Gianfranco Palumbo*** |
| **TIME** | **ID** | **PRESENTING AUTHOR** | **TITLE** |
| 10:30 | **01043** | *Haruki Sato* | **New sequential forming process involving single-forming machine for hat cross-sectional panels with various in-plane curvatures**<br>*Haruki Sato, Eiichi Ota, Minami Fujimura, Yasumoto Sato, Masatoshi Sawamura, Atsushi Mikuni, Shigeru Inamori, Noriyuki Ueno* |
| 10:50 | **02033** | *Yi-Chun Chen* | **Application of cold stamping process with 1500 MPa ultra-high-strength steel for aftermarket bumper**<br>*Yi-Chun Chen, Wan-Ling Chen, Chun-Kai Lin, Yi-Kai Lin, Yu-Lien Li* |
| 11:10 | **01084** | *Olaf Schrage* | **High-speed blanking and its potential for producing ultra-high-strength automotive safety components**<br>*Olaf Schrage, Roald Lingbeek, Priidu Peetsalu, Marlon Hahn, Hamed Dardaei Joghan, Yannis P. Korkolis, A. Erman Tekkaya* |
| 11:30 | **01068** | *Nico Kellenbenz* | **Springback compensation of symmetrical and quasi-symmetrical sheet metal car body parts**<br>*Arndt Birkert, Nico Kellenbenz, Philipp Zimmermann, Felix Lepple* |
| 11:50 | **-** | *Unai Ibarretxe* | **Localized and contactless rheological characterization of high-strength aluminum alloys for enhanced simulation accuracy in lightweight automotive manufacturing**<br>*Unai Ibarretxe, David Abedul, Unai Argarate, Andoitz Aranburu, Aitor Ormaetxea, Monica Carranza, Nagore Otegi, Eneko Saenz de Argandoña, Lander Galdos* |

| **Room 02.2** | | | Parallel Session: **Artificial Intelligence I** |
|---|---|---|---|
| **June 4** (10:30 - 12:10) | | | Chairman: ***Carlos Alves Silva*** |
| **TIME** | **ID** | **PRESENTING AUTHOR** | **TITLE** |
| 10:30 | **01090** | *Pascal Heinzelmann* | **A comprehensive benchmark dataset for sheet metal forming: advancing machine learning and surrogate modelling in process simulations**<br>*Pascal Heinzelmann, Sebastian Baum, Kim Rouven Riedmüller, Mathias Liewald, Michael Weyrich* |
| 10:50 | **01071** | *Daniel Cruz* | **Application of recurrent neural networks in uncertainty analysis of sheet metal forming**<br>*Daniel Cruz, Tomás Parreira, Armando Marques, Pedro Prates, Marta Oliveira, Diogo Neto, Abel Santos, Rui Amaral, Manuel R. Barbosa, André Pereira* |
| 11:10 | **01041** | *Florian Göltl* | **Advances in neural network assisted tool pressure prediction**<br>*Florian Göltl, Felix Harst, Arndt Birkert, Nicolaj Stache* |
| 11:30 | **02038** | *Yoshinori Yoshida* | **Automatic identification of critical damage value with in-situ shearing test and notched plate tensile test with image analysis**<br>*Yoshinori Yoshida, Asuka Kutsukake* |
| 11:50 | **02011** | *Margarida Gralha* | **Development of a machine learning algorithm for geometric compensation of single point incremental forming (SPIF) process**<br>*Margarida Gralha, João Magrinho, João Sousa, Maria Beatriz Silva* |

| **Room 01.1** | | | Parallel Session: **Formability IV** |
|---|---|---|---|
| **June 4** (10:30 - 12:10) | | | Chairman: ***Pasi Peura*** |
| **TIME** | **ID** | **PRESENTING AUTHOR** | **TITLE** |
| 10:30 | **01006** | *Gabriela Vincze* | **The effect of strain rate sensitivity on the prediction of the formability of advanced high-strength steels**<br>*Marilena Butuc, Toni Chezan, Gabriela Vincze* |
| 10:50 | **01059** | *K. Narasimhan* | **Strain path influence on formability and microstructural evolution of IFHS steel via miniature LDH test**<br>*Pavan Kumar, Peeyush Mahajan, Sushil Mishra, Rahul Datta, K. Narasimhan* |
| 11:10 | **02006** | *Konrad Perzynski* | **Numerical analysis of crack evolution in PVD-deposited TiN-coated steel sheets under loading conditions**<br>*Konrad Perzynski, Lukasz Madej* |
| 11:30 | **02039** | *Johan Pilthammar* | **An application of crystal plasticity to predict forming limit curve of dual-phase steels with validation**<br>*Kiranmayi Abburi Venkata, Rohith Uppaluri, Johan Pilthammar, Renaud Gutkin* |
| 11:50 | **01073** | *Pekka Plosila* | **An investigation on behaviour of 800 MPa grade hot-rolled steels in interrupted ISO 16630 hole expansion testing**<br>*Pekka Plosila, Raimo Vierelä, Päivi Juntunen, Vili Kesti, Jukka Kömi, Antti Kaijalainen* |

| 12:10 - 14:30 | *Lunch - **Holiday Inn Hotel*** |
|---|---|

# Wednesday, **June 4**

| **Main Auditorium** | | **KEYNOTE LECTURES V** |
|---|---|---|
| **June 4** (14:30 - 15:00) | | Chairman: ***Beatriz Silva*** |
| **TIME** | **PRESENTING AUTHOR** | **TITLE** |
| 14:30 – 15:00 | *Shihong Zhang* | **Formability improvement and spring back reduction of light metal sheets at high ultra-high strain rates**<br>*Shihong Zhang, Institute of Metal Research, Chinese Academy of Sciences, China* |

| **Main Auditorium** | | | Parallel Session: **Artificial Intelligence II** |
|---|---|---|---|
| **June 4** (15:00 - 16:20) | | | Chairman: ***Mohammad Mehdi Kasaei*** |
| **TIME** | **ID** | **PRESENTING AUTHOR** | **TITLE** |
| 15:00 | **01045** | *Purnendu Das* | **Parametric evaluation and predictive modelling of formability in μ-SPIF process**<br>*Vijay Kumar Sahu, Purnendu Das, Avishek Adhikary, Kaushik Bandyopadhyay* |
| 15:20 | **01087** | *Koki Komatsu* | **An evolutionary algorithm-based numerical material testing system based on a crystal plasticity finite element model**<br>*Koki Komatsu, Tetsuo Oya* |
| 15:40 | **01023** | *Pedro Prates* | **Limitations of XGBoost in predicting material parameters for complex constitutive models**<br>*Pedro Prates, Dário Mitreiro, António Campos* |
| 16:00 | **01015** | *Eiichi Ota* | **Data-driven approach for extracting steady-state data from unsteady-state flow stress without material modelling**<br>*Eiichi Ota, Minami Fujimura, Yasumoto Sato* |

| **Room 02.1** | | | Parallel Session: **Treatments** |
|---|---|---|---|
| **June 4** (15:00 - 16:20) | | | Chairman: ***João Pragana*** |
| **TIME** | **ID** | **PRESENTING AUTHOR** | **TITLE** |
| 15:00 | **02009** | *Yuqiang Chen* | **The effects of cyclic-strengthening interrupted aging on the microstructure evolution and stress corrosion resistance of aluminum alloy**<br>*Yuqiang Chen, Guanglin Ran, Dingding Lu, Yufeng Song, Qian Zhi* |
| 15:20 | **02019** | *Kuokuo Sun* | **Simultaneously improving strength, ductility and formability in 2195 Al-Li alloy components via pre-aging treatment**<br>*Kuokuo Sun, Mei Zhan, Xiaoguang Fan* |
| 15:40 | **02010** | *Maria Beatriz Silva* | **Impact of aluminium ageing in an industrial stamping process**<br>*Margarida Teixeira, João Magrinho, Paulo Sousa, Nuno Ferreira, Vitor Pereira, António Borges, Filipe Diogo, Carlos Saraiva, Maria Beatriz Silva* |
| 16:00 | **02032** | *Uday Chakkingal* | **Modification of hole expansion ratios of dual phase steels by hole edge thermal treatment**<br>*Aman Mohtta, Murugaiyan Amirthalingam, Uday Chakkingal* |

| **Room 01.1** | | | Parallel Session: **Formability V** |
|---|---|---|---|
| **June 4** (15:00 – 16:20) | | | Chairman: ***Krishnaiyengar Narasimhan*** |
| **TIME** | **ID** | **PRESENTING AUTHOR** | **TITLE** |
| 15:00 | **02037** | *Gihak Yim* | **The effect of retained austenite stability on the formability of third generation advanced high strength steel**<br>*Gihak Yim, Hyejin Kim, Seungpill Jung, Jinhwa Jeon, Joosik Hyun* |
| 15:20 | **02017** | *Xueyang Li* | **An engineering approximation on the transformation of plastic work into heat at various strain rates and stress states**<br>*Xueyang Li, Christian C. Roth, Vincent Grolleau, Dirk Mohr* |
| 15:40 | **01014** | *Joern Wehmeyer* | **Reinforcement of fibre-reinforced plastic components using metal inserts**<br>*Bernd-Arno Behrens, Sven Hübner, Jan-Ulrich Gellermann, Joern Wehmeyer* |
| 16:00 | **01046** | *Dennis Albers* | **Experimental evaluation of a feature based bipolar plate forming approach in a hybrid tool**<br>*Dennis Albers, Karl Ngondji, Florian Hüsing, Christian Brecher* |

| 16:20 - 16:40 | *Coffee Break* |
|---|---|

| **Main Auditorium** | **June 4** |
|---|---|
| 16:40 - 17:30 | **Closing Ceremony** |

## Thursday, **June 5**

| **Hotel Holiday Inn** | **June 5** |
|---|---|
| 08:30 | Bus Departure from Hotel Holiday Inn to MCG - Mind for Metal and JDEUS |
| 13:00 | Bus Departure from MCG - Mind for Metal and JDEUS to Hotel Holiday Inn |
| 14:00 | Arrival at Hotel Holiday Inn |