



October 19-21, 2026

76TH WORLD FOUNDRY CONGRESS

PROGRAM
BOOK

Hilton Istanbul Bomonti
Hotel & Conference Center,
Istanbul-Türkiye



THE GLOBAL FOUNDRY INDUSTRY

MEETS IN ISTANBUL!

76th WORLD FOUNDRY CONGRESS



19-21 OCTOBER 2026

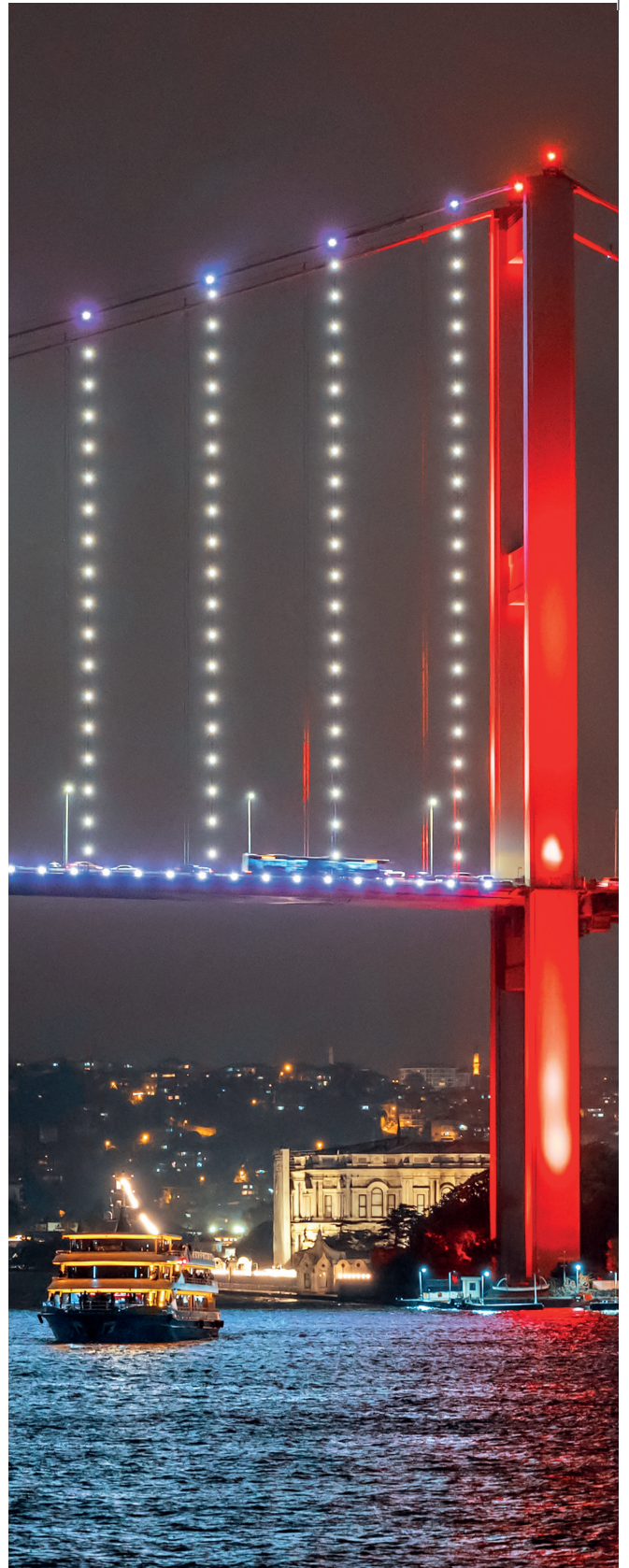


HILTON ISTANBUL BOMONTI



The global foundry industry
is coming together **in Istanbul.**

www.76wfc.com



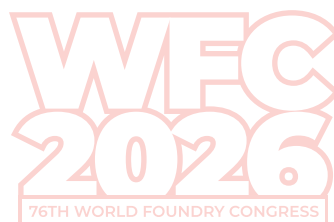
50
YEARS



See You **in Istanbul!**

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WELCOME MESSAGE



Oğuzhan DENİZ

Chairman of the Board,
TÜDÖKSAD



Dear Distinguished Guests and Members of the Global Foundry Community,

It is my great pleasure and honor to welcome you to Istanbul for the 76th World Foundry Congress, hosted by the Turkish Foundry Association (TÜDÖKSAD).

Welcoming the global foundry community to Türkiye once again is both a privilege and a source of great pride for us. The World Foundry Congress last came to Istanbul in 2004, and its return 22 years later makes this gathering particularly meaningful. Some of you may remember the Congress we hosted here more than two decades ago; for others, this will be your first World Foundry Congress in Istanbul. We are delighted to welcome you all.

The timing of this reunion could hardly be more symbolic. In 2026, the World Foundry Organization celebrates its 100th anniversary, while TÜDÖKSAD proudly marks its 50th year. Together, these milestones represent generations of knowledge, entrepreneurship, cooperation, and dedication to an industry that has played an essential role in industrial development around the world.

For TÜDÖKSAD, our 50th anniversary is also a moment to reflect on the remarkable progress of the Turkish foundry industry. Over the past five decades, our sector has developed into a strong and internationally connected part of Türkiye's manufacturing industry, with Turkish foundries today contributing to global value chains and serving industries and markets around the world. We are proud to share this experience with the international foundry community as we welcome you once again to our country.

But milestones are not only about looking back. They are also about deciding what comes next.

Under the theme "A Bright New Century: Shaping the New Ecosystem," WFC 2026 brings us together at the beginning of a new chapter. As the WFO enters its second century and TÜDÖKSAD begins its next fifty years, we have an opportunity to ask not only how our industry will change, but also what role we want to play in shaping that change.

The foundry industry has always advanced through knowledge, experience, innovation, and cooperation. Today, progress increasingly depends on our ability to work across borders, generations, disciplines, and organizations. A World Foundry Congress is therefore much more than a professional gathering. It is an opportunity to exchange perspectives, renew longstanding relationships, create new ones, and strengthen the international cooperation that has always been at the heart of our community.

Istanbul provides a perfect setting for this exchange. For centuries, the city has brought together continents, cultures, commerce, and ideas. Twenty-two years after our last World Foundry Congress here, it once again brings together the global foundry community. We hope that, alongside the professional and scientific programme, you will have the opportunity to experience the history, energy, culture, and hospitality that make Istanbul so unique.

On behalf of TÜDÖKSAD, I would like to express my sincere appreciation to the World Foundry Organization, the Organizing and Scientific Committees, our speakers and authors, sponsors, exhibitors, partners, volunteers, and everyone whose dedication has made this Congress possible.

Most importantly, I would like to thank each of you for being here. A congress ultimately derives its value from the people who participate in it — from the knowledge they share, the questions they ask, the conversations they begin, and the relationships they carry forward.

As we celebrate 100 years of the WFO, 50 years of TÜDÖKSAD, and the return of the World Foundry Congress to Istanbul after 22 years, I hope that WFC 2026 will be remembered not only as a celebration of our shared history, but also as a gathering where new ideas were exchanged, new partnerships were formed, and a new chapter for our industry began.

I wish you an inspiring and productive Congress, meaningful conversations, lasting connections, and a memorable stay in Istanbul.

Welcome to Istanbul. Welcome to the 76th World Foundry Congress.

WELCOME MESSAGE



Dr. Arda Çetin

Chairman of the
Organizing Committee

Co-Chairman of the
Scientific Committee

76th World Foundry
Congress



A Bright New Century: Shaping the New Ecosystem

Distinguished Guests, Esteemed Colleagues, Ladies and Gentlemen,

On behalf of the Organizing Committee and the Scientific Committee, it is my distinct honor and privilege to extend a warm welcome to all participants, researchers, industry leaders, and delegates from around the globe to the 76th World Foundry Congress (WFC 2026) in Istanbul.

We gather at a momentous historical juncture. The global industrial landscape is experiencing unprecedented volatility, reshaped by shifting geopolitical balances, supply chain realignments, and accelerating macroeconomic uncertainties. The classical industrial paradigms that governed casting manufacturing for the past century are no longer sufficient to address today's complex challenges. Traditional frameworks are reaching their limits; operational efficiency alone can no longer guarantee resilience, and isolated technological incrementalism is no longer enough to secure sustainable growth.

We are witnessing a major paradigm shift: One driven not only by rapid technological evolution, but also by sweeping global regulations, rigorous environmental standards, and the urgent imperative of decarbonization. Regulatory shifts across the globe are demanding a fundamental structural transformation in how we source materials, utilize energy, manage resources, and design casting processes.

Yet, it is precisely in times of great uncertainty that humanity discovers its greatest opportunities for renewal. Beyond these disruptions lies a new dawn. Embracing our central theme, "A Bright New Century: Shaping the New Ecosystem," this Congress serves as a vital global platform to define, build, and navigate this new industrial reality. We do not look to the future with apprehension, but with profound hope and active determination.

Creating this new ecosystem requires a holistic synthesis of science, engineering, and commercial strategy. The scientific program of the 76th WFC brings together cutting-edge research, groundbreaking metallurgical advances, digital twin and AI integrations, low-carbon casting technologies, and innovative sustainable developments. Simultaneously, our congress offers a space where industry pioneers, academics, and policymakers can bridge theoretical innovation with high-impact industrial applications.

Istanbul; a timeless bridge between continents, cultures, and civilizations, provides the ideal backdrop for this collective endeavor. Just as this historic city has connected worlds for centuries, the 76th World Foundry Congress brings together the worldwide foundry community to foster international cooperation, facilitate knowledge transfer, and cultivate young engineering talent.

I would like to express my deepest gratitude to the World Foundry Organization (WFO), the members of the Organizing and Scientific Committees, our generous sponsors, session chairs, authors, and international delegations whose dedication and intellectual contributions have made this landmark event possible.

I invite each of you to engage deeply in our technical sessions, participate in constructive dialogues, build lasting partnerships, and actively contribute to shaping the future of our industry. Together, we shall build a resilient, sustainable, and technologically empowered ecosystem for generations to come.

Welcome to Istanbul, and welcome to the 76th World Foundry Congress.

Warmest regards,

WELCOME MESSAGE



Prof. Dr. Özgül Keleş

Co-Chairman of the
Scientific Committee



Dear Members of the Global Foundry Community,

It is our ultimate privilege and great pleasure to welcome you to the 76th World Foundry Congress (WFC 2026), held in the historic and vibrant city of Istanbul, Türkiye, from October 19–21, 2026.

This year's congress carries profound historical significance. Organized by the Turkish Foundry Association (TÜDÖKSAD) under the umbrella of the World Foundry Organization (WFO), this gathering marks two momentous celebrations: the 100th anniversary of the WFO and the 50th anniversary of TÜDÖKSAD. For one week, Istanbul stands proudly as the global capital of metal casting, bridging continents, generations, and ideas.

Our theme, "A Bright New Century: Shaping the New Ecosystem," perfectly encapsulates the era we are living in. Throughout human history, the foundry sector has been the silent engine behind civilization, turning raw materials into the very foundation of global progress. Today, as we stand on the brink of a new revolution driven by Artificial Intelligence, machine learning, and robotics, we face a vital question: How will we work alongside our own creations?

While smart technologies optimize our industries, casting remains an irreplaceable human masterpiece. Software and code are powerful, but they require human strategic decision-making to reshape the physical world.

This Program Book reflects that brilliant intersection of heritage and high-tech and serves as your guide throughout WFC 2026. The Congress brings together more than 300 technical studies across 14 cutting-edge thematic areas—ranging from advanced cast iron technologies and additive manufacturing to smart foundries and critical ESG strategies such as CBAM and the circular economy.

We are also deeply honored to feature visionary plenary lectures from world-renowned pioneers—Prof. Dr. Hiroshi Ishiguro, Prof. Dr. Mark Miodownik, Prof. Dr. Primož Mrvar, Prof. Dr. Ruirun Chen, and Prof. Dr. Ömer Şahin Ganiyusufoğlu—who will guide us from the ancient roots of casting to the sci-fi reality of humanoid robots in modern foundries.

Furthermore, investing in our future means uplifting young talent today. We are thrilled to host the 3rd Young Researchers Conference within this program, spotlighting the next generation of foundry leaders and recognizing outstanding contributions through the Young Researcher and Best Poster Awards.

An event of this monumental scale is a massive collaborative effort. We extend our deepest gratitude to the WFO Executive, Organizing, and Scientific Committees for their invaluable leadership, and to our global sponsors and partners for their vital support.

As you explore the scientific and technical sessions, exchange ideas with colleagues from around the world, visit the ANKIROS Exhibition, and take part in our social events, cultural tours, and plant visits, we hope you find inspiration to write the next exciting chapter of industrial history. Together, by uniting the power of cast metals with the minds of tomorrow, we will help build a resilient and sustainable future for generations to come.

We sincerely hope that you actively participate in all sessions, engage in productive discussions, and cast new international collaborations that will shape the future of our industry. May this congress be a foundry for continuous innovation and enduring partnerships.

Welcome to Istanbul, and welcome to WFC 2026.

Best regards,

76th World Foundry Congress

19-21 October 2026



Our Congress Sponsors

DIAMOND



PLATINUM



GALA



FOUNDRY NIGHT



GOLD



SILVER



BRONZE



NAME BADGE



LUNCH



COFFEE BREAK



WI-FI



Sponsors

The success of WFC 2026 is made possible through the valuable support of organizations and companies contributing to the advancement of the global foundry industry.



ORGANIZATION

The year 2026 is not just a calendar year for the foundry sector, but a symbolic period where deep historical accumulation, shared values, and forward-looking global vision come together. The **Turkish Foundry Industrialists Association (TÜDÖKSAD)**, the strongest representative of Türkiye's foundry sector, celebrates both its own 50th anniversary and the 100th anniversary of the **World Foundry Organization (WFO)**, the global umbrella organization of the sector, in this special year.

In this meaningful year, the **76th World Foundry Congress**, to be organized by **TÜDÖKSAD** under the WFO umbrella and with its global network support, will bring together the sector's global knowledge and technological vision in Istanbul; it will establish a strong connection between the past and the future. TÜDÖKSAD, as the host of the organization, aims to introduce Türkiye's foundry industry power to the world, while **WFO** aims to carry its century-old accumulation to the future with next-generation solutions and collaborations.

World Foundry Organization (WFO)

Founded in 1926, the World Foundry Organization (WFO) is the highest-level representative body of the foundry sector on a global scale. This international platform, which brings together foundry associations from more than 30 countries, has a structure that promotes knowledge sharing without profit motive, supports scientific research, disseminates technological developments throughout the sector, and leads the global integration of the foundry industry.

Throughout its century-long history, WFO has been not only an institution that transfers technical knowledge but also an international cooperation platform where sectoral solidarity, innovation, and sustainability goals are shared. WFO, which aims to provide equal access to all stakeholders by bringing together developed and developing economies under the same roof, works in cooperation with universities, research centers, and the private sector.

The World Foundry Congress, one of WFO's most prestigious events, is held every two years under the auspices of a different member country and monitors the pulse of the sector's technical, academic, and strategic development. The organization of this important congress in Istanbul under TÜDÖKSAD's auspices in 2026, on the 100th anniversary of its establishment, will represent a historic meeting and a meaningful milestone.

HOST

Turkish Foundry Industrialists Association (TÜDÖKSAD)

Founded in 1976, the Turkish Foundry Industrialists Association (TÜDÖKSAD) is the most competent and comprehensive sectoral organization that unites the Turkish foundry sector under one roof. The association represents all actors of the sector, from foundry producers to suppliers, from engineering companies to consulting services. Throughout its history, TÜDÖKSAD has been not only a professional organization but also a strategic vision center that guides sectoral transformation.

TÜDÖKSAD's main mission is to increase the international competitiveness of the Turkish foundry industry, disseminate knowledge and technology-based production, support the transition to environmentally friendly and sustainable production models, and strengthen qualified workforce in the sector. In this direction, it operates in many areas such as technical publications, workshops, domestic and international fair organizations, university-industry collaborations, sectoral training programs, and legislation development studies.

Today, TÜDÖKSAD hosts a strong industrial network representing approximately 90% of Türkiye's foundry production and continues to pursue its vision of making the Turkish foundry sector one of Europe's leading production centers with determination.

Organizer

COMMITTEES

Scientific Committee

| Domestic Scientific Committee

Ahmet Özel	Türkiye	Ender Keskinliç	Türkiye	Mehmet Ataseven	Türkiye
Ahmet Turan	Türkiye	Engin Açıkalin	Türkiye	Mehmet Hakan Morcalı	Türkiye
Alaaddin Gündeş	Türkiye	Erkin Koç	Türkiye	Mert Zorağa	Türkiye
Ali Günen	Türkiye	Erman Car	Türkiye	Mertol Gökelma	Türkiye
Ali Kalkanlı	Türkiye	Fatih Güler	Türkiye	Metehan Erdoğan	Türkiye
Ali Serdar Vanlı	Türkiye	Fatih Toptan	Türkiye	Muhammet Uludağ	Türkiye
Arcan Dericioğlu	Türkiye	Ferhat Gül	Türkiye	Murat Alkan	Türkiye
Arda Kocaman	Türkiye	Gökhan Orhan	Türkiye	Mustafa Koçak	Türkiye
Başar Öztayşi	Türkiye	Gültekin Goller	Türkiye	Necip Ünlü	Türkiye
Billur Deniz Karahan	Türkiye	Hakan Gür	Türkiye	Onur Şahin	Türkiye
Bülent Şirin	Türkiye	Hasan Erdem Çamurlu	Türkiye	Onuralp Yücel	Türkiye
Can Akyıl	Türkiye	Hasan Hasırcı	Türkiye	Servet Turan	Türkiye
Cem Örnek	Türkiye	Hüsnüye Fırat	Türkiye	Sinan Kandemir	Türkiye
Cevdet Özdoğan	Türkiye	Irmak Sargın	Türkiye	Süleyman Can Kurnaz	Türkiye
Çağlar Yüksel	Türkiye	Kemal Davut	Türkiye	Tuğçe Yağcı	Türkiye
Ekrem Altuncu	Türkiye	Kerem Altuğ Güler	Türkiye	Uğur Gürol	Türkiye
Elvan Arman	Türkiye	Kürşat Kazmanlı	Türkiye	Volkan Kılıçlı	Türkiye
Emel Taban	Türkiye	Levent Cenk Kumruoğlu	Türkiye	Yunus Türen	Türkiye
Emrehan Söylemez	Türkiye	M. Kadri Aydınol	Türkiye		

| International Scientific Committee

Jiehua Li	Austria	Xixi Dong	China	Paweł Malinowski	Poland
Menghuai Wu	Austria	Yajun Yin	China	Rafał Cygan	Poland
Carlos Olabe	Belgium	Yang Yang	China	Rafał Dańko	Poland
Florian Kongoli	Canada	Ye Liu	China	Iulian Riposan	Romania
Mihriban Pekgülyuz	Canada	Ying Xiong	China	Wentao Yan	Singapore
Baode Sun	China	Yuzeng Chen	China	Patxi Rodríguez	Spain
Bin Jiang	China	Zdenka Zovko Brodarac	Croatia	Anders Jarfors	Sweden
Gang Qin	China	Monika Vitvarova	Czech Republic	Attila Diószegi	Sweden
Guoliang Zhu	China	Vladimír Krutiš	Czech Republic	Lennart Elmquist	Sweden
Haidong Zhao	China	Niels Skat Tiedje	Denmark	Arron Rimmer	UK
Hongze Fang	China	Babette Tonn	Germany	John Campbell	UK
Hua Hou	China	Ingo Ederer	Germany	Lynn Postle	UK
Huasheng Xie	China	Gábor Gyarmati	Hungary	Shouxun Ji	UK
Ji Xiaoyuan	China	János Erdélyi	Hungary	Alan Aihua Luo	USA
Jianxin Zhou	China	Goutam Sutradhar	India	Demet Tatar	USA
Jiao Zhang	China	Onur Ertuğrul	Ireland	Diran Apelian	USA
Jieren Yang	China	Lisa Biasetto	Italy	Doru M. Stefanescu	USA
Jin Lei	China	Taner Akbay	Japan	Fatih G. Şen	USA
Jun Wang	China	Derya Dişpınar	Norway	Kadri Can Atli	USA
Jun Wang	China	Angelika Kmita	Poland	Matthew Kramer	USA
Liu Jiguang	China	Dawid Myszk	Poland	Murat Tiryakioğlu	USA
Liu Weiwei	China	Dorota Wilk-Kotodziejczyk	Poland	Stephen Midson	USA
Qingyan Xu	China	Jan Jezierski	Poland	Taylor D. Sparks	USA
Qin Xu	China	Jarosław Piątkowski	Poland	Thomas Prucha	USA
Ruirun Chen	China	Jerzy J. Sobczak	Poland		
Wenming Jiang	China	Marcin Górny	Poland		

COMMITTEES

Organizing Committee

| Domestic Organizing Committee

Oğuzhan Deniz

Chairman Türkiye

Kadir Efe

Immediate Past Chairman Türkiye

Arda Çetin

Organizing Committee Chairman and Vice Chairman Türkiye

Mehmet Ali Acar

Vice Chairman Türkiye

Ali Esat Kutmangil

Executive Member and Treasurer Türkiye

Uğur Demirci

Executive Member Türkiye

Hülya Gedik

Executive Member Türkiye

Ekrem Kanıtoğlu

Executive Member Türkiye

Teoman Paçacı

Executive Member Türkiye

Şükrü Keçebir

Executive Member Türkiye

Mehmet Rifat Özalp

Executive Member Türkiye

Cenk Denizci

Executive Member Türkiye

Özgür Aykut

Executive Member Türkiye

Fatih İğrek

Executive Member Türkiye

Mustafa Öner Şekerci

Executive Member Türkiye

Tunçağ Cihangir Şen

Secretary General TUDÖKSAD Türkiye

Seyhan Tangül Yılmaz

Administrative Manager TUDÖKSAD Türkiye

Fikri Karaca

Corporate Communications Specialist TUDÖKSAD Türkiye

Ezgi Kula

Business Development Specialist TUDÖKSAD Congress Secretariat Türkiye

Seyfi Değirmenci

TUDÖKSAD Academy Consultant Türkiye

| International Organizing Committee

Huasheng Xie	China	Katarzyna Liszka	Poland	Marina Giacopinelli	Spain
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WFO Executive Committee

Professor Rafal Danko

Vice President Poland

Xabier Gonzalez Azpiri

Treasurer Spain

Vladimír Krutiš

Executive Member Czech Republic

Brad Muller

Executive Member USA

Professor Kazumichi Shimuzu

Executive Member Japan

Katarzyna Liszka

Executive Secretary Poland

Guillaume Allart

Executive Member France

Carsten Kuhlitz

Immediate Past President Germany

Lee Jenkins

Executive Member United Kingdom

Professor Yanchun Lou

President China

Seung Mok Yoo

Executive Member South Korea

José Javier Gonzalez

Secretary General Spain

Andrew Turner

Executive Secretary United Kingdom

USEFUL INFORMATION

CONGRESS AT A GLANCE

DATES: 19–21 October 2026

VENUE: Hilton Istanbul Bomonti Hotel & Conference Center

www.76wfc.com

22 OCTOBER 2026-THURSDAY

ALL DAY-Post-Congress Visit to Ankiros Fair

23 OCTOBER 2026-FRIDAY

ALL DAY-Technical Plant Visits

24 OCTOBER 2026-SATURDAY

ALL DAY-Post-Congress Tours

REGISTRATION DESK

Location: M4 Floor

Opening Hours: 18–21 October 2026 | 09:00–18:00

Note: Your name badge can be collected from the Registration Desk.

CONGRESS ORGANIZER OFFICE

Location: M4 Floor **Opening Hours:** 19–21 October 2026 | 09:00–17:00

E-mail: secretary@76wfc.com

Note: For assistance during the Congress, please visit the Congress Organizer Office or contact the Congress Secretariat.

PRESENTATION INFORMATION

Regular Oral Presentations: 20 minutes (15 min presentation + 5 min Q&A)

Invited Talks: 25 minutes (20 min presentation + 5 min Q&A)

Presentation Format: 16:9 PowerPoint format

POSTER SESSION

Date & Time: Wednesday, 21 October 2026 | 14:00–15:20

Location: M2 Foyer Area **Poster Size:** 70 cm (W) × 100 cm (H), portrait orientation

Note: Poster presenters are requested to remain by their posters during the session. Posters will be evaluated by the reviewers for the Best Poster Award.

DIGITAL ABSTRACT BOOK

Access all abstracts presented at the 76th World Foundry Congress. Scan the QR code to view the WFC 2026 Abstract Book.



SOCIAL EVENTS

GALA DINNER

Date: Monday, 19 October 2026

Location: Hilton Istanbul Bomonti

FOUNDRY NIGHT

Date: Wednesday, 21 October 2026

Location: A historical venue in Istanbul



PROGRAM

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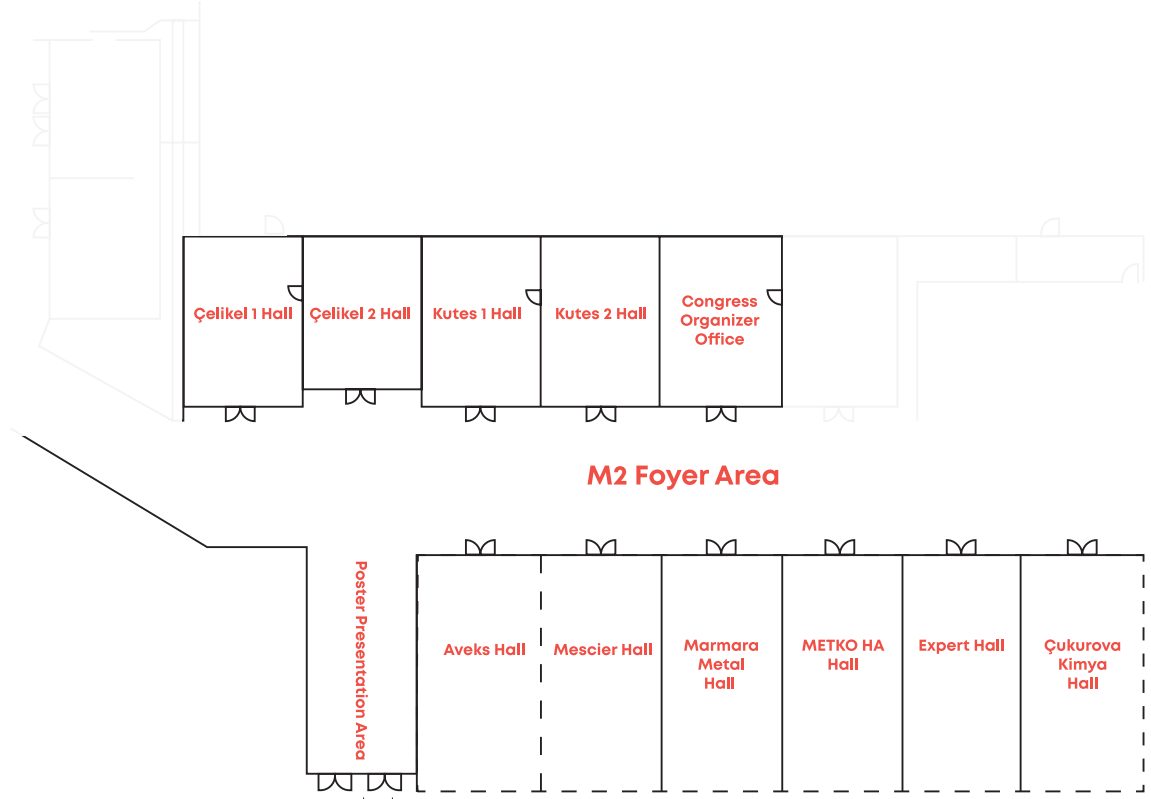
Program at a Glance

18 OCTOBER 2026 SUNDAY	 Morning Session Registration	 Noon -	 Afternoon Session Registration WFO Executive Meeting and General Assembly	 Evening Program WFO Associations Cocktail
19 OCTOBER 2026 MONDAY	 Morning Session Registration & Welcome Coffee Opening Ceremony Plenary Session 1	 Noon Lunch	 Afternoon Session Plenary Session 2	 Evening Program Gala Dinner (WFO Centenary & TUDÖKSAD 50th Anniversary Celebration)
20 OCTOBER 2026 TUESDAY	 Morning Session Parallel Technical Sessions WFO Young Researchers Conference Accompanying Persons Program (Optional)	 Noon Lunch Accompanying Persons Program (Optional)	 Afternoon Session Parallel Technical Sessions	 Evening Program No Official Program (Evening at Leisure)
21 OCTOBER 2026 WEDNESDAY	 Morning Session Parallel Technical Sessions Accompanying Persons Program (Optional)	 Noon Lunch	 Afternoon Session Poster Sessions Closing and Awards Ceremony Press Conference	 Evening Program Foundry Night Dinner
22 OCTOBER 2026 THURSDAY	ALL DAY Post-Congress Visit to Ankiros Fair			
23 OCTOBER 2026 FRIDAY	ALL DAY Technical Plant Visits			
24 OCTOBER 2026 SATURDAY	ALL DAY Post-Congress Tours			

VENUE LAYOUT

Hilton İstanbul Bomonti Hotel & Conference Center

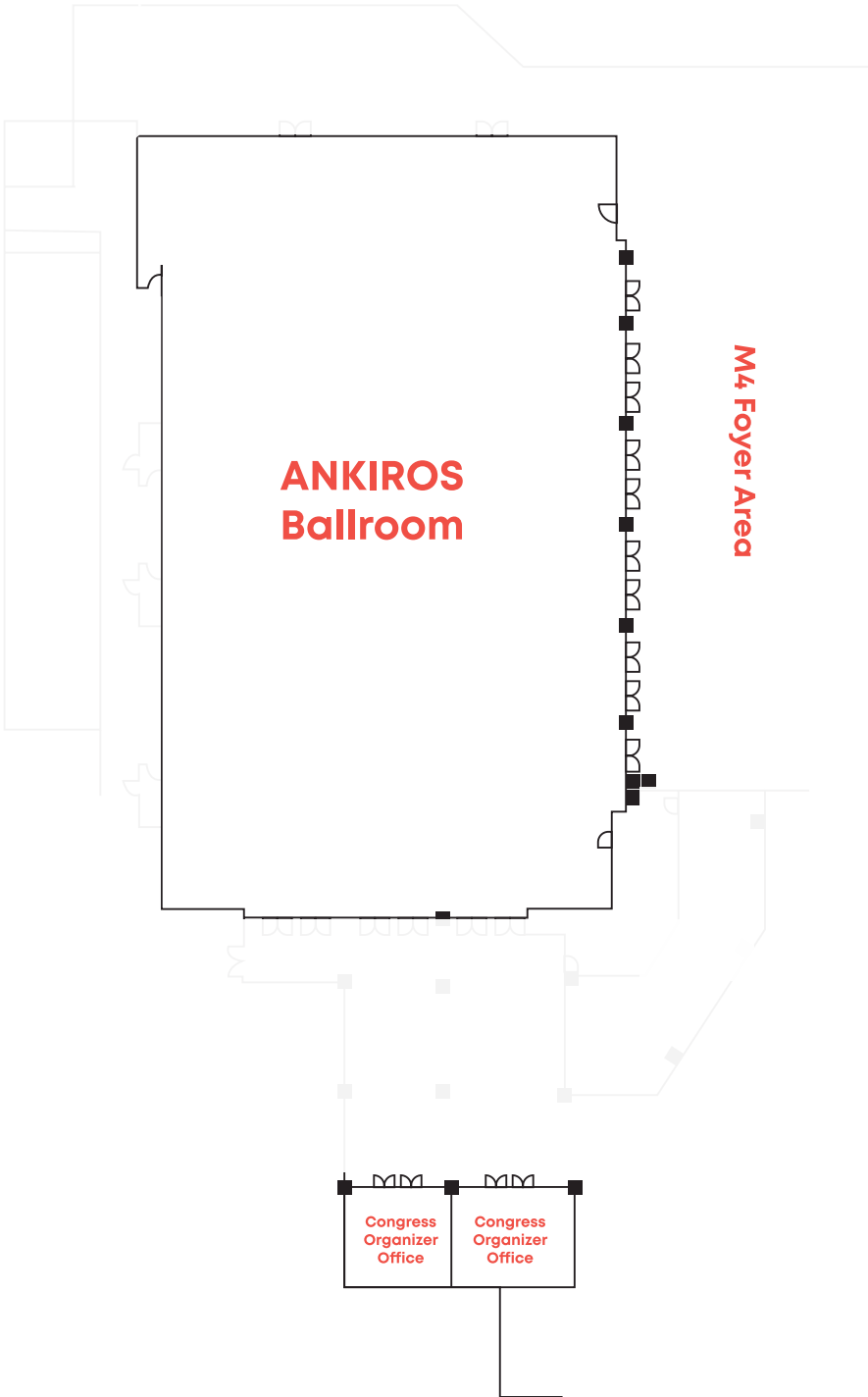
M2 Floor



VENUE LAYOUT

Hilton İstanbul Bomonti Hotel & Conference Center

M4 Floor



CULTURAL EXCURSIONS AND SIGHTSEEING TOURS

Post-Congress Tours

After the 76th World Foundry Congress, join post-congress tours organized by Antonina Tourism to discover Turkey's unique cultural and historical treasures.

Cappadocia: A Journey Beyond Landscapes

Ephesus & Pamukkale Traces of Civilization

Göbeklitepe: Where History Begins

All tours start on Saturday,
24 October 2026.

Istanbul Tours

(Accompanying Persons Program)



TECHNICAL FACILITY VISITS

Within the scope of the 76th World Foundry Congress (WFC 2026), technical plant visits will be organized for delegates who complete congress registration.



Aluminum | Iron | Steel

Route 1

Mes Döküm-Kutes Metal-Demir Dökümhanesi

Route 2

Trakya Döküm-Demir Dökümhanesi

Route 3

Akmetal-Silvan Sanayi-Çelik Dökümhanesi

Route 4

Kalkancı-Çelikel-HPDC Dökümhanesi

Route 5

Döktaş Demir Dökümhanesi

Discover Türkiye's casting industry on-site.

CONGRESS DINNERS

Gala Night: In Honor of WFO's 100th Anniversary and TUDÖKSAD's 50th Anniversary



The year 2026 hosts two extremely significant anniversaries for the foundry industry. The World Foundry Organization (WFO) celebrates its 100th anniversary, while the Turkish Foundry Industrialists Association (TUDÖKSAD) celebrates its 50th anniversary. The long-standing activities of these two established organizations are of great importance not only in terms of sectoral development but also in terms of international technical cooperation and knowledge sharing. Both anniversaries will be officially celebrated within the framework of the 76th World Foundry Congress with a special gala night.

This notable evening is sponsored by Şahinler Metal Sanayi ve Ticaret A.Ş., whose essential support contributes greatly to the successful organization of this key event.



Foundry Night: Meeting Point of Sectoral Solidarity and Cultural Sharing

The Foundry Night, which will be organized within the scope of the 76th World Foundry Congress, is a special event that aims to strengthen social interaction among participants beyond technical sessions. This internationally organized night aims to contribute to strengthening sectoral solidarity by bringing sector representatives from different countries together in a friendly atmosphere.

The organization of the night will be carried out under the sponsorship of Caldeyrys, which operates globally in refractory technologies and provides high added value to the foundry industry. Caldeyrys' support for this meaningful event is considered a concrete indicator of the importance it attaches to the sector's social unity, not limited to its technical contributions.



AWARDS

The **76th World Foundry Congress Awards** recognize outstanding scientific and technical contributions presented during the Congress.

The awards will be presented during the Closing Ceremony on 21 October 2026, celebrating distinguished contributions to the advancement of foundry science, technology and industry.

Award Ceremony



Best Scientific Paper Award

Sponsored by



Best Technical Paper Award

Sponsored by



Best Poster Award

Presented by



Date:
21 October 2026

Time:
16:00–16:30

Location: Grand Ballroom, Hilton Istanbul
Bomonti Hotel & Conference Center

PLENARY SPEAKERS



University College London, United Kingdom

Internationally renowned materials scientist and author.

Award-winning author of the New York Times bestselling book *Stuff Matters*

Prof. Dr. Mark Miodownik

Recipient of the China Friendship Award and 2025 Chinese Culture Ambassador title.



Prof. Dr. Ömer Şahin Ganiyusufoglu



Harbin Institute of Technology, China

Among the world's top 2% most-cited scientists

Prof. Dr. Ruirun Chen

Osaka University, Japan

World-renowned pioneer in robotics and artificial intelligence



Prof. Dr. Hiroshi Ishiguro



University of Ljubljana, Slovenia

Head of the Foundry Research Department

Prof. Dr. Primož Mrvar

CONGRESS TOPICS

76th World Foundry Congress Topic Areas

The 76th World Foundry Congress aims to comprehensively address the most current scientific and technological developments that shape the present and future of the foundry industry.

The congress provides opportunities for knowledge sharing across a wide range of topics, from different metal types to production methods, from digitalization to artificial intelligence applications, from sustainability to advanced material technologies.

Academics, engineers, R&D specialists and industry professionals will have the opportunity to present their work within the framework of the following topics that guide the transformation of the foundry industry.

Congress Topic Areas

Advancements in Cast Iron and Cast Steel Technologies
Advancements in Non-Ferrous Casting: Materials and Processes
Die Casting: Technologies, Challenges, and Future Directions
Precision Casting: Achievements and Emerging Technologies
Molding Materials, Ceramics, and Refractories: Science and Applications
Lean and Agile Manufacturing in Foundries: Optimizing Processes for Efficiency and Cost Reduction
AI and Machine Learning in Foundry Process Optimization
Intelligent Digital Casting and Materials Genome Engineering
Surface Engineering and Heat Treatment of Castings
Additive Manufacturing in Foundries: Materials and Process Innovations
Fabrication and Machining of Cast Materials: Challenges and Advances
Cast Metal Matrix Composites: Design, Processing, and Applications
Smart Foundries: Advancing Efficiency, Productivity, and Innovation
The ESG Imperative: CBAM, Circular Economy, and the Regulatory Future of Foundries

Sunday, 18 October 2026

14:00-16:00	WFO Executive Meeting	MR24 Hall
16:00-18:00	WFO General Assembly	MR25 Hall
19:00-23:00	WFO Executive Cocktail	

Monday, 19 October 2026 DAY 1

09:00-10:00	Registration and Welcome Coffee	ANKIROS Ballroom
10:00-11:00	Opening Ceremony	ANKIROS Ballroom
11:00-11:30	Coffee Break	M4 Foyer Area
11:30-12:00	Plenary Session - Hiroshi Ishiguro	ANKIROS Ballroom
12:00-12:30	Plenary Session - Mark Miodownik	ANKIROS Ballroom
12:30-13:40	Lunch break	M4 Foyer Area
13:40-14:10	Plenary Session - Ömer Şahin Ganiyusufoglu	ANKIROS Ballroom
14:10-14:40	Plenary Session - Ruirun Chen	ANKIROS Ballroom
14:40-15:10	Coffee break	M4 Foyer Area
15:10-15:40	Plenary Session - Primož Mrvar	ANKIROS Ballroom
19:00-23:59	Gala Night: In Honor of WFO's 100th Anniversary and TUDÖKSAD's 50th Anniversary	ANKIROS Ballroom

Tuesday, 20 October 2026 DAY 2

09:00 10:20	 Çukurova Kimya Hall Advancements in Non-Ferrous Casting: Materials and Processes	 Expert Hall Advancements in Non-Ferrous Casting: Materials and Processes	 METKO HA Hall Advancements in Cast Iron and Cast Steel Technologies	 Marmara Metal Hall Advancements in Cast Iron and Cast Steel Technologies
	 Mescier Hall Molding Materials, Ceramics, and Refractories: Science and Applications	 Aveks Hall AI and Machine Learning in Foundry Process Optimization	 Çelikel 1 Hall 3rd Young Researchers Conference	 Çelikel 2 Hall Smart Foundries: Advancing Efficiency, Productivity, and Innovation
	 Kutes 1 Hall Precision Casting: Achievements and Emerging Technologies		 Kutes 2 Hall Additive Manufacturing in Foundries: Materials and Process Innovations	
10:20 - 11:00 Coffee Break				
11:00 12:45	 Çukurova Kimya Hall Advancements in Non-Ferrous Casting: Materials and Processes	 Expert Hall Advancements in Non-Ferrous Casting: Materials and Processes	 METKO HA Hall Advancements in Cast Iron and Cast Steel Technologies	 Marmara Metal Hall Advancements in Cast Iron and Cast Steel Technologies
	 Mescier Hall Molding Materials, Ceramics, and Refractories: Science and Applications	 Aveks Hall AI and Machine Learning in Foundry Process Optimization	 Çelikel 1 Hall 3rd Young Researchers Conference	 Çelikel 2 Hall Smart Foundries: Advancing Efficiency, Productivity, and Innovation
	 Kutes 1 Hall Precision Casting: Achievements and Emerging Technologies		 Kutes 2 Hall Additive Manufacturing in Foundries: Materials and Process Innovations	
13:00 - 14:00 Lunch Break				

14:00	Çukurova Kimya Hall Advancements in Non-Ferrous Casting: Materials and Processes	Expert Hall Advancements in Non-Ferrous Casting: Materials and Processes	METKO HA Hall Advancements in Cast Iron and Cast Steel Technologies	Marmara Metal Hall Advancements in Cast Iron and Cast Steel Technologies
	Mescier Hall Molding Materials, Ceramics, and Refractories: Science and Applications	Aveks Hall AI and Machine Learning in Foundry Process Optimization	Çelikel 1 Hall DigiFoundry Closing Meeting	Çelikel 2 Hall Smart Foundries: Advancing Efficiency, Productivity, and Innovation
	Kutes 1 Hall Die Casting: Technologies, Challenges, and Future Directions		Kutes 2 Hall Cast Metal Matrix Composites: Design, Processing, and Applications	

15:40 - 16:15 Coffee Break

16:15	Çukurova Kimya Hall Advancements in Non-Ferrous Casting: Materials and Processes	Expert Hall Advancements in Non-Ferrous Casting: Materials and Processes	METKO HA Hall Advancements in Cast Iron and Cast Steel Technologies	Marmara Metal Hall Advancements in Cast Iron and Cast Steel Technologies
	Çelikel 2 Hall Smart Foundries: Advancing Efficiency, Productivity, and Innovation		Kutes 2 Hall Cast Metal Matrix Composites: Design, Processing, and Applications	

Wednesday, 21 October 2026 **DAY 3**

09:00	Çukurova Kimya Hall Molding Materials, Ceramics, and Refractories: Science and Applications	Expert Hall Advancements in Non-Ferrous Casting: Materials and Processes	METKO HA Hall Advancements in Non-Ferrous Casting: Materials and Processes	Marmara Metal Hall Advancements in Cast Iron and Cast Steel Technologies
	Mescier Hall Die Casting: Technologies, Challenges, and Future Directions	Aveks Hall The ESG Imperative: CBAM, Circular Economy, and the Regulatory Future of Foundries	Çelikel 1 Hall Surface Engineering and Heat Treatment of Castings	Çelikel 2 Hall Intelligent Digital Casting and Materials Genome Engineering
	Kutes 1 Hall Lean and Agile Manufacturing in Foundries: Optimizing Processes for Efficiency and Cost Reduction		Kutes 2 Hall Fabrication and Machining of Cast Materials: Challenges and Advances	

10:20 - 11:00 Coffee Break

11:00	Çukurova Kimya Hall Molding Materials, Ceramics, and Refractories: Science and Applications	Expert Hall Advancements in Non-Ferrous Casting: Materials and Processes	METKO HA Hall The ESG Imperative: CBAM, Circular Economy, and the Regulatory Future of Foundries	Marmara Metal Hall Advancements in Cast Iron and Cast Steel Technologies
	Mescier Hall Die Casting: Technologies, Challenges, and Future Directions	Aveks Hall The ESG Imperative: CBAM, Circular Economy, and the Regulatory Future of Foundries	Çelikel 1 Hall Surface Engineering and Heat Treatment of Castings	Çelikel 2 Hall Intelligent Digital Casting and Materials Genome Engineering

13:00 - 14:00 Lunch Break

14:00 - 15:20	Poster Sessions	M2 Foyer Area	Press Meeting	Çukurova Kimya Hall
15:20 - 16:00	Coffee break			M2 Foyer Area
16:00 - 17:45	Closing Ceremony			ANKIROS Ballroom
19:00 - 23:59	Foundry Night			ANKIROS Ballroom



PRESENTATION SCHEDULE

76th World Foundry Congress - Istanbul
October 19-21, 2026

Presentation schedule details for the
76th World Foundry Congress (WFC 2026)"

Sunday, 18 October 2026	
Monday, 19 October 2026	DAY 1
Tuesday, 20 October 2026	DAY 2
Wednesday, 21 October 2026	DAY 3

PRESENTATION SCHEDULE

Oral Session

October 19-21, 2026

Advancements in Non-Ferrous Casting: Materials and Processes

Çukurova Kimya Hall

Tuesday, 20 October 2026

* Invited Speaker

<i>Chair: Prof. Dr. Ali Kalkanlı</i>		<i>Co-chair: Assoc. Prof. Young Cheol Lee</i>	09:00–10:20
09:00–09:20	A Novel Al ₃ Ti ₃ B Grain Refiner for Al–Si Alloys: Overcoming Si Poisoning in Al ₅ Ti ₁ B Systems Yijie Zhang, Brunel University of London, United Kingdom		
09:20–09:40	A Novel Grain Refiner with Higher Performance and Lower Cost than TiBAl Master Alloy Gael Zaragoza, Vesuvius - Foseco, Netherlands		
09:40–10:00	Ultrasonic Melt Treatment for Microstructure Control in 10-inch 6082 Aluminum Alloy Billets via Solidification Behavior Modification YoungKi Lee, Korea Institute of Industrial Technology, South Korea		
10:00–10:20	Development of Fine Bimodal Microstructure in Al–Cu–Si Ternary Eutectic Alloys with Sr Additions Young Cheol Lee, Korea Institute of Industrial Technology, South Korea		
10:20 - 11:00	Coffee Break		
<i>Chair: Prof. Dr. Ali Kalkanlı</i>		<i>Co-chair: Batuhan Doğdu</i>	11:00–12:45
11:00–11:25*	Recent Advances in Casting * John Campbell, University of Birmingham, UK, United Kingdom		
11:25–11:45	Capability of the Reduced Pressure Test to Assess Liquid Metal Damage Murat Tiryakioğlu, Jacksonville University, United States		
11:45–12:05	Impact of Cooling Rates on the Accuracy of Latent Heat Determination in AlSi ₇ Mg Using Thermal Analysis Methods Andrej Kump, OMM NTF, Ljubljana, Slovenia, Sweden		
12:05–12:25	Tensile Property Enhancement of AlSi ₇ MnMg Alloy via Intermetallic-Assisted Bifilm Removal Gábor Gyarmati, University of Miskolc, Hungary		
12:25–12:45	Ultrasonic Melt Treatment for Mitigating Fe-Rich Intermetallics in High-Fe Recycled A356 Castings Batuhan Doğdu, CMS Jant ve Makina San. A.Ş., Türkiye		
13:00 - 14:00	Lunch		
<i>Chair: Dr. Süleyman Can Kurnaz</i>		<i>Co-chair: Wei-Chen Qiu</i>	14:00–15:40
14:00–14:20	Microstructural Evolution Mechanism of Ti-4Al-6Cr-5Mo-5Nb-1.6Ta-xY Al-Lloys Under Synergistic Regulation Of Laser Directed Energy Deposition And Heat Treatment Ruirun Chen, Harbin Institute of Technology, China		
14:20–14:40	An Integrated Framework For Designing The Advanced Ni-Based Single-Crystal Superalloys By Integrating High-Throughput Experiments And Machine Learning Qiang Feng, University of Science and Technology Beijing, China		
14:40–15:00	Numerical Prediction and Experimental Validation of Shrinkage Defects in High-Temperature Titanium Alloy Investment Castings JianJun Guo, Northwestern Polytechnical University, China		
15:00–15:20	Precipitation Behavior of TCP Phases in Directional Solidification Nickel-Based Single Crystal Superalloys Wenchao Yang, Northwestern Polytechnical University, China		
15:20–15:40	Investigation Of The Microstructure And Properties Of Eu-Ni Alloys Fabricated By Levitation Melting Wei-Chen Qiu, National Key Laboratory of Advanced Casting Technologies, China		
15:40 - 16:15	Coffee Break		
<i>Chair: Dr. Süleyman Can Kurnaz</i>			16:15–17:55
16:15–16:35	Thixotropic Piston Injection Technology: Bridging the Gap Between Conventional Magnesium Die Casting and Thixomolding Marco Tropper, Thixotropic Piston Injection Technology GmbH, Austria		
16:35–16:55	Equipment Development for Magnesium Die Casting and Thixomolding Kwok-Keung Chan, L.K. Technology Holdings Limited, Hong Kong		

- 16:55–17:15** Recent Advances and Future Trends in Magnesium Alloy Casting Technologies
Ercan Candan, Erbakan University, Türkiye
- 17:15–17:35** New Magnesium Lightweight Applications For Transport Applications - The Value Chain For Mg Alloys & Outlook
Martin Tauber, International Magnesium Association, Belgium
- 17:35–17:55** Development Of High-Performance Mg Alloys And High-Quality Auto Parts
Bin Jiang, Chongqing University, China

Advancements in Non-Ferrous Casting: Materials and Processes

Expert Hall

Tuesday, 20 October 2026

* Invited Speaker

Chair: Prof. Dr. Murat Tiryakioğlu	Co-chair: Hideyuki Yasuda	09:00–10:20
09:00–09:20	Research on Investment Precision Casting of Large-Scale Titanium Alloy Grid Fins Ping Yan, FICMES, China	
09:20–09:40	The Role of Niobium in the Selected Properties of Low-Si Aluminum Alloys Martina Šýkorová, University of Žilina, Slovakia	
09:40–10:00	In-Situ Observation of Melting Behavior of Al-6.4Si Alloy with Spherical Primary Crystal by Slope Casting Process Natsumi Tsuchida, Waseda University, Nagoya University (from April 2026), Japan	
10:00–10:20	Microstructure Evolution During Casting of Ti-Al Alloys by Time-Resolved In Situ Tomography And Diffractometry Hideyuki Yasuda, Kyoto University, Japan	
10:20 - 11:00	Coffee Break	
Chair: Assoc. Prof. Billur Deniz Karahan	Co-chair: Thomas Weidler	11:00–12:40
11:00–11:20	Microstructural Evolution and High-Temperature Stability of a Rare-Earth-Modified Al–Cu Alloy Subjected to a Two-Step Ageing for Elevated-Temperature Service Batuhan Yıldız, Istanbul Technical University, Türkiye	
11:20–11:40	Improvement of Mechanical Properties of Al-Si-Mg Alloys for Sand Mold Casting in Giga-Casting Prototyping Takato Homma, KIMURA FOUNDRY Co., LTD., Japan	
11:40–12:00	New Alloy Development For Automotive Wheels With Potential To Reduce Thermal Treatment and Weight Batuhan Doğdu, CMS Jant ve Makina San. A.Ş., Türkiye	
12:00–12:20	Casting Development for a Roller Frame of Aircraft Shouxun Ji, Brunel University of London, United Kingdom	
12:20–12:40	ECO2Cast – Sustainable Wood-Metal Hybrid Components for Low-Emission Die Casting Thomas Weidler, University Aalen, Germany	
13:00 - 14:00	Lunch	
Chair: Kerem Altuğ Güler	Co-chair: Prof. Dr. Murat Tiryakioğlu	14:00–15:40
14:00–14:20	Microstructural Evolution and Mechanical Properties of High Strength Al 7068 Alloy Fabricated via Squeeze Casting and Rheocasting Ceren Bilal, Middle East Technical University, Türkiye	
14:20–14:40	Effect of cooling rate and smoothing method of experimental cooling curves of Aluminum-7.5% Silicon alloys on calculated latent heat and fraction solid evolution Doru Stefanescu, AZTERLAN / AnyCasting Software / U. Alabama & Ohio State U., United States	
14:40–15:00	The Power of Aluminium in Green Sand Eren Koç, DISA Industries A/S, Denmark	
15:00–15:20	Quantitative Comparison of Experimental and Simulated DSC Signals of As-Cast and Two-Step Solution Heat Treated A206 Aluminum Casting Barış Çetin, FNSS Savunma Sistemleri AŞ, Türkiye	
15:20–15:40	Hidden Damage and the False Hope of Soundness in Aluminum Castings Prof. Dr. Murat Tiryakioğlu, Jacksonville University, United States	
15:40 - 16:15	Coffee Break	
Chair: Dr. Gábor Gyarmati	Co-chair: Assoc. Prof. Mehmet Yıldırım	16:15–17:55
16:15–16:35	The Role of Al in High-Nb TiAl Alloys: From Microstructural Evolution to Property Enhancement Hongze Fang, Harbin Institute of Technology, China	
16:35–16:55	Mechanical and Antibacterial Properties of Gradient Copper-Containing Titanium Alloys Produced by Laser Additive Manufacturing Wang Weilong, State Key Laboratory of Advanced Casting Technologies, China	
16:55–17:15	A Combined CALPHAD and Machine Learning Approach to Designing Precision-Cast Ti2AlNb-Based Alloys Jun WANG, Northwestern Polytechnical University, China	
17:15–17:35	Crystallization of Aluminum Alloys Under Various Conditions - Calculations, Experiment and Quality Evaluation Marcin Kondracki, Silesian University of Technology, Poland	
17:35–17:55	Comparison Of Mechanical Properties, Wear, Corrosion And Fatigue Behavior Of Die- And Sand-Cast AlZn10Si8Mg Alloy Mehmet Yıldırım, Konya Technical University, Türkiye	

Advancements in Cast Iron and Cast Steel Technologies

METKO HA Hall
Tuesday, 20 October 2026

* Invited Speaker

<i>Chair: Seyfi Değirmenci</i>		<i>Co-chair: Alper Emre Güvendik</i>	09:00–10:25
09:00–09:25*	Use of Thermal Analysis for Porosity Prediction in Spheroidal Graphite Iron *Doru Stefanescu, AZTERLAN / AnyCasting Software / U. Alabama & Ohio State U., United States		
09:25–09:45	Chemical and Thermal Undercooling in Pilot-Scale Heavy Section Ductile Castings Bruno Eggert, Elkem Foundry Alloys, Norway		
09:45–10:05	Titanium–Molybdenum Carbide Reinforced Ultra-Thin Si-Mo SG Castings Jan Marosz, AGH University of Krakow, Poland		
10:05–10:25	Effects of Lignin- and Resorcinol-Containing Ester-Curable Alkali Phenolic Resins on Chemical and Mechanical Properties and Steel Casting PerformanceAlper Emre Güvendik, Çukurova Kimya Endüstrisi A.Ş., Türkiye		
10:20 - 11:00	Coffee Break		
<i>Chair: Seyfi Değirmenci</i>		<i>Co-chair: Asst. Prof. Doruk Gürkan</i>	11:00–12:20
11:00–11:20	Influence Of Gaseous Mould-Metal Interactions On Subsurface Defects in Low Alloy Steel Castings Alexis Vaucheret, ENSAM Cluny, France		
11:20–11:40	Real-Time Mapping of Hydrogen Diffusion in Steel Ammar Aksoy, Istanbul Technical University, Türkiye		
11:40–12:00	PDA-OES Analysis for Cleanliness on Cast Stainless Steel Asa Lauenstein, RISE Research Institutes of Sweden, Sweden		
12:00–12:20	Low-Velocity Impact Performance Of Cast Steels With Different Microstructures Doruk Gürkan, İstanbul Gedik University, Türkiye		
13:00 - 14:00	Lunch		
<i>Chair: Seyfi Değirmenci</i>		<i>Co-chair: Dr. Mitja Petrič</i>	14:00–15:40
14:00–14:20	Atomistic Mechanisms of Solute Effects on Graphite Nucleation and Growth in Cast Iron Adam Götz, Elkem, Norway		
14:20–14:40	Effect of Casting Thickness and Local Thermal Gradient on Graphite and Micro-inclusion Population in Spheroidal Graphite Iron António Pires, ELKEM, Norway		
14:40–15:00	Grain Refining of Steel and White Iron Using Elkem Grain Refiner (EGR) Alloys: 25 Years of Application Håkon Trygve Strøm Mausest, Elkem ASA, Foundry Alloys, Norway		
15:00–15:20	De-Mn Treatment with Fe ₃ O ₄ Mill Scale during Base Iron Melting Hiroya Shindo, SHINDO Foundry & Ironworks Inc., Japan		
15:20–15:40	Study of Dissolution of Zr and Al Based Inoculant in Spheroidal Cast Iron And Their Influence on Nucleation Mitja Petrič, University of Ljubljana, Slovenia		
15:40 - 16:15	Coffee Break		
<i>Chair: Seyfi Değirmenci</i>		<i>Co-chair: Simgegül Koca</i>	16:15–17:35
16:15–16:35	Quantitative Analysis of the Quality and Reliability of Ductile Iron Produced by South African Foundries: Can Artificial Intelligence Bridge the Gaps? Moreila Sekotlong, University of Johannesburg (MCTS), South Africa		
16:35–16:55	Development of an in Mold Solid–Liquid Alloying Process for Local Property Enhancement in Steel Castings Philippe Jacquet, Arts et Métiers Institute of Technology, France		
16:55–17:15	Fatigue Behaviour and Design of Heavy-Section Ductile Iron Castings Matteo Pedranz, Fonderie Ariotti S.p.A., Italy		
17:15–17:35	Mechanical Property Evaluation of Isothermed Ductile Iron (IDI) Simgegül Koca, Ay Döküm Makina Sanayi ve Ticaret A.Ş., Türkiye		

Advancements in Cast Iron and Cast Steel Technologies

Marmara Metal Hall

Tuesday, 20 October 2026

* Invited Speaker

Chair: Prof. Dr. Onuralp Yücel Co-chair: Toroshan Kara 09:00–10:20

09:00–09:20 Hybrid Crusher Hammers with Tailored Vanadium Carbide Morphology: Design, Direct Pouring Technology and High-Authority Materials Rationale
Magdalena Kawalec, AGH University of Krakow, Poland

09:20–09:40 Alloy Design Assisted Production of UHSS and AHSS Steels
Shimaa El-Hadad, Central Metallurgical Research and Development Institute, Egypt

09:40–10:00 Effect of the Rotoclene Process on Steel Cleanliness and Inclusion Removal in Steel Castings
Berkay Yılmaz, Akdaş Döküm, Türkiye

10:00–10:20 Improving the Feeding Efficiency in Ductile Iron Castings by Using Metallic Breaker Cores Covered by Insulation Padding
Toroshan Kara, Ferro Döküm Sanayi ve Dış Tic. A.Ş., Türkiye

10:20 - 11:00 Coffee Break

Chair: Prof. Dr. Onuralp Yücel Co-chair: Mostafa Payandeh 11:00–12:20

11:00–11:20 Erosion Resistance of Heat-treated Spheroidal Graphite Aluminum Cast Irons in Aluminum Alloy Melt

11:20–11:40 Advanced Ductile Irons for Special Applications
Marcin Górny, AGH University of Krakow, Poland

11:40–12:00 Effect of Austempering Temperature on the Mechanical Properties, Wear Resistance and Low Cycle Fatigue Behavior of Austempered Ductile Iron

12:00–12:20 Replacing Graphite with Biochar as an Alloying Element in Cast Iron
Mostafa Payandeh, RISE (Research Institute of Sewden), Sweden

13:00 - 14:00 Lunch

Chair: Assoc. Prof. Necip Ünlü Co-chair: Cem Uluç 14:00–15:45

14:00–14:25* Metallurgical Advances of ADI at CMRDI
* Adel Nofal, CMRDI, Egypt

14:25–14:45 TEM Study of Grey Cast Iron Matrix to Better Understanding of Age Strengthening
Alexis Vaucheret, ENSAM Cluny, France

14:45–15:05 Combined Effects of Nb and Ti Alloying and Heat Treatment on the Performance of Gray Cast Iron
Abdul Razaq, Huazhong University of Science and Technology, China

15:05–15:25 Effect of Mg on the Three-Dimensional Morphological Transition and Growth Mechanism of Graphite in Cast Iron
Zhenwei Liu, Huazhong University of Science and Technology, China

15:25–15:45 Thermal Analysis-Microstructure Relationships in La- and Ba-Inoculated EN-GJL-250 Gray Cast Iron
Cem Uluç, Erkunt Sanayi A.Ş., Türkiye

15:40 - 16:15 Coffee Break

Chair: Assoc. Prof. Necip Ünlü Co-chair: Prof. Mervat Ibrahim 16:15–17:35

16:15–16:35 Real-Time Visualisation of Steel Pouring in Green Sand Moulds: Data for Improved Simulation
Tito Moravie, AMVALOR Cluny, France

16:35–16:55 Use of Thermal Analysis for Porosity Prediction in Spheroidal Graphite Iron
Ramon Suarez, Fundacion AZTERLAN, Spain

16:55–17:15 Low Temperature Stability of Microstructure and Properties of Austempered Ductile Iron (ADI) Castings
Adam Bitka, Lukasiewicz - Krakow Institute of Technology, Poland

17:15–17:35 Thin Wall Cast Iron Castings and Its Applications
Mervat Ibrahim, Egypt

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Molding Materials, Ceramics, and Refractories: Science and Applications

Mescier Hall

Tuesday, 20 October 2026

* Invited Speaker

Chair: Prof. Dr. Ferhat GÜL Co-chair: Zhang Yang 09:00–10:20

09:00–09:20 Effect of Colloidal Stability on the Physical Properties of Ceramic Moulds for Investment Casting
Inigo Fernandez de Arroyabe Zabala, Mondragon University, Spain

09:20–09:40 Importance of Spinel Formation and its Impact on the Physical, and Mineralogical Properties of Dry Vibrating Mixes (DVM) for Coreless Induction Furnaces.
İbrahim Büyükcayır, Haznedar Dürer Refractories /Member of Calderys, Türkiye

09:40–10:00 Characterization of Casting Defects Originating from the Feeder Sleeve
İbrahim Hayri KESER, Çukurova Kimya Endüstrisi A.Ş., Türkiye

10:00–10:20 The Application and Development of PUCB Core-Making Process in China
Zhang Yang, Jinan Shengquan Group Share-Holding Co.,Ltd, China

10:20 - 11:00 Coffee Break**Chair:** Prof. Dr. Ferhat GÜL**Co-chair:** Alain Dugu**11:00–12:40****11:00–11:20** A Comparison of the Decomposition Kinetics and Core Gas Pressure for Industrial Foundry Sand Binders
Dinesh Sundaram, Jönköping University, Sweden**11:20–11:40** Cooperation on Developing Customized Alkaline Phenolic Binder for Steel Foundry
Levent Layık / Metko Huttenes Albertus, Türkiye**11:40–12:00** Sustainable Production Approach with Phenolic Resins as Binders in Refractory Coatings
Dr. Sevkan ÜLKER, ÇUKUROVA KİMYA ENDÜSTRİSİ A.Ş., Türkiye**12:00–12:20** Role of Binder in Thermal Expansion Characteristics of Chemically Bonded Sand Cores
V N Sai Deepak Kolli, Jönköping University, Sweden**12:20–12:40** Impact of Sand Permeability on Casting Performance A Comparison Between Reclaimed and Fresh Sand
Alain Dugu, Jönköping University, Sweden**13:00 - 14:00 Lunch****Chair:** Assoc. Dr. Eng. Angelika Kmita**Co-chair:** Berfin Salman**14:00–15:40****14:00–14:20** Substitution Strategy for Carbonaceous Additives in Bentonite Bonded Moulding Sands: Towards a Fossil-Free System
Sandra Böhnke, Calderys Metalcasting Germany GmbH, Germany**14:20–14:40** Application of Special Design Feeder Sleeve in Cast Parts Produced by Vertical Molding Method
Halil Gönenbaba / Metko Huttenes Albertus, Türkiye**14:40–15:00** Exo-/ Isoplast – Prototyping and Small Series Rethought
Sven Dommen / Chemex Foundry Solutions GmbH, Germany**15:00–15:20** Ceramic Sand CERABEADS® – A Pathway to Sustainable and Advanced Casting Production
Radim Opacity / Itochu Europe, PLC, United Kingdom Martin Dahlman / Huettenes-Albertus Chemische Werke GmbH, Germany**15:20–15:40** The Effect of Coating Material on the Properties of the Steel Substrates and As-Cast A356 Alloy
Berfin Salman, CMS Light Alloy Wheels, Türkiye

AI and Machine Learning in Foundry Process Optimization

Aveks Hall**Tuesday, 20 October 2026***** Invited Speaker****Chair:** Prof. Yajun Yin**Co-chair:** Wenjun Li**09:00–10:25****09:00–09:25*** Deep Learning-Based Segmentation of Graphite Morphology and Matrix Phases in Cast Iron
* Şule Ögüdücü, İstanbul Teknik Üniversitesi, Türkiye**09:25–09:45** Intelligence Empowers Precision Casting Green Creates the Future: Innovative Application and Industrial Transformation Practice of Intelligent Robots in the Whole Process of Precision Casting
Xianpeng Zhang, Penglai Jinchuang Precision Casting Co., Ltd., China**09:45–10:05** Research and Application of Foundry Character Recognition Algorithm Based on Deep Learning
Zhu Libo, Changsha Changtai Robot Co., Ltd, China**10:05–10:25** Application of AI Vision Technology in the Intelligent Inspection and Grinding of Castings
Wenjun Li, Dalian Yuyang Industrial Intelligence Co., Ltd, China**10:20 - 11:00 Coffee Break****Chair:** Prof. Yajun Yin**Co-chair:** Assoc. Prof. Niels Skat Tiedje**11:00–12:25****11:00–11:20** Investigation of Data Processing Method for Green Sand Characteristics in Process Modeling on Foundry Factory Using Machine Learning
Ryosei Takayama, Daido University, Japan**11:20–11:40** Building the Smart Foundry for today — and tomorrow
Carsten Nielsen, DISA, Denmark**11:40–12:00** Digitalisation of a Foundry Operation: From Process Understanding to a Control Strategy.
Niels Skat Tiedje, Technical University of Denmark, Denmark**13:00 - 14:00 Lunch****Chair:** Prof. Yajun Yin**Co-chair:** Jin-Su Ha**14:00–15:40****14:00–14:20** Identification of Heat Transfer Coefficient Between Aluminum Alloy and Metal Mold with Cool Tube
Naoki Miyoshi, Daido University, Japan**14:20–14:40** 3D Topography Reconstruction Algorithm for Internal Defects in Aluminum Alloy Castings Based on Multi-Angle X-ray Images
Hao Dong, Huazhong University of Science and Technology, China**14:40–15:00** A Casting Temperature Field Prediction Method Based On Multi-head U-net
Jinwu Kang, Tsinghua University, China**15:00–15:20** Heat Transfer Coefficient Between Zinc Alloy for Press Molding Dies and Sand Mold in Open Casting
Takayoshi Maebara, Daido University, Japan**15:20–15:40** Integrated Analysis of Manufacturing Data for Predicting Electric Furnace Power Consumption in the Casting Melting Process
Jin-Su Ha, Korea Institute of Industrial Technology, South Korea

3rd Young Researchers Conference

Çelikel 1 Hall

Tuesday, 20 October 2026

09:00–10:25	3rd Young Researchers Conference
11:00–12:45	3rd Young Researchers Conference
14:00–15:40	DigiFoundry Closing Meeting

Smart Foundries: Advancing Efficiency, Productivity, and Innovation

Çelikel 2 Hall

Tuesday, 20 October 2026

* Invited Speaker

Chair: Bülent Şirin		Co-chair: Emre Gürsoy	09:00–10:20
09:00–09:20	Digital Transformation for Smart Foundries of the Future Jiten Shah, Product Development & Analysis (PDA) L.L.C., United States		
09:20–09:40	"When Metal Thinks From Isolated Models to Collaborative Intelligence" Susana Méndez Bóveda, AZTERLAN, Spain		
09:40–10:00	Determinants of Quality of Work Life for Women Employees in the Foundry Industry: Effects on Job Stress, Career Satisfaction and Work-Family Balance Şeyma Ayhan, St.Clements University, Türkiye		
10:00–10:20	Increasing Yield and Reducing Carbon Footprint in Casting Front Axle Bearings Made of Spheroidal Graphite Cast Iron Used in Tractors by Using Magmasoft Casting Simulation Program Emre Gürsoy, Döktaş Dökümcülük San. ve Tic. A.Ş., Türkiye		
10:20 - 11:00	Coffee Break		
Chair: Bülent Şirin		Co-chair: Reo Fuse	11:00–12:20
11:00–11:20	CFD-Based Design Method for Reducing Foam-Residue Defects through Residue Accumulation Control and Collection in Full Mold Casting Yusuke Mukai, Mie University, Japan		
11:20–11:40	Status of World Foundry Industry Vis-A-Vis Top Three Casting Producing Nations: A Study Manapuram Muralidhar, North Eastern Regional Institute of Science & Technology, India		
11:40–12:00	Digital Twin-Based Visualization of Pouring Flow Pattern for Evaluation of Manual Pouring Operation Reo Fuse, University of Yamanashi, Japan		
13:00 - 14:00	Lunch		
Chair: Assoc. Dr. Eng. Dorota Wilk-Kołodziejczyk		Co-chair: Prof. Dr. Özgül Keleş	14:00–15:40
14:00–14:20	Industrial Transformation in Foundries: Why Many Initiatives Fail – and What Must Be Done Differently Till Schreiter, ABP Induction Systems GmbH, Germany		
14:20–14:40	Rethinking Raw Material Procurement in Foundries with MAT Foundry Group Benjamin van der Horst, Metals Hub GmbH, Germany		
14:40–15:00	Energy-Related Carbon Footprint of Metal Casting Processes: A Process-Oriented Systematic Assessment for Green Transition Pathways Engin Açıkalin, Istanbul Gedik University, Türkiye		
15:00–15:20	Creating Smart Hazards & Risks Managament Culture in Foundries via Artificial Intelligent A Case Study on WFO Global Foundry Report 2025 Özgül Keleş, İTÜ, Türkiye		
15:40 - 16:15	Coffee Break		
Chair: Asst. Prof. Tuğçe Yağcı		Co-chair: Mustafa Ata	16:15–17:55
16:15–16:35	Staged Dual-Frequency Approach to Induction Melting of Chips and Granules Onat Bayraktar, EGES Elektrik ve Elektronik Gereçler SAN. TİC. A.Ş., Türkiye		
16:35–16:55	Analysis of the Possibilities of Applying Selected Methods of Classifying Microstructure Elements of Cast Materials Dorota Wilk-Kołodziejczyk, AGH, University of Krakow, Poland		
16:55–17:15	Chameleon Foundry: Fiber Optic Automatic Temperature Measurement System for Sustainable Iron Foundry Operations Murat Öz, Heraeus Electro Nite Termoteknik Sanayi ve Tic. A.Ş., Türkiye		
17:15–17:35	Intelligent and Sustainable Brake Systems Trends and Zero Defect Culture in Casting Products Mustafa Ata, AUMOVIO (former CONTINENTAL), Germany		

Precision Casting: Achievements and Emerging Technologies

Kutes 1 Hall

Tuesday, 20 October 2026

* Invited Speaker

Chair: Dr. Onur Ertugrul

Co-chair: Asst. Prof. Lukasz Rakoczy

09:00–10:20

09:00–09:20 Short-Process Preparation of High-Quality Titanium-Based Alloys via Electromagnetic Continuous Casting
Jieren Yang, Sichuan University, China

09:20–09:40 The Interfacial Reaction Mechanism between Doped-Modified BaZrO₃ and Pure Ti
Jinhong Zhang, Northwestern Polytechnical University, China

09:40–10:00 Oxygen and Nitrogen-Induced Stray Grain Formation in Ni-Based Single Crystal Superalloys
Jian Zhang, Institute of Metal Research, Chinese Academy of Sciences, China

10:00–10:20 Characterization of the Microstructure, Phase Transformation Temperatures and Oxidation Resistance of Pt-Modified Nickel-Based Superalloy for Jet Engines Applications
Lukasz Rakoczy, AGH University of Krakow, Poland

10:20 - 11:00 Coffee Break

Chair: Dr. Onur Ertugrul

Co-chair: Qingmiao Fan

11:00–12:20

11:00–11:20 Influence of Structural Modification on the Deformation Behavior of Investment-Cast Aluminum Cellular Structures
Mahan Firoozbakht, Foundry Institute, RWTH Aachen University, Germany

11:20–11:40 Advanced Hybrid Manufacturing of AZ31 Magnesium Cellular Architectures through 3D Printing and Precision Investment Casting
Patricia Fernandez Morales, Universidad Pontificia Bolivariana, Colombia

11:40–12:00 Crystallographic Orientation, As-Cast Microstructure and Mechanical Properties of Single-Crystal Nickel-Based Superalloy René N5
Rafal Cygan, Consolidated Precision Products Poland/ AGH Krakow, Poland

12:00–12:20 Application of AT996 Medium Temperature Wax in Lean Production of Precision Casting
Qingmiao Fan, Penglai Jinchuang Precision Casting Co., Ltd., China

13:00 - 14:00 Lunch

Die Casting: Technologies, Challenges, and Future Directions

Kutes 1 Hall

* Invited Speaker

Chair: Assoc. Prof. Çağlar Yüksel

Co-chair: Dr. Stephen Midson

14:00–15:45

14:00–14:25* Intelligent Prediction of As-Cast and Dynamic Natural Aged Mechanical Properties of Heat Treatment-Free Al Alloys for Integrated Die Casting
* Xixi Dong, Nanjing University of Aeronautics and Astronautics, China

14:25–14:45 Development and Design Optimization of Low-Porosity, Thermal Shock Resistant Refractory Riser Tubes for High-Pressure Dosing Furnaces in Aluminum Die Casting
Mustafa Can Ercan, Mita Kalıp Ve Döküm Sanayi A.Ş., Türkiye

14:45–15:05 Data-Driven Multivariable Monitoring and Control of Critical Parameters in Vacuum High Pressure Die Casting Towards Zero-Defect Structural Components
Asier Bakedano, AZTERLAN, Spain

15:05–15:25 Reduction of Warpage in an Automotive Armrest Component and Improvement of Process Efficiency through the Transition to Zamak 2 Alloy
Eda Tuzcu Şahin, Prometal Hafif Metaller Döküm San. ve Ltd. Şti., Türkiye

15:25–15:45 The Effect of Iron, Magnesium and Copper Concentrations on the Properties of Heat Treated Conventional High Pressure Die Castings
Stephen Midson, Colorado School of Mines, United States

Additive Manufacturing in Foundries: Materials and Process Innovations

Kutes 2 Hall

Tuesday, 20 October 2026

* Invited Speaker

Chair: Assoc. Prof. Dr. Uğur Gürol

Co-chair: Assoc. Prof. Jie Wan

09:00–10:25

09:00–09:25* Structural Analysis of Cast and Additively Manufactured Components
* Mustafa Koçak, Gedik İleri Döküm, Türkiye

09:25–09:45 Microstructure-Tailored Mitigation of Creep Anisotropy in Additively Manufactured Precipitation-Strengthened Ni-Based Superalloys
Hyungsoo Lee, Korea Institute of Materials Science, South Korea

09:45–10:05 Performance and Precision Control of Ceramic Shell/core Prepared by Binder Jetting Additive Manufacturing and its Applications in Rapid Casting
Wenming Jiang, Huazhong University of Science and Technology, China

10:05–10:25 High Density Nanotwins and Strong Work Hardening Behavior of an Additively Manufactured Body Centered Cubic Low Carbon Steel
Jie Wan, Northwestern Polytechnical University, China

10:20 - 11:00 Coffee Break

*Chair: Assoc. Prof. Dr. Uğur Gürol**Co-chair: Yanpeng Wei***11:00–13:00**

- 11:00–11:20** Non-beam Additive Manufacturing of High-Performance TiAl Matrix Composites: Microstructural Heterogeneity Design and Multiscale Strengthening Mechanisms
Weigang Yang, University of Science and Technology Beijing, China
- 11:20–11:40** Evaluation Of 3d Printer-Based Mold and Model Production Methods in Precision Casting Process
Burak Bozkara, Gedik İleri Döküm Teknolojileri, Türkiye
- 11:40–12:00** Additive Manufacturing by Direct Metal Laser Sintering Process and Parametric Analysis of Light Motor Vehicle Piston Casting
Manapuram Muradlihar, North Eastern Regional Institute of Science & Technology, India
- 12:00–12:20** Manufacturing of Engine Block and Cylinder Head by Low-Pressure Casting into 3D Printed Sand Molds Produced via Binder Jetting
Barış Çavunt, Döktaş Dökümcülük Tic. Ve San. A.Ş., Türkiye
- 12:20–12:40** Core Boost – New Advances in Binder Jetting for Industrial Sand Printing
Aldo Randazzo, ExOne GmbH, Germany
- 12:40–13:00** A Hybrid Manufacturing Route To High-melting-point Metallic Lattice Structures: Integrating Material Design With Process Innovation
Yanpeng Wei, Çin Makine Araştırma Enstitüsü Grubu Shenyang Döküm Araştırma Enstitüsü Ltd. Şti, China

13:00 - 14:00 Lunch

Cast Metal Matrix Composites: Design, Processing, and Applications

Kutes 2 Hall

* Invited Speaker

*Chair: Assoc. Prof. Mertol Göknelma**Co-chair: Ewa Olejnik***14:00–15:45**

- 14:00–14:25*** Characterization Of the Microstructure, Tensile, Fatigue, And Creep Behavior of Ti-6Al-4V-1B(wt.%) Metal Matrix Composites Processed Via Casting, Casting and Extruding, And Powder Metallurgy Routes
* Carl Boehlert, Michigan State University, United States
- 14:25–14:45** Hybrid In Situ/Ex Situ Ti–Al–C–WC Local Reinforcement of High-Chromium White Cast Iron for Enhanced Abrasive Wear Resistance
Aida Beatriz Moreira, Faculty of Engineering of the University of Porto, Portugal
- 14:45–15:05** A Filtration-Based Recycling Method for Particle-Reinforced Aluminum Matrix Composites
Michal Szucki, Foundry Institute, TU Bergakademie Freiberg, Germany
- 15:05–15:25** Manufacturing And Performance of Composite Castings Reinforced with Ceramic Phase Using in Situ and Ex Situ Processes
Lukasz Szymanski, FLSmidth Mining Technology GmbH, Germany
- 15:25–15:45** Engineering Wear-Resistant Cast Components through Local In Situ Metal Matrix Composites
Ewa Olejnik, Innerco sp. z o.o., Poland

15:40 - 16:15 Coffee Break*Chair: Prof. Dr. Ali Kalkanlı**Co-chair: Assoc. Prof. Liwen Chen***16:15–17:40**

- 16:15–16:40*** Metal Matrix Composite Processing by Squeeze Casting Infiltration and Characterization
* Ali Kalkanlı, METU, Türkiye
- 16:40–17:00** Thermal Properties of Short Alumina Fiber and VGCF Reinforced Aluminum Alloy Hybrid Composites
Ryota Kinoshita, Kindai University, Japan
- 17:00–17:20** Casting Preparation of SiCp/Mg-Zn-Cu Composites with Thermal Conductivity Greater than Pure Mg
Shusen Wu, Huazhong University of Science and Technology, China
- 17:20–17:40** Semi-Solid Preparation Technology of Magnesium Matrix Composites
Liwen Chen, North University of China, China

Molding Materials, Ceramics, and Refractories: Science and Applications

Çukurova Kimya Hall

* Invited Speaker

Wednesday, 21 October 2026*Chair: Prof. Dr. Servet Turan**Co-chair: Xin Peng***09:00–10:20**

- 09:00–09:20** A High-Performance Casting Solution Utilizing a Novel Inorganic No-Bake Binder System
Yin Xiong, ccmm, China
- 09:20–09:40** Examination of the Effect of Refractory Coating on Veining Defects
Uğur Üçok, Çukurova Kimya Endüstrisi A.Ş., Türkiye
- 09:40–10:00** Analysis of the Properties of Silica Sand Bonded with Biopolymer, Activated Sodium Bentonite, and Water at Room Temperature and –40 °C
Tulio Sergio Nascimento, Federal University of Rio Grande do Sul, Brazil
- 10:00–10:20** Pyrolysis Behavior and Reaction Mechanism of No-bake Furan Resin under Oxygen-free Atmosphere
Xin Peng, Huazhong University of Science and Technology, China

Chair: Prof. Dr. Servet Turan **Co-chair:** Mustafa Murat Zor **11:00–12:25**

- 11:00–11:25*** Towards Zero Emissions in Iron Foundries: Multi-Scale Modelling and Synergistic Effect of Eco-Friendly Technologies.
* Angelika Kmita, Stowarzyszenie Techniczne Odlewników Polskich, Poland
- 11:25–11:45** Foundry Industry in Transition: Global Challenges, Regional Dynamics and Pathways for Sustainable Growth
Siamak Djafarian / Huettenes-Albertus Chemische Werke GmbH, Germany
- 11:45–12:05** Research on the Application of Pyrophyllite in Foundry Coatings
Huizong Song, Suzhou Xingye Materials Technology Co., Ltd., China
- 12:05–12:25** Effect of Nano Carbon Modified Zircon Based Refractory Coating on Cerioxide Surface Defects in Low Carbon Steel Sand Castings
Mustafa Murat Zor, Çukurova İnşaat Makinaları San. Tic. A.Ş. (ÇİMSATAŞ), Türkiye
- 14:00–15:20** Press Meeting

Advancements in Non-Ferrous Casting: Materials and Processes

Expert Hall

Wednesday, 21 October 2026

* Invited Speaker

Chair: Prof. Dr. Huasheng Xie **Co-chair:** Orçun Zığındere **09:00–10:20**

- 09:00–09:20** Effects of Melt Treatment and Alloy Composition on the Casting and Mechanical Properties of Mn-Cu Damping Alloys
Kim Taehyeong, Korea Institute of Industrial Technology, South Korea
- 09:20–09:40** Process Design and Parameter Optimization for High-Quality Production of Zamak Handles by Hot Chamber Die Casting
Çiğdem Çağdaş, Bulut Galvano Metal Demir Çelik Sanayi Ve Ticaret A.Ş., Türkiye
- 09:40–10:00** Microalloying-Driven Asynchronous Precipitation for Elevated-Temperature Strengthening in Al-Si-Cu-Ni Alloy
Jian Dong, Harbin Institute of Technology School, China
- 10:00–10:20** Investigation of the Effect of Exothermic Crusher Feeders Used in the Casting of Copper Alloys on Feeding Performance and Production Efficiency
Orçun Zığındere, Sağlam Metal San. ve Tic. A.Ş., Türkiye
- 10:20 - 11:00** Coffee Break

Chair: Prof. Dr. Murat Tiryakioğlu **Co-chair:** Assoc. Prof. Jan Jezierski **11:00–12:40**

- 11:00–11:20** Expanding the Alloy Window: Rheocasting of Low-Si and Recycled Aluminum
Baran Saraç, Montanuniversität Leoben, Lehrstuhl für Gießereikunde, Austria
- 11:20–11:40** Influence of Secondary Aluminum Recycling Ratio on Melt Cleanliness, Fluidity, and Solidification Behavior of A356 Casting Alloy
Şerif Sesli, Maxion İnci Alüminyum Jant, Türkiye
- 11:40–12:00** Microstructure-Property Relationships in a Crossover Recycled Aluminium De-OX Alloy
Zdenka Zovko Brodarac, University of Zagreb Faculty of Metallurgy, Croatia
- 12:00–12:20** Microstructures And Mechanical Properties of TiZr Alloy in As Cast and Hot Isostatic Pressed States
Zhiyong Zhang, Shenyang Research Institute of Foundry Co., Ltd. CAM, China
- 12:20–12:40** Low-Level Iron Removal from AISi Alloys by Combined Sedimentation and Filtration
Jan Jezierski, Silesian University of Technology, Poland

Advancements in Non-Ferrous Casting: Materials and Processes

METKO HA Hall

Wednesday, 21 October 2026

* Invited Speaker

Chair: Prof. Jaroslaw Piatkowski **Co-chair:** Assoc. Prof. Jufu Jiang **09:00–10:20**

- 09:00–09:20** Die Coating Pulsed Spray System
Muneer Ahmed, Engcast Ltd, United Kingdom
- 09:20–09:40** Flow Stability Assessment in Curved Sections of HPDC Feeding Systems for Aluminum Alloy Castings
Jakub Wiśniowski, AGH University of Krakow, Poland
- 09:40–10:00** Microstructural Evolution of Cast Hypereutectic Al-Si Alloys during Rapid Unidirectional Solidification for Primary Si Suppression
Shuhei Takeuchi, Okayama Univ., Japan
- 10:00–10:20** Thixomolding Forming of Complex Thin-Walled AZ91D Magnesium Alloy Parts
Jufu Jiang, Harbin Institute of Technology, China
- 10:20 - 11:00** Coffee Break

The ESG Imperative: CBAM, Circular Economy, and the Regulatory Future of Foundries

METKO HA Hall

* Invited Speaker

Chair: Assoc. Prof. Dr. Ahmet Turan

Co-chair: Mahsa Saeidpour

11:00–12:00

11:00–11:20 An Innovative and Sustainable Approach for Zinc Recovery from Foundry Waste
Ali Emre Zobaroglu, Demisaş Döküm Emaye Mamülleri Sanayi A.Ş., Türkiye

11:20–11:40 Identification of Corporate Sustainability System (CSS) Performance Indicators in the Casting Industry: An Exploratory Action Research Study
Güzide Karakuş, Necmettin Erbakan University, Türkiye

11:40–12:00 System-Level Approaches for CO₂ Reduction in Iron Foundries: The Castwell Demonstrator
Mahsa Saeidpour, RISE research institute of Sweden, Sweden

Advancements in Cast Iron and Cast Steel Technologies

Marmara Metal Hall
Wednesday, 21 October 2026

* Invited Speaker

Chair: Seyfi Değirmenci

Co-chair: Heng Cao

09:00–10:20

09:00–09:20 Creation of a Digital Twin in Sand Mold Iron Casting Processes with MAGMASOFT Calibration Based on Real Production
Baran H. Sular, MAGMA Bilişim ve Teknoloji Hizmetleri, Türkiye

09:20–09:40 Material Optimization of a Water-Cooled Exhaust Manifold in Marine Diesel Engines by Using Finite Element Analysis
Baran Kaya, Tümosan Teknoloji Mühendislik Sanayi Ticaret A.Ş., Türkiye

09:40–10:00 Investigation of the Effect of Runner Design on Mechanical Properties Using Simulation Software
EREN AKINCI, DEMİSAŞ Döküm Emaye Mamülleri Sanayi AŞ, Türkiye

10:00–10:20 Solidification Behavior and Modeling of the Electro-Slag Overflow Forming
Heng Cao, Shenyang Research Institute of Foundry Co., Ltd. CAM, China

10:20 - 11:00 Coffee Break

Chair: Seyfi Değirmenci

Co-chair: Dr. Haruki Itofuji

11:00–12:00

11:00–11:20 Evaluation Of a Novel Quality Index for GJV Castings
Cem Uluç, Erkunt Sanayi A.Ş., Türkiye

11:20–11:40 Strain-Rate Dependent Fracture of ADI Governed by TRIP Effect
Dawid Myszk, Warsaw University of Technology, Poland

11:40–12:00 Influence Of Inoculation on The Skin Characteristics of High Nodularity Compacted (Vermicular) Graphite Iron Castings
Iulian Riposan, University Politehnica Bucharest, Romania

12:00–12:20 Electric Arc Furnace Melting for Flake Graphite Iron Castings
Haruki Itofuji, I2C Technology Institute, Japan

Die Casting: Technologies, Challenges, and Future Directions

Mescier Hall
Wednesday, 21 October 2026

* Invited Speaker

Chair: Doç. Dr. Ali Serdar Vanlı

Co-chair: Manel Da Silva Lopez

09:00–10:20

09:00–09:25* 3D-Printed Sand Cores for High-Pressure Die Casting: Understanding Load Conditions and Tailoring Core Properties
* Patricia Erhard, Fraunhofer IGCV, Germany

09:25–09:45 Wave Dynamics in Ladle Pouring and Plunger Advancing Processes of Aluminum Alloy Die Casting using Particle-Based SPH Method with Oxide Film Model
Yukiya Tanaka, Daido University, Japan

09:45–10:05 Sensor Integration in Low Pressure Die Casting (LPDC): Structural Health Monitoring Solutions for Automotive Chassis Components
Dirk Lehms, Fraunhofer IFAM, Germany

10:05–10:25 Enhanced Air Evacuation and Reduced Porosity in High-Pressure Die Casting through a New Generation of three-dimensional Passive Vacuum Venting Technology
Manel Da Silva Lopez, Fundacio Eurecat, Spain

10:20 - 11:00 Coffee Break

Chair: Prof. Dr. Anıl Akdoğan

Co-chair: Dr. Yuzeng Chen

11:00–13:00

11:00–11:20 Scaling Recycled Content To 89 wt.%. Can Highly Recycled AlSi10MnMg High-Pressure Die Casting Alloy Meet Structural Automotive Demands?
Leonardo Fernandes Gomes, Fraunhofer IFAM, Germany

11:20–11:40 Experimental, Numerical and Industrial Investigation of Secondary Aluminium Content and Die Cooling Conditions in LPDC AlSi7Mg0.3 Wheels
Berkay Oral, Doktas Dökümcülük Ticaret ve Sanayi, Türkiye

11:40–12:00 Reverse Evolution of Regional Solidification Quality Induced by Cooling Process Variations in Complex-Shaped Die-Cast A356 Wheels
Jie Han, Hua Zhong University of Science and Technology, China

- 12:00–12:20 Damage of Fe-rich Intermetallics in HVDC AlSi10MnMg alloys: In-situ μ -CT Tensile and Finite Element Analysis
Haidong Zhao, South China University of Technology, China
- 12:20–12:40 Spray Process Optimization in Aluminium Die Casting
Martin Lutz, Wollin GmbH, Germany
- 12:40–13:00 Hot-Work Steels for Additive Manufacturing and Their Applications in High Pressure Die Casting Dies
Yuzeng Chen, Northwestern Polytechnical University, China

The ESG Imperative: CBAM, Circular Economy, and the Regulatory Future of Foundries

Aveks Hall

Wednesday, 21 October 2026

* Invited Speaker

Chair: Prof. Dr. Gökhan Orhan Co-chair: Markus Schabrucker 09:00–10:20

- 09:00–09:20 Casting Industry at a Crossroads : Global Trends, Current Challenges, and Future Strategies
Sanghoon Kim, KIET (Korea Institute for Industrial Economics & Trade), South Korea
- 09:20–09:40 Establishment And Implementation of a Water Efficiency Management System in the Foundry Sector
Cem Uluğ, Erkunt Sanayi A.Ş., Türkiye
- 09:40–10:00 Eco-Efficiency in Railways: Carbon Footprint Reduction Through an Optimized Welding Process and Bespoke Alloy for Rail-To-Turnout Insert Joints.
Patricia Caballero Oguiza, Tecnalia Research & Innovation, Spain
- 10:00–10:20 Sustainability Meets Regulation: New Global Emission Policies as the Catalyst for Low Emission Foundry Operations
Markus Schabrucker, Huettenes-Albertus Chemische Werke GmbH, Germany
- 10:20 - 11:00 Coffee Break

Chair: Erman Car Co-chair: Lukas Mastaler 11:00–12:20

- 11:00–11:20 Environmental Impact of High-Pressure Die-Cast Al Alloys Used in Battery Enclosures for EV Applications: A Cross-Country LCA Study
Germany vs Türkiye
Gizem Burcu Bilgin, Istanbul Technical University, Türkiye
- 11:20–11:40 Study Of H₂-Oxycombustion for Secondary Aluminum Production
Iban Vicario Gomez, Fundacion Tecnalia Research & Innovation, Spain
- 11:40–12:00 The CBAM Challenge: Aluminum Casting Feasibility vs Steel Frames in Automotive BIW Material Substitution
Kamil Armağan Gül, Oyak Renault, Türkiye
- 12:00–12:20 Decarbonization Of Melting and Heat Treatment Processes in Aluminum Foundries
Lukas Mastaler, Technical University Bergakademie Freiberg, Germany

Surface Engineering and Heat Treatment of Castings

Çelikel 1 Hall

Wednesday, 21 October 2026

* Invited Speaker

Chair: Asst. Prof. Cem Ömek Co-chair: Assist. Prof. Doruk Gürkan 09:00–10:25

- 09:00–09:25 Can Akyıl
- 09:25–09:45 Effect of surface modification by Ultrasonic Burnishing and Ultrasonic Nanocrystal Surface Modification on cast irons
Kalle Jalava, Tampere University, Finland
- 09:45–10:05 Effect of Isothermal Holding Below and Above Ms Temperature on the Microstructure and Mechanical Properties of Carbide-Free Bainitic Cast Steel
Volkan Kılıçlı, Gazi University, Türkiye
- 10:05–10:25 Phase-Dependent Epd Coating Behavior On 1.4469 Duplex Stainless Steel
Doruk Gürkan, Istanbul Gedik University, Türkiye
- 10:20 - 11:00 Coffee Break

Chair: Asst. Prof. Engin Açıkalın Co-chair: Tezer Karayol 11:00–12:20

- 11:00–11:20 Corrosion Behaviour of 16th Century Structural Iron Nails from Ottoman Monuments: A Comparative Study of Sultan Süleyman Türbesi (Szigetvár) and Kılıç Ali Paşa Hamamı (Istanbul)
Dr. Nurdan Yücel, Samsun Makina Sanayi, Türkiye
- 11:20–11:40 Microstructural, Tribological, and Corrosion Characterization of Micro-Arc Oxidized Thixomoulded AZ91D Magnesium Alloy Sheets
Faiz Muhaffel, Istanbul Technical University, Türkiye
- 11:40–12:00 Improvement of Mechanical Properties and Corrosion Resistance of die Casting Aluminum Alloy
Tezer Karayol, Yıldız Teknik Üniversitesi, Türkiye

Intelligent Digital Casting and Materials Genome Engineering

Çelikel 2 Hall

Wednesday, 21 October 2026

* Invited Speaker

Chair: Prof. Qingyan Xu

Co-chair: Hao Shi

09:00–10:25

09:00–09:25* Utilizing Non-Destructive Microstructural Characterization for Enhanced Component Reliability towards Intelligent Digital Casting
* C. Hakan Gür, ODTÜ (Middle East Technical Univ), Türkiye

09:25–09:45 Modeling, Simulation and Software for Macro Process and Micro Structure in Casting Liquid Forming Process
Yuhong Zhao, North University of China, China

09:45–10:05 Numerical Simulation and Prediction of Shrinkage Defects in Ductile Iron
Yajun Yin, Huazhong University of Science and Technology, China

10:05–10:25 SupreCAST: A Cloud-Native Platform for Casting Process Development and Quality Control
Hao Shi, Beijing Supreium Technology Co., Ltd, China

10:20 - 11:00 Coffee Break

Chair: Prof. Qingyan Xu

Co-chair: Prof. Muralidhar Manapuram

11:00–12:20

11:00–11:20 ICME for Directional Solidification of Ni-based Superalloy Casting
Qingyan Xu, Tsinghua Univ, China

11:20–11:40 Optimizing Investment Casting Processes for Large Complex Thin-Walled Titanium Alloys Using Small-Data Physics-Constrained Bayesian-PINN Model
Qihang Yang, Tsinghua University, China

11:40–12:00 Multi-objective Design of High-Performance Nb-Si Based Alloys via Interpretable Machine Learning
Wei Chen, Huazhong University of Science and Technology, China

12:00–12:20 Development of Casting Genome for Two-Wheeler Piston Casting by Three-Dimensional Printing Process: A Study
Muralidhar Manapuram, North Eastern Regional Institute of Science & Technology, India

Lean and Agile Manufacturing in Foundries: Optimizing Processes for Efficiency and Cost Reduction

Kutes 1 Hall

Wednesday, 21 October 2026

* Invited Speaker

Chair: Asst. Prof. Dr. Hüsnüye Fırat

Co-chair: Muneer Ahmed

09:00–10:40

09:00–09:20 Ai Powered Greencasting for High-Definition Thermoregulation
Mauro Fassina, Gefond srl, Italy

09:20–09:40 Effect of Furnace Layout on Temperature Field Uniformity during Heat Treatment of Investment-Cast Turbine Blades
Ruiyuan Zhang, Northwestern Polytechnical University, China

09:40–10:00 Thixomolding of Complex Thin-Walled AZ91D Magnesium Alloy Components
Jian Dong, Harbin Institute of Technology School, China

10:00–10:20 Safety, Quality and Efficiency innovation in HPDC process
Muneer Ahmed, Engcast Ltd, United Kingdom

Fabrication and Machining of Cast Materials: Challenges and Advances

Kutes 2 Hall

Wednesday, 21 October 2026

* Invited Speaker

Chair: Hongze Fang

Co-chair: Stuart Jackman

09:00–10:40

09:00–09:20 Evaluation of Machinability in Solid-Solution Strengthened Ferritic Spheroidal Graphite Cast Iron Using Frequency Characteristic Analysis
Kenta Kusumoto, Muroran Institute of Technology, Japan

09:20–09:40 Verification of the Usefulness and Operability of a Molten Metal Transport Control System Using an Overhead Crane
Akihiro Kaneshige, National Institute of Technology, Toyota College, Japan

09:40–10:00 Elimination of Porosity-Related Leakage in Cast Components by Metal Impregnation: Industrial Experience from Maldaner
Abdulkaki Ayyıldız, Maldaner Metal Emrenye San. ve Tic. A.Ş., Türkiye

10:00–10:20 Orbital Friction Welding: A New Process for Joining End to End Profiles from Advanced Materials
Stuart Jackman, Jackweld, United Kingdom

Poster Session

M2 Foyer Area

Wednesday, 21 October 2026

14:00-15:20

Additive Manufacturing in Foundries: Materials and Process Innovations

Design and 3D Printing of Novel Conformal Cooling Molds Driven for Controlling the Surface Microstructure of High-Quality Cast Iron
Rafał Dańko - Poland

Development of a Single-Piece Aluminum Chassis Casting for Electric Trucks Using Binder Jet 3D-Printed Sand Molds as an Alternative to High-Pressure Megacasting
Batuhan Yıldız - Türkiye

Applications and Advantages of 3D Sand Printers in the Casting Industry
Emre Gürsoy - Türkiye

Advancements in Cast Iron and Cast Steel Technologies

Directional Solidification of Single-Crystal Turbine Blades: Process Parameters, Defects, and Simulation Approaches
Müge Akdemir - Türkiye

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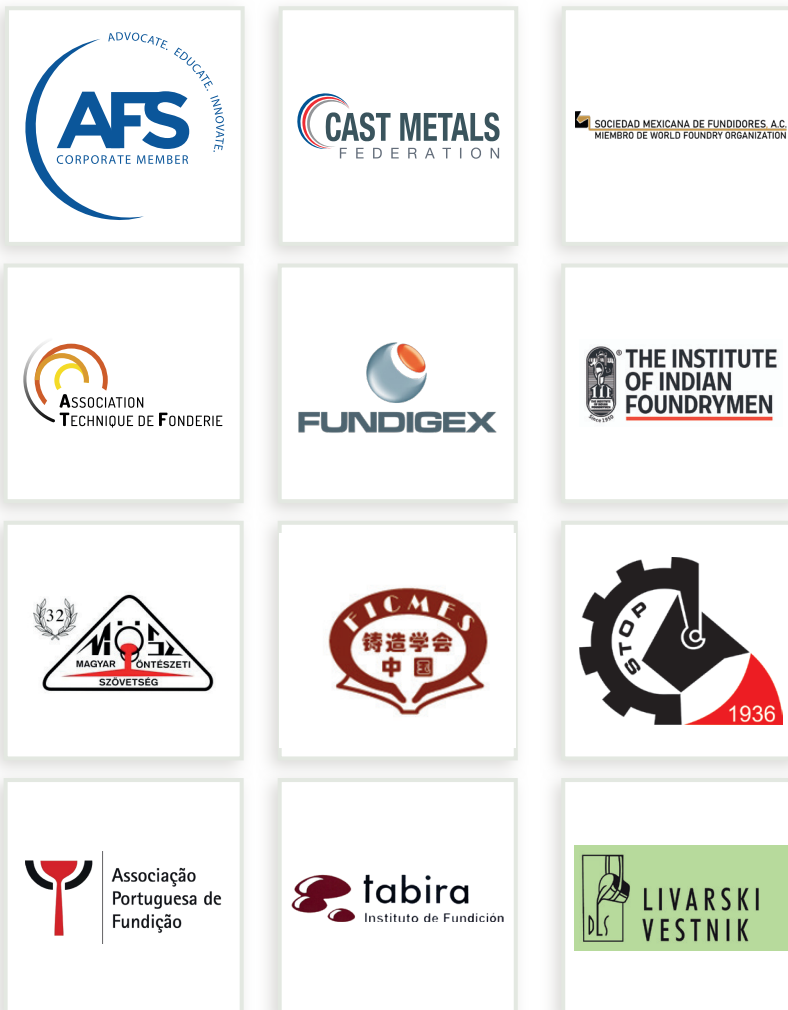
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One Century, One Community, A Shared Future

A Century of Connecting the Foundry World

In 2026, the World Foundry Organization (WFO) reaches a remarkable milestone: 100 years of international cooperation, knowledge exchange and commitment to the foundry industry.



A Century of History - The WFO Through the Years



Andrew Turner (UK), former General Secretary and actual Secretary

Looking back over the history of the WFO, some figures immediately stand out. 84 Presidents from 27 countries have led the organization since its foundation, with 18 still living today. The WFO has also had just 6 General Secretaries in its first century: Tom Makenson (1926–1954), George Lambert (1954–1960), Dr. Muller (1960–1966), Jürg Gerster (1966–2001), Andrew Turner (2001–2022), and José Javier González (2022–present).

For Turner, however, the most important lesson of the past century is not simply the growth of production or the changing position of individual countries. It is the ability of the WFO to remain relevant while the industry around it has transformed: *“When you look back over 100 years, the WFO has always been about bringing people together. The industry changes, but that need for cooperation remains.”*

Voices from the WFO’s Journey

Throughout its history, the WFO has been shaped by the people who have led it and by the international community around them. As part of the centenary, several former Presidents are reflecting on their experience, the changes they witnessed and their expectations for the future.

Despite their different experiences, their reflections share a common message: the WFO’s greatest strength lies in its ability to connect people across countries and generations. As Danko puts it, its legacy is “a century of building bridges” between countries, science and industry, traditions and new technologies, and successive generations. That legacy provides a strong foundation for the century ahead.



From Participation to Impact - The WFO Today

José Javier González (Spain), General Secretary

José Javier González has experienced the WFO from two perspectives: first through his involvement in its activities and Executive Secretariat, and since 2022 as General Secretary. From that position, he has seen an organization with a strong foundation begin to develop a more active and outward-looking role.

At the same time, the WFO's agenda has broadened. Decarbonisation, energy costs, circularity, secure supply chains, materials, digitalisation, artificial intelligence, skills and competitiveness are increasingly interconnected. The foundry industry cannot address these issues in isolation, and the WFO has a role in bringing them into a common international conversation.



As stated by him, *"The fundamental idea remains the same as it was in 1926: bringing the foundry world together. What has changed is the number of ways in which that connection can create value. The WFO does not need to become a different organization to remain relevant. We need to make better use of what we already have: our members, their knowledge and their willingness to cooperate."*

Looking Ahead - Building the WFO of the Next Century

Katarzyna Liszka (Poland), Executive Secretary

Katarzyna Liszka joined the WFO as Executive Secretary in January 2026, at the beginning of its centenary year. Her perspective is therefore naturally less about looking back and more about considering what the organization can become in its second century.

The WFO's second century will therefore be about connecting its heritage with new ways of working: engaging new generations, embracing digital opportunities and ensuring that the organization remains a relevant voice for the industry. In her words, *"We do not need to reinvent the WFO. We need to build on its extraordinary legacy and make it fit for the next generation."*

For Liszka, the centenary is not a conclusion. It is the starting point for that next chapter.

100 Years and Beyond

The WFO centenary is more than a celebration of the past. It is a bridge between generations, a moment to recognise what has been built and to consider the responsibility that comes with carrying it forward.

The first 100 years are our legacy. **The next 100 are our responsibility.**



The World Foundry Organization Secretariat Team

50 YEARS OF EXPERIENCE, A JOURNEY INTO THE FUTURE



A journey that began in 1976, when a group of foundry industrialists came together around a common purpose, has today evolved into a strong institutional legacy spanning half a century.

In 2026, the Turkish Foundry Association – TÜDÖKSAD celebrates the 50th anniversary of its foundation.

The story of TÜDÖKSAD is also the story of the remarkable transformation of the Turkish foundry industry over the past half-century.

The foundations of the Association were laid in the 1970s, driven by the idea of working together to find solutions to the common challenges facing the industry. Following the formal establishment of TÜDÖKSAD on 25 October 1976, the Association became much more

than a professional organization representing the industry's concerns before the relevant authorities. It developed into a common platform that fostered solidarity, knowledge sharing and a culture of collective action among foundry industrialists.

Over the past 50 years, Türkiye, the world and industry itself have undergone profound change.

Production technologies have advanced. Türkiye's industrial infrastructure has expanded. Turkish foundries have become important players in global supply chains. Export markets have grown, while quality, efficiency, digitalization, sustainability and human capital have become fundamental elements of the industry's competitiveness.

Throughout this transformation, TÜDÖKSAD has evolved alongside the industry.

In addition to serving as the collective voice of its members, TÜDÖKSAD has contributed to the development of the Turkish foundry industry through its relationships with public institutions, universities, and national and international organizations. From technical knowledge sharing and industry-specific training to international representation, publishing, congresses, exhibitions and professional solidarity, the Association has continued to serve as a common platform for the industry.

TÜDÖKSAD's accession to the World Foundry Organization in 1989 marked an important milestone in its international journey. This was followed by increasingly strong relations with the European foundry industry. Enhancing the international visibility of the Turkish foundry industry and strengthening its ties with the global foundry community became one of the Association's core missions.

One of the most memorable milestones of this journey came in 2004, when TÜDÖKSAD hosted the 66th World Foundry Congress in Istanbul, bringing together foundry professionals from around the world in Türkiye.

Twenty-two years later, the global foundry community is once again gathering in Istanbul.

And the timing of this reunion could hardly be more meaningful.

The year 2026 marks the 50th anniversary of TÜDÖKSAD and the centenary of the World Foundry Organization. The convergence of these two significant anniversaries in Istanbul on the occasion of the 76th World Foundry Congress creates a powerful bridge between the past and the future.

Looking back today at TÜDÖKSAD's 50-year history, we see far more than meetings, congresses, publications or institutional activities.

Behind this history are people.

The pioneering industrialists who worked to establish the Association; past presidents and Boards of Directors; members and employees; academics, engineers, suppliers and countless stakeholders who have contributed to the development of the industry...

This collective effort, passed down from one generation to the next, is TUDÖKSAD's most valuable legacy.

Because industry is not built solely on factories, machinery and production figures. It is also built on knowledge, experience, trust, solidarity and the determination to create a shared future.

This is the very essence of TUDÖKSAD's half-century story.

Now, a new era lies ahead.

Digitalization, artificial intelligence, low-carbon production, the circular economy, energy and resource efficiency, new materials, and changing global supply chains are reshaping the future of the foundry industry.

Just as it has throughout its first 50 years, TUDÖKSAD will continue to stand alongside the industry in the next 50—fostering collective knowledge, facilitating the exchange of expertise and experience, and advancing the international competitiveness of the Turkish foundry industry.

Our journey, which began in 1976, is now 50 years strong.

We look back on our past with respect, at the present with confidence, and towards the future with the same enthusiasm that has guided us from the beginning.



For 50 years, we have been producing, evolving and shaping the future together with our industry.

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2026**



76th Centenary World Foundry Congress

***A Bright New Century:
Shaping the
New Ecosystem***

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