摘要

本次设计以徐山钨矿选矿厂的工艺流程为基础，结合其现场资料以及相关理论知识，设计一个新的选矿厂。

本次设计原矿WO_3品位为0.28%。最终产品精矿WO_3品位为63%。设计选厂年纯利润3131.02万元，计划3.5年收回投资成本。

粉碎筛选过程采用两段闭路流程。原矿石直接进入旋转式破碎机，断裂为121.21毫米。粉碎产品的产物在中间粉碎后进入振动筛，对产物进行筛选和精细粉碎。产品被直接筛选到研磨操作中。研磨分级过程使用两阶段全封闭过程。粉碎的产品进入球磨机的一部分。尾矿进入螺旋分级机。分级器的溢流进入水力旋流器，砂粒返回球磨机。水力旋流溢流进入选择过程，沉砂进入第二球磨。选择的主要流程是在浮选后首先浸出清扫产品。最终钨回收率63.5%以上。

关键词：破磨流程；浮选；浸出。

Abstract

Based on the existing process flow of Xushan Tungsten Mine Concentrator, this design combines its on-site data and related theoretical knowledge to design a new concentrator.

The designed original ore WO3 grade is 0.28%. The final product concentrate grade 03 is 63%. The annual net profit of the design and selection plant is 31,130,200 yuan, and the investment cost is planned to be recovered in 3.5 years.

The crushing and screening process adopts a two-stage and one-closed process. The raw ore directly enters the gyratory crusher and is crushed to 121.21mm. The crushed product is crushed and the product enters the vibrating screen. The product is sieved for fine crushing, and the sieved product directly enters the grinding operation. The grinding classification process uses a two-stage full-closed process. The crushed product enters a section of ball mill. The tailings enter the spiral classifier. The overflow of the classifier enters the hydrocyclone,

and the grit returns to the ball mill. The hydrocyclone overflows into the sorting process, and the grit enters the second-stage ball mill. The principle flow of the selection is to first leaching the sweeping product after flotation. The final tungsten recovery rate is 63.5% or more.