

## RECENT GROWTH OF NICKEL LATERITE PROCESSING IN INDONESIA

By

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### SUMMARY

Indonesia is one of the countries with significant nickel reserves contributing to approximately 20% of the total world nickel reserves. In 2022, Indonesia nickel mining production reached almost half of the total world nickel mining production. Nickel in Indonesia is predominantly found as laterite deposit with layers having different characteristics. The layer under the top soil contains limonite ore with relatively low nickel and low MgO contents, while the layer located deeper but above the bedrock contains saprolite ore with relatively high nickel and high MgO contents. The Indonesian government has introduced a set of strategic regulations aimed to harness its nickel resources and strengthening its domestic industrial capacities. One of the prominent regulations is regarding the nickel ore export ban that was implemented to encourage domestic nickel processing. The export ban on ore has been a catalyst for the recent surge in nickel laterite processing in Indonesia. The law shifted Indonesia's role from initially being one of the major exporters of nickel ore to the leading exporter of nickel-containing intermediate and semi-finished products. The High Pressure Acid Leaching (HPAL) is implemented for processing the limonite ore, while the Rotary Kiln Electric Furnace (RKEF) is dominantly applied for processing the saprolite ore. The development of HPAL and RKEF plants in Indonesia will be presented. In addition, the possible directions or strategies of Indonesian nickel industry will be discussed.

### BIO



#### Education

Taufiq completed his undergraduate education from the Department of Metallurgical Engineering from ITB in 2005. Taufiq then obtained a Master's degree in 2008 and Doctoral's degree in 2013 both in Pyrometallurgy field at the University of Queensland, Australia.

#### Current Position

Taufiq is currently lecturer and researcher in the Metallurgical Engineering Research Group at the Faculty of Mining and Petroleum Engineering, Institut Teknologi Bandung, Indonesia since 2019. He is also actively involved in discussion and preparation of documents related to mineral sector development policies in Indonesia, such as Indonesian Grand Strategies of Nickel, Copper, Bauxite, Tin, Gold-Silver, Coal, and Dolomite.

## **Previous Experience**

Prior to Metallurgical Engineering Research Group, Taufiq served as Research Fellow at Pyrometallurgy Innovation Centre at the University of Queensland, Australia from 2014 until 2018. Some of the research areas he covered during his research fellow position include slag chemistry, non-ferrous high temperature processing, kinetics of heterogeneous reaction, and computer coupling of phase diagrams and thermochemistry (CALPHAD). Recognition of Taufiq's research experience is demonstrated by the publication of 80 technical papers in metalurgy area and several awards, such as Extraction & Processing Division Science Award by TMS in 2018, Extraction & Processing Division Pyrometallurgy Best Paper Award by TMS in 2018, and Editor Choice Award for 2017 by the Journal of Phase Equilibria and Diffusion.