Q-AOS Kyushu University Institute for Asian and Oceanian Studies

No.029

Brown Bag Seminar

ブラウンバッグセミナー

Online (Zoom) Recorded data will be uploaded

Supported by Kyushu University,Q-AOS & TEMDEC

2021.11.24 (Wed.)

Scan here for Registration

JP↔EN Simultaneous Interpretation

12:10 ~ 12:50

12:10-12:15 ◆ Introduction
12:15-12:40 ◆ Seminar (Presentation)
12:40-12:50 ◆ Q&A

https://temdec-med-kyushu-u-ac-jp.zoom.us/webinar/register/WN_pl2Bz6XzRJOJpLQg9ZwpDA

Metallurgy integrated with biotechnology for gold recovery

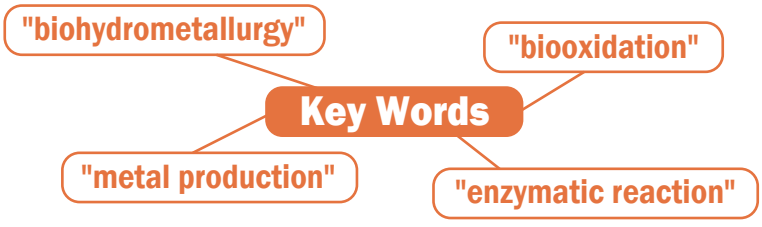
Chair: Prof. Scott Valentine (Research Promotion Director of Q-AOS)

For the sustainable supply of metal resources, it is required to improve the technology for extracting metals from natural ores and urban mines, and to develop the technology with less environmental load. Metallurgy has the characteristic of extracting metals from objects with lower concentrations and allowing the reaction to proceed under mild conditions at normal temperature and pressure when it is integrated with biotechnology. It is expected to become an indispensable technology for the SDGs of metal production in the future.

In this seminar, I will explain how to improve the efficiency of gold extraction from extremely refractory gold ore as one of the research examples of biohydrometallurgy.

The standard method to extract gold from gold ore is to extract and concentrate it as a stable gold-cyanide complex in an alkaline cyanide aqueous solution. However, in graphitic gold ore in which carbonaceous matter such as coal is contained in gold ore, since only a few % of organic carbon content is mixed, complex ions are carbonaceous at the stage of forming a cyanide complex. Au cyanide complexes will be adsorbed on the surface of carbonaceous matter, resulting in a loss of 30-70% gold recovery rate. For this reason, graphitic gold ore is currently classified as extremely refractory gold ore and is not subject to development. This lecture introduces a bioprocess that improves the gold recovery rate from graphitic gold ore from 20% to 90% or more by incorporating carbonaceous decomposition by enzymatic reaction.

In addition, for the use of limited metal resources, it is important for non-resource countries such as Japan to collaborate in promoting such technological development in partnership with resource-rich countries. I am coordinating an international research project to form a scientific platform under JSPS Core-to-Core Program with South Africa, Ghana and Australia as partners.



Professor
Keiko Sasaki, PhD
Kyushu University
Faculty of Engineering

After graduating from Hokkaido University, Prof. Sasaki has appointed at the Department of Earth Resources Engineering, Graduate School of Engineering, Kyushu University in 2004. She became a professor in 2010 and continues to the present.

4 質の高い教育をみんなに
5 ジェンダー平等を実現しよう
7 エネルギーをみんなにそしてクリーンに
9 産業と技術革新の基盤をつくろう
12 つくる責任つかう責任
17 パートナーシップで目標を達成しよう

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