

# Program of the 185<sup>th</sup> ISIJ Meeting (March 8-10, 2023)

## Discussion Sessions

### High Temperature Processes

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| <b>Latest researches for clarification of the evolution mechanism of inclusions during steel solidification process</b> |   |              |       |      |
| D1  | (ISIJ Research Promotion Grant) Evaluation of microsegregation and formation of inclusions utilizing succinonitrile-based solution  | S. Kawanishi | • • • | 1    |
| D2  | Demonstrating solidification path in Fe-22Mn-0.7C alloys using time-resolved X-ray imaging techniques and controlling solidification microstructure via nucleation control of a metastable ferrite by non-metallic inclusions | T. Narumi    | • • • | 4    |
| D3  | Precipitation behavior of MnS from molten steel onto solid oxides during solidification process   | T. Kurokawa  | • • • | 7    |
| D4  | Formation of TiN inclusions due to microsegregation during solidification   | H. Esaka     | • • • | 10   |
| D5  | Evolution and growth of non-metallic inclusions during solidification of Fe-18Cr-2Mo alloy  | K. Kameda    | • • • | 12   |
| D6  | MnS inclusion precipitation behavior in unidirectional solidified Fe-Mn-Al-C alloys   | Y. Fan       | • • • | 14   |
| D7  | Reexamination of thermodynamic behavior of oxygen in molten alloys using interstitial model   | T. Yoshikawa | • • • | 18   |
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### Processing for Quality Products

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| D11 | Theory of various thickness distribution control by variable speed motion in semi-dieless drawing process                                | T. Furushima | • • • | 26 |
| D12 | Optimization of tube edge thickening forging with autopilot finite element analysis and its application for knowledge archive generation | Y. Yoshida   | • • • | 28 |
| D13 | Realization of uniform wall thickness in bending process with eccentric pipe   | N. Utsumi    | • • • | 32 |
| D14 | Development of local thickening method of steel tube subjected to combined shear-compression stresses                                    | M. Endo      | • • • | 35 |
| D15 | Explosively partial area welding of metal pipes using internal charging method   | A. Mori      | • • • | 39 |

#### Stabilization technology for manufacturing and strip threading in a continuous process

##### (Warped, bended, meandered, and shaped)

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### Microstructure and Properties of Materials

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## Properties of agglomerates

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## LD • EAF

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### Novel H<sub>2</sub> production/utilization technology and CO<sub>2</sub> decomposition/removal technology for the achievement of carbon neutrality 2

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| 67 | Leaching of Ca from steelmaking slag into CO <sub>2</sub> -microbubble circulating water  | E. Kusaka   | • • • | 135 |
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### Instrumentation

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## Microstructure and Properties of Materials

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| 108                            | Temporal change of surface crack for hot dip galvanized steel under dwell fatigue   | K. Hasegawa  | • • • 169 |
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## Coating and corrosion 2

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