Circular economy in steel industry

Mobilizing the industry towards a clean and circular economy represents a key element of the European Green Deal, in which the steel sector is a pillar of this strategy. Circular economy is one of the CO₂ mitigation pathways, while resource efficiency means an enhanced steel recycling (scrap use) and a reuse of by-products, as well as by-product exchange with other sectors. Thus, value of residues is increased by waste reduction.

Due to the current COVID-19 situation, a web-workshop will be held with a total of 4 sessions and following topics will be discussed during the sessions:

• Valorization of residues
• Materials reuse with high recycling rate and recovery of metal and mineral phases
• Widening applications for slags from processes using DR/HBI
• C-rich residue streams as substitute of coal as reducing agent and / or energy source
• Life Cycle Assessment analysis
• Circular economy business models

Organisation Committee

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The Project REUSteel (“Dissemination of results of the European projects dealing with reuse and recycling of by-products in the Steel sector”) is supporting the workshop. REUSteel is funded by the Research Fund for Coal and Steel (RFCS) under grant agreement No. 839227

Participation fee

• 50 € per person for 1 session
• 150 € per person for all sessions

Company fees (all sessions)

• 250 € for 2 persons
• 300 € for 3 persons
• 350 € for >3 persons

Fee is used by ESTEP for workshop organization as well as generation and provision of the proceedings and related publications. Registration form is available on https://www.estep.eu/events/resi4future-ws/

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Sharing experiences, needs, best practices, innovative solutions for use and valorization of residue streams from both, BF-BOF, and EAF routes. During this event, technical solutions contributing to the overall goals defined in the Circular Economy Action Plan and the Green Deal of the European Union will be presented.
Session 1: EU Green Deal & Circular Economy & RFCS Project REUSteel
6th November 2020

Session 2: Internal residue recycling
13th November 2020

Session 3: Secondary resources from non-steel sectors
20th November 2020

Session 4: Slag valorization
27th November 2020

EU Green Deal & Circular Economy & RFCS Project REUSteel - Chair V. Colla (SSSA)
09:00 Opening words - ESTEP
09:10 EU Green Deal and Circular Economy in steel industry - EUROFER
09:35 RFCS Project REUSteel - SSSA
10:00 Metal recovery from iron- and steelmaking residues - Process overview and perspectives - BFI
10:20 Addressing the right by-product recovery steps in steelmaking chain: support tools for slag recovery, recycle and reuse - SSSA
10:40 Lighthouse Plant "Acciaio 4.0": an example of integration environmental aspect in the production process - ORI Martin & STIIMA CNR
11:00 Plenary discussion with authors
~11:20 Closure of the session

Internal residue recycling - Chair E. Malfa (Tenova)
09:00 Melt bath injection for recovery of zinc and iron from zinc and/or iron containing residues - BFI
09:20 Metal recovery through the HLsarna process - CRM & Tata Steel
09:40 2sDR - an innovative, zero-waste 2 step dust recycling process - Primetals
10:00 Solutions for internal recycling of steelmaking dusts and sludges - K1-MET & voestalpine
10:20 Selective ammoniacal extraction process for valorizing Zn-rich BOF sludges (SAMEX) - Tecnalia & ArcelorMittal
10:40 Plenary discussion with authors
~11:00 Closure of the session

Secondary resources from non-steel sectors - Chair J. Rieger (K1-MET)
09:00 Circular economy approach to reduce fossil fuels consumption in ironmaking process - CSM
09:20 End-of-life carbon fiber reinforced polymers in steelmaking - accessing a C-rich residue stream as alternative reducing agent - BAM & RWTH Aachen
09:40 Material recycling and industrial symbiosis: a case study in the district of Brescia - CSM
10:00 Waste plastic as auxiliary Blast Furnace reducing agent - voestalpine & K1-MET
10:20 Valorisation alternatives for refractory waste - Sidenor
10:40 New possibilities of carbon substitution in EAF through polymer injections - the demonstration case of Feralpi Siderurgica - Feralpi
11:00 Plenary discussion with authors

Slag valorization - Chair A. Morillon (FEhS)
09:00 Final development step before to commercialize the dry slag granulation technology - Primetals
09:20 Slag production and treatment in the future of green steelmaking - Tenova
09:40 New sectors for EAF slag application - FEhS
10:00 The use of slags for agriculture purposes - SSSA & FEhS
10:20 Tenova wet and dry granulation technologies to valorize steelmaking slag as green raw material - Tenova
10:40 Studying innovative applications of white slag in the lime value chain - STIIMA CNR
11:00 Plenary discussion with authors
~11:20 Closure of the session