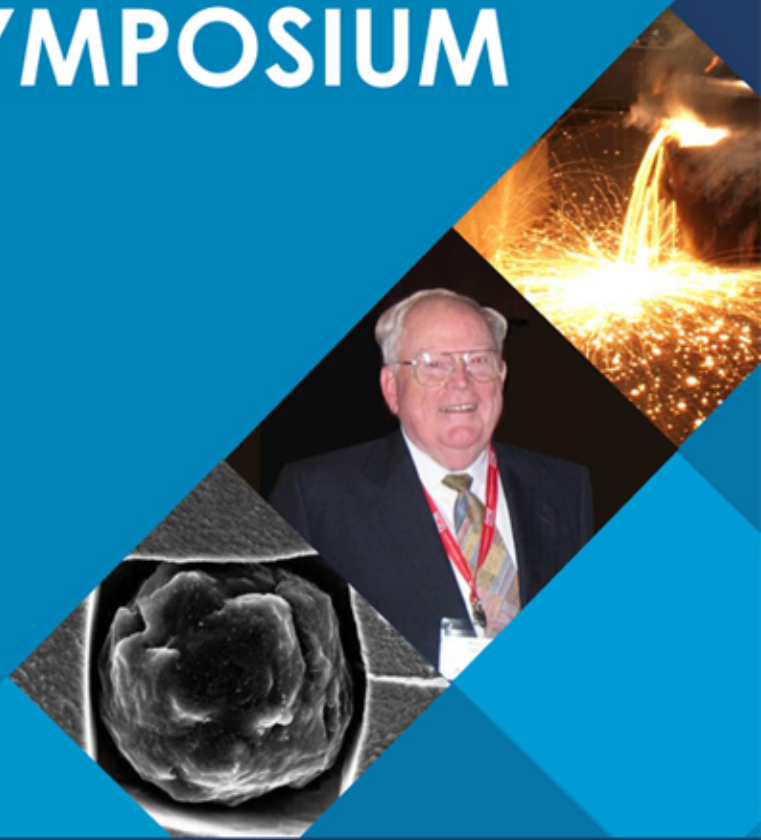


2nd CARL LOPER CAST IRON SYMPOSIUM

Latest advances and
applications of cast iron

SEPTEMBER 30th -OCTOBER 1st, 2019
Bilbao (Spain)



ORGANIZERS



SPONSORS

GOLD
SPONSOR



SILVER
SPONSORS



BRONZE
SPONSOR



COLLABORATOR

EUSKO JAURLARITZA



GOBIERNO VASCO

HEZKUNTZA SAILA

DEPARTAMENTO DE EDUCACIÓN

Honoring Dr. Carl R. Loper Jr., professor of many professors, the focus of this conference is to review the fundamentals of cast iron solidification and highlight the latest research, technology and developments in metallurgy, production and applications of the material.

Taking advantage of the 10th anniversary of the 1st Carl Loper Symposium held at Madison, Wisconsin (USA), the 2nd Carl Loper Symposium is being organized by IK4-Azterlan Metallurgy Research Centre, SPAIN, and includes Key Note invited and contributed papers from leading academic and industrial community.

This event will be hold every three years with the scope to disseminate the latest advances and applications of cast iron.



Congress Theme: "LATEST ADVANCES AND APPLICATIONS OF CAST IRON"

The 2nd Carl Loper Symposium on Cast Iron Technologies will gather 40 scientific and industrial papers on the following fields of knowledge:

- Cast Iron (spheroidal, lamellar and compacted graphite cast iron, ADI and alloyed irons).
- Corrosion, environment and sustainability.
- Foundry technologies, equipment, manufacturing, tools, robotics and automation.
- Energy.
- Advanced engineering: design, calculation and simulation tools.
- Heat, cryogenic and surface treatments.
- Molding, core making and rapid prototyping technologies.
- Pattern and tool making.

Social events

- **Optional pre-tour to San Sebastian** on Sunday, September 29th, 2019
- **Conference dinner** on Monday evening, September 30th, 2019

Conference venue: EUSKALDUNA JAUREGIA BILBAO

Located in the center of Bilbao, near the Guggenheim Bilbao museum, it is easy access to many wonderful hotels allowing attendees to come on foot, Tran, Metro and less than 20 minutes away from Bilbao (BIO) airport.



Conference Board Members

Jon Sertucha (ESP)
Susana Méndez (ESP)
Ramón Suárez (ESP)

Doru M. Stefanescu (USA)
Tom Prucha (USA)
José Javier González (ESP)



Scientific Committee

Roberto Boeri (ARG)
Peter Schumacher (AUT)
Jianxun Zhu (CHN)
Ricardo Aristizabal (COL)
Babette Tonn (DEU)
Dierk Hartmann (DEU)
Adel Nofal (EGY)
Jacques Lacaze (FRA)
Steve Dawson (GBR)

Branko Bauer (HRV)
Franco Zanardi (ITA)
Hideyuki Yasuda (JPN)
Sung-Bin Kim (KOR)
Manuel Castro (MEX)
Torbjorn Skaland (NOR)
Marcin Gorny (POL)
Vitor Anjos (POR)

Oscar Marcelo Suárez (PRI)
Iulian Riposan (ROU)
Kulani Mageza (RSA)
Primož Mrvar (SVN)
Attila Dioszegi (SWE)
Sarum Boonmee (THA)
Simon Lekakh (USA)
Omar Quintero Sayago (VEN)



SYMPOSIUM FEES*

	Regular fee Until Sept. 1 st	Late fee Sept. 2 nd –16 th
Full fee (Professionals)	415€	470€
Students	225€	265€
Reduced fee (Scientific Committee, sponsors)	320€	375€
Conference dinner for accompanying person	100€	120€

(*) Applicants from Spain should add V.A.T. (21%) in all cases.
Included in the Registration fees: Conference dinner (Sept. 30th), coffee break snacks and luncheon.
Not included in the Registration fees: Accommodation, transport and trip to San Sebastián (Sept. 29th).



Registration, contact and further information

WEBPAGE. <http://www.azterlan.es/en/carl-loper-symposium.html>

TELEPHONE. (+34) 94 6215470 · **EMAIL.** CarlLoperSymposium@azterlan.es

SYMPOSIUM SECRETARY. Olatz Garro.



MONDAY, SEPTEMBER 30TH

8:00–09:00	Registration	
8:30–09:10	Welcome. R. Suárez (IK4-AZTERLAN)	
09:10–09:55	KNL (Title to be defined). J. Fesch (SAKTHI-PORTUGAL)	
	Hall 1	Hall 2
10:00–10:20	Innovative material concepts for lightweight design. E. Wüller, D. Engels, M. Vißer	Graphite degeneration in high Si, Mg-treated iron castings – sulphur and oxygen addition effects. D. Anca, M. Chisamera, S. Stan, I. Riposan
10:25–10:45	Time-evolution of solidification structure in ductile cast iron with hyper-eutectic compositions. K. Chatcharit, A. Sugiyama, K. Morishita, T. Narumi, H. Yasuda	Effect of cooling rate on graphite morphology and mechanical properties in high silicon ductile iron castings. B. Bauer, I. M. Pokopec, M. Petrič, P. Mrvar
10:50–11:10	3D-STEM observation of a multiphase nucleus of spheroidal graphite. A. Pugliara, L. Laffont, T. Hungria, J. Lacaze	Oxidation resistance of high silicon ductile cast irons with and without molybdenum and antimony additions. M. A. Arenas, S. Méndez, A. Niklas, R. González, A. Conde, J. Sertucha, J. J. de Damborenea
	Coffee break	
11:30–11:50	Solidification path of cast iron alloyed with 9% Al. A. Nofal, A. Rezk, N. Sobhy	Microstructure changes during solidification of cast irons - Effect of chemical composition and inoculation on competitive spheroidal and compacted graphite growth. A. Regordosa, U. de la Torre, A. Loizaga, J. Sertucha, J. Lacaze
11:55–12:15	Experimental simulation of solidification thick-walled ductile iron. C. Dommaschk, G. Wolf; N. Laskowski	Fracture micromechanisms evaluation of high strength cast irons under thermomechanical fatigue conditions. D. G. Bon, M. H. Ferreira, W. W. Bose Filho, W. L. Guesser
12:20–12:40	Computational modeling of shrinkage porosity formation in spheroidal graphite iron: a proof of concept and experimental validation. E. S. Kweon, D. H. Roh, S. B. Kim, D. M. Stefanescu	Microstructure of compacted graphite iron near critical shrinkage areas in cylinder blocks. A. K. Ramos, A. Diószegi, W. L. Guesser, C. S. Cabezas
	Lunch	
14:00–14:35	KNL New liner material for demanding two stroke marine engines. P. Samuelsson (MAN)	
14:40–15:00	Comparing sands from different reclamation processes for use in the core room of cylinder heads and cylinder blocks production. E. C. Silva, I. Masiero, W. L. Guesser	The role of primary austenite morphology in hypoeutectic CGI alloys. J. C. Hernando, J. Elfsberg, E. Ghassemali, A. K. Dahle, A. Diószegi
15:05–15:25	Effects of various elements on primary crystallization temperature and carbon equivalent of hypoeutectic cast iron. T. Kanno, Y. Iwami, I. Kang, S. Koriyama	Electron probe microanalysis improves understanding of the solidification kinetics of ductile and compacted graphite iron. B. Domeij, A. Diószegi
15:30–15:50	Effect of the starting microstructure in the formation of austenite at the intercritical range in ductile iron alloyed with nickel and copper. H. D. Machado, R. E. Aristizábal, C. Garcia-Mateo, I. Toda-Caraballo	Examination of the size and morphology of austenite grains in lamellar graphite cast iron. M. G. López, J. M. Massone, R. E. Boeri
	Coffee break	
16:10–16:30	Reclassification of spheroidal graphite ferritic pearlitic and ausferritic austempered ductile cast irons grades according to design needs. F. Zanardi	Pearlite refining strategies for hypoeutectic gray cast iron. M. L. Lima, E. Albertin, E. R. Correa, R. B. Rabello, S. Uehara
16:35–16:55	Application of ADI in a crushed coal delivery and filtering system. A. Rimmer	Volume change related defect formation mechanisms in lamellar graphite iron (LGI). P. Svidrů
17:00–17:30	Austempered ductile iron with dual microstructures – effect of initial microstructure on the austenitizing process. W. L. Guesser, C. L. Lopes, P. A. N. Bernardini	On the thermal analysis and microstructure observations of titanium-alloyed gray iron. S. Boonmee, K. Worakhut
17:35–17:55	Effect of thermomechanical processing on structure and properties of dual-phase matrix of ADI with different Si-contents. A. Nofal, M. Soliman, H. Palkowski	The development of dual graphite iron by sulfurization method. S. Boonmee, S. Rassamipat
18:00–18:20	Product development of a high chrome white cast iron to yield consistent physical and mechanical properties. S. Mavhungu, D. Sekotlong, K. Mageza	

TUESDAY, OCTOBER 1ST

8:00–08:30	Registration	
	Hall 1	
08:30–09:05	KNL What will be the role of cast iron in the automobile in 15-20 years? M. Albertalli & L. Vaissière (Renault)	
09:10–09:30	A user-friendly approach to feeder design for cast iron parts. T. V. Hoblea	
09:35–09:55	Process improvements of ferritic ductile irons to achieve higher impact properties at subzero temperatures. K. Mageza, F. Canei, S. Mavhungu, C. Banganayi	
10:00–10:20	The relation between the damping capacity and tensile strength of nodular cast irons for braking system components. I. Pereira, G. Alonso, V. Anjos, L. F. Malheiros, R. Suárez	
10:25–10:45	Light-weighting technologies for high performance ductile iron sand castings. J. Shah	
	Coffee break	
11:05–11:25	Growth of spheroidal graphite: light versus scanning and transmission electron microscopies. J. Bourdie, J. Lacaze, C. Josse, L. Laffont	
11:30–11:50	Effect of magnesium on the solid-state nucleation and growth of graphite during annealing of white iron. G. Alonso, D. M. Stefanescu, R. González, R. Suárez	
11:55–12:15	Effect of antimony on graphite growth in ductile iron. L. Dekker, B. Tonn, Gerhard Lilienkamp	
12:20–12:40	Ultrafine spheroidal graphite iron castings by use of thin-walled permanent molds. H. Itofuji, K. Edane, T. Sakatani, M. Itamura	
	Lunch	
14:00–14:35	KNL Automotive powertrain trends and the market opportunity for cast irons. S. Dawson (SinterCast)	
14:40–15:00	Influence of the high-power thermal plasma heating (HPTP) in the properties of the ductile iron foundry components. A. Rubio, K. Zabala, J. M. López	
15:05–15:25	Discriminating between sound and defected ferritic ductile irons through tensile data analysis. G. Angella, M. Cova, G. Bertuzzi, F. Zanardi	
15:30–15:50	Thermal fatigue testing of spheroidal graphite cast iron for HPDC. P. Mrvar, S. Kastelic, M. Terčelj, M. Petrič, B. Bauer, D. Mitrović	
	Coffee break	
16:10–16:30	Ductile iron front-end ultrasonic nodularity determination using standard coupons. J. Cree, M. Robles Jr., A. Hoover, N. Thornberry, S. Beckley	
16:35–16:55	Velocity measurement and verification with modeling of naturally pressurized gating systems. K. Metzloff, K. Mageza, D. Sekotlong	
17:00–17:20	The effect of thermal processing and chemical composition on secondary carbide precipitation and hardness in high chromium cast irons. M. A. Guitar, U. P. Nayaka, D. Britza, F. Mücklich	
17:25–17:45	New casting technologies: Ablation technology for iron casting. J. Garay	

(*) KNL: Keynote Lecturer