10th EUROPEAN SLAG CONFERENCE

8th-11th October 2019, Thessaloniki, Greece

Slag based products – best practices for Circular Economy

Conference Program, October 8th – 11th, 2019

Tuesday, October 8th, 2019

17:00 – 20:00 Registration

19:00 – 20:00 Reception

Wednesday, October 9th, 2019

8:00 – 9:00 Registration

9:00 – 9:15 **Welcome**

Ioanna Papayianni, + Konstantinos Katsifarakis (Dean of Polytechnical School), Aristotle University of Thessaloniki

9:15 – 9:30 **Opening**

Thomas Reiche, Chairman EUROSLAG

Session 1: Legal framework

Session Chairperson: Jean-Paul Judson / Jérémie Domas (after lunch)

	Title	Speaker
9:30 – 9:45	European Circular Economy: Threats and opportunities for the steel sector	**Aurelio Braconi**, Policy Officer on Circular Economy and Raw Materials, EUROFER (European Steel Association)
9:45 – 10:00	The circular economy framework of the EU and its implications for slug related products	**George Kremlis,** Honorary Director of European Commission (Councillor for Circular economy)
10:00 – 10:15	Greek National Circular Economy Strategy. Institutional setting,main challenges for the future	**Vassilios Liogkas,** General Secretariat for Environment, Hellenic Ministry of Environment and Energy
10:15 – 10:30	Steel Slag processing in Greece	**Andreas Chasiotis,** General Manager, AEIFOROS, Greece
10:30 – 12:00	ROUND TABLE DISCUSSION Challenges and opportunities for the ferrous slag value chain to contribute to the EU Circular Economy Moderator: **Jean-Paul Judson, Nowmore**	**Aurelio Braconi**, *EUROFER* **George Kremlis**, *European Commission* **Thomas Reiche**, *EUROSLAG* **Andreas Chasiotis,** *AEIFOROS* **Vassilios Liogkas**, *Hellenic Ministry of Environment and Energy* **Ioanna Papayianni**, *Aristotle University of Thessaloniki*
12:00 – 1:30	**Lunch**	
1:30 – 1:50	Hurdles in the Iron and Slag Industry: An Introspective Look and Path Forward	**Charles Ochola,** *NSA National Slag Association, USA*
1:50 – 2:10	Reach registration of ferrous slag - state of the art	**Hans Kobesen,** *Tata Steel Mainland Europe, The Netherlands*
2:10 – 2:30	Barriers to innovation encountered by European process industry	**Agnieszka Morillon**, *FEhS - Institut für Baustoff-Forschung e.V., Germany*
2:30 – 2:50	Environmental impact allocation to industrial by-products: the example of electric arc furnace slag utilization in construction	**Alexandros Liapis,** *Aristotle University of Thessaloniki, Greece*
2:50 – 3:10	Ten years and three different handbooks for using slag	**Björn Haase,** *Höganäs Sweden AB, Sweden*
3:15 – 3:45	**Coffee break**	

Session 2: Utilization and best practices

Session Chairperson: Ioanna Papayianni

	Title	Speaker
3:50 – 4:10	Business opportunities for European slag recycling companies in Russia	**Andrey Korablin,** *SmartScap Limited, Russia*
4:10 – 4:30	An alternative approach to sourcing blast furnace slag for use in concrete	**Michael McCarthy,** *University of Dundee, United Kingdom*
4:30 – 4:50	Use of electric arc furnace slag in concrete	**Pascal Leconte,** *Centre Technique et de Promotion des Laitiers Sidérurgiques (CTPL), France*
4:50 – 5:10	Development of high-density geopolymer concrete for breakwater armour units for Port Kembla Harbor	**Craig Heidrich,** *Australasian Slag Association, Australia*
5:10 – 5:30	**Discussion**	

18:30 Departure with buses, from Conference venue to Gala Dinner venue

Thursday, October 10th, 2019

Session 2: Utilization and best practices

Session Chairperson: Nick Jones

	Title	Speaker
9:00 – 9:20	Insight of steel industry by-products recycling in Greece	**Andreas Chasiotis,** *AEIFOROS, Greece*
9:20 – 9:40	How far away is the Steel Industry from the Target NoWASTE?	**Henning Schliephake,** *Georgsmarienhütte GmbH, Germany*
9:40 – 10:00	Forced air granulation of secondary metallurgical slag	**Fabio Praolini,** *Dalmine S.p.A., (Tenaris S.A.), Italy*
10:00 – 10:20	Slag based fertilizer – best practice for circular economy	**Uwe Pihl,** *FEhS – Institut für Baustoff-Forschung e.V., Germany*
10:20 – 10:40	Properties of iron and steel slag hydrated matrix exposed in sea area for long period	**Yotaro Inoue,** *JFE Steel Corporation, Japan*
10:40 – 11:00	Removal of zinc and lead from steel mill sludge and dust	**Marina Spanka,** *Ferro Duo GmbH, Germany*
11:00 – 11:30	**Coffee break**	

Session 3: Research and innovation

Session chairperson: Michael McCarthy / Agnieszka Morillon (after lunch)

	Title	Speaker
11:30 – 11:50	The glass structure of granulated blast furnace slag and its effect on reactivity	**Andreas Ehrenberg,** *FEhS – Institut für Baustoff-Forschung e.V., Germany*
11:50 – 12:10	New activation routes for early strength development of granulated blast furnace slag	**Judit Kaknics,** *ArcelorMittal Maizieres Research SA, France*
12:10 – 12:30	Solid state NMR investigation of titanium's role on the hydration of industrial slag: a model glass study	**Abel Danezan,** *CEMHTI-CNRS, France*
12:30 – 12:50	Heavyweight concrete with ferronickel and steel slag aggregates	**Eleftherios Anastasiou,** *Aristotle University of Thessaloniki, Greece*
1:00 – 2:00	**Lunch**	
2:00 – 2:20	Durability of concrete prepared with electric arc furnace slag aggregates	**Kosmas K. Sideris,** *Democritus University of Thrace, Greece*
2:20 – 2:40	Influence of the bitumen grade on the optimization process of asphalt mixes prepared with steel slag aggregate only	**Emiliano Pasquini,** *DICEA – Dipartimento di Ingegneria Civile, Edile e Ambientale, Università di Padova, Italy*
2:40 – 3:00	Use of steel slag in earthworks	**Elissavet Barka,** *Technische Universität München, Germany*
3:00 – 3:20	Leaching behavior of molybdenum in electric arc furnace slag	**David Algermissen,** *FEhS – Institut für Baustoff-Forschung e.V., Germany*
3:30 –4:00	**Coffee break**	
4:00 – 4:20	Behavior of EAF slag reduction containing Cr_2O_3 and MnO	**Hiroshi Fukaya,** *The Japan Steel Works, Ltd., Japan*
4:20 – 4:40	Thermal behavior of inorganic polymers synthesized from Fe-rich slag	**Jorn Van De Sande,** *Vrije Universiteit Brussel, Belgium*
4:40 – 5:00	Alkali activation of ladle furnace slag (LFS). effect of fineness, curing regime and concentration of activator on mechanical and physical characteristics of LFS pastes	**Fotini Kesikidou,** *Aristotle University of Thessaloniki, Greece*
5:00 – 5:10	**Concluding remarks**	**Thomas Reiche**, *EUROSLAG, Germany*

Friday, October 11th, 2019

Technical visits

Please note that the time schedule is indicative. Since the visits will take place outside the city of Thessaloniki, there is the possibility of slight variations (±30 minutes), due to unforeseen circumstances, such as traffic delays etc.

Group 1: Visit to a road pavement constructed with slag

8:30	Departure from Conference Hall
9:30	Arrival at "Profitis" junction of Egnatia Odos highway, that connects Thessaloniki with Kavala. The junction is located between the lakes Koroneia and Volvi. Surface layer of the studied pavement is constructed partially with slag (section 1) and limestone (section 2) aggregates. On-site non-destructive tests will showcase the differences between the two. Also, cores will be drilled in order to examine the layering of the pavement.
11:30	Departure from site
Optional Archaeological site visit*	
13:00	Arrival at the archaeological park of Dion (Zeus's sanctuary), a site of extraordinary natural and cultural beauty, at the foot of Mount Olympus. A guided tour will take place at the ancient urban and sanctuaries' site.
15:00	Light lunch
16:00	Departure from Dion
17:00	Arrival at Conference Hall

Group 2: Visit to a ready mixed concrete industry to attend production and testing of concrete with steel slag aggregates

8:30	Departure from Conference Hall
9:00	Arrival at INTERBETON Ready-mixed Concrete Plant, which is a part of business group of TITAN. A concrete production designed for Roller Compacted Concrete (RCC) road pavement, will take place, utilizing steel slag aggregates. Properties of fresh concrete (workability, density etc) will be measured on-site. Properties on previously prepared hardened specimens will be measured, too (strength, abrasion resistance etc).
11:00	Departure from plant
Optional Archaeological site visit*	
12:00	Arrival at the archaeological park of Dion (Zeus's sanctuary), a site of extraordinary natural and cultural beauty, at the foot of Mount Olympus. A guided tour will take place at the ancient urban and sanctuaries' site.
15:00	Light lunch
16:00	Departure from Dion
17:00	Arrival at Conference Hall

*The visit to the Archaeological Park of Dion is included in the Registration. However, since it is optional, the participants that are not interested to attain it, will have the option to return to Thessaloniki city center after the technical visit. During the Registration hours at the afternoon of the 8th and morning of 9th of October, they will have the opportunity to declare their interest at the Registration desk.