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# 红土型镍矿床找矿勘查与开发利用新进展

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摘要：

随着全球经济和社会的高速发展，镍的需求量一直保持高位增长趋势。统计数据表明，全球的镍储量约为1 6亿吨,其中硫化物型镍矿占全部储量的28%,红土型镍矿占72%。鉴于硫化物型镍矿床以品位较高、杂质较少和选冶容易等特点，因此，全球58%左右的镍产量来源于此类矿床。随着硫化物型镍矿床开采量的大量增加和储量快速减少以及后备开采基地的严重不足，因此，人们将开发的重点瞄准了红土型镍矿床。红土型镍矿资源具有以下几个特点：①世界各国已探明的红土型镍的金属量为1 15亿吨，资源丰富；②无论是找矿勘查，还是矿体的采矿和选矿，其投入成本均很低；③火法冶炼工艺已在工业生产中得到运用，湿法冶炼技术（高压酸浸和堆浸）也正日趋成熟；④红土型镍矿床大多数位于赤道附近，多数临海，便于外运。我国西南和海南岛地区超镁铁质火成岩及其相应的风化层分布广泛，个别岩体（或层）的顶部或旁侧产出有红土型镍矿床（点），因此，我国有关部门应对红土型镍矿床的找矿勘查和开发利用给予高度重视。

关键词：红土型镍矿床 找矿勘查 开发利用 高压酸浸 冶炼技术 澳大利亚

# New Achivements of Mineral Exploration and Utilization of the Laterite Nickel Deposits

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Abstract:

With the high speed development of social and economic development, the assumption and demand of nickel have been kept at high level. Statistic data show that 160 Mt nickel (metal) have been identified in the world, among that the sulfide nickel accounts for 28% of the total reserve while laterite nickel occupies about 72% of the total reserve. As sulfide nickel deposits are characterized by high ore grade, less impurity, easy mining—metallurgy, the nickel from the sulfide nickel deposits occupies 60% of the world total nickel production. With the nickel production increasing dramatically and nickel reserve depleted obviously from the sulfide deposits as well as no more new sulfide deposits being discovered, the exploration and mining of the laterite nickel deposits have attracted domestic and international geologists' attention.The following features for these laterite nickel deposits have been recognized as follows: (1) At present, 115Mt metal nickel from the laterite deposits occurring in various countries (or regions) have been located; (2) The cost for mineral exploration, mining and ore dressing is low; (3) The traditional metallurgical methods have been applied to the utilization of the laterite nickel ores, but the high pressure acid leaching (HPAL) and heap leaching (HL) may also be used in metallurgical processes of the laterite nickel ores; (4) Most of these major laterite nickel deposits are located along the equator and close the sea. Therefore, shipment of the laterite ore will be easy. Various ultramafic and mafic igneous rocks, with weathering covers, are widely distributed in southwestern China and Hainan Island.Some laterite nickel deposits or prospects occurring have also been located at top or neighboring regions of some ultramafic rocks. Therefore, attentions have to be paid on the mineral exploration and mining of the laterite nickel deposits occurring in China.

Keywords: laterite nickel deposits mineral exploration, mineral utilization high pressure acid leaching metallurgical technique, Australia

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