

ABSTRAK

Retreatment dilakukan untuk mendapatkan kembali timah yang masih terkandung pada tailing dari pengolahan yang telah dilakukan Bidang Pengolahan Mineral (BPM). Monasit, sebagai salah satu tailing yang didapatkan dari proses tersebut, masih mengandung sekitar 2-3% timah. Retreatment dilakukan menggunakan *three disc magnetic separator* dengan memerhatikan parameter, seperti intensitas magnet dan opening feed, kemudian dilakukan analisis kadar pada proses konsentrasi menggunakan XRF. Tujuan dari penelitian ini adalah menganalisis keterdapatannya timah pada monasit, pengaruh intensitas magnet dan *opening feed* terhadap *recovery* serta kadar timah.

Pada penelitian ini digunakan intensitas magnet dengan variasi disc 1, 2, dan 3 secara berturut-turut adalah 1.1 T, 1.3 T, dan 1.5 T (variasi A); 1.3 T, 1.5 T, dan 1.7 T (variasi B); serta 1.5 T, 1.7 T, dan 1.9 T (variasi C) dengan opening feed sebesar 0.4 cm dan 0.8 cm. Berdasarkan konsentrasi yang telah dilakukan, didapatkan kadar timah tertinggi sebesar 7.33% dengan kombinasi intensitas magnet terbesar, yaitu variasi C dan opening feed 0.4 cm. Sementara itu, *recovery* tertinggi sebesar 73.64% diperoleh pada intensitas magnet terendah, variasi A, dengan opening feed yang sama. Maka dapat diketahui bahwa semakin besar intensitas magnet yang digunakan, kadar timah yang diperoleh akan semakin tinggi. Sementara itu, semakin besar opening feed, justru perolehan *recovery*-lah yang semakin meningkat. Akan tetapi, perlu catatan bahwa *opening feed* yang digunakan tidak boleh ≥ 0.8 cm. Apabila *opening feed* yang digunakan ≥ 0.8 cm, diperlukan intensitas magnet yang besar pula atau *recovery* dan kadar produk non-magnetik yang dihasilkan tidak ada perubahan yang cukup signifikan.

Kata Kunci: Intensitas Magnet, Kadar Timah, *Opening Feed*, *Recovery*, *Three Disc Magnetic Separator*

ABSTRACT

Retreatment is conducted to obtain tin that remains in the tailings from the processing that has been carried out by the Mineral Processing Division (BPM). Monazite, as one of the tailings obtained from the process, still contains around 2-3% tin. Retreatment is carried out using a three disc magnetic separator by considering parameters, such as magnetic intensity and opening feed, then analysing the grade in the concentration process using XRF. The purpose of this study is to analyse the presence of tin in monazite, the effect of magnetic intensity and opening feed on recovery and tin grade.

In this study, magnetic intensity was used with disc 1, 2, and 3 variations respectively is 1.1 T, 1.3 T, and 1.5 T (variation A); 1.3 T, 1.5 T, and 1.7 T (variation B); and 1.5 T, 1.7 T, and 1.9 T (variation C) with opening feed of 0.4 cm and 0.8 cm. Based on the concentration that has been done, the highest tin grade is 7.33% with the largest combination of magnetic intensity, namely variation C and opening feed 0.4 cm. Meanwhile, the highest recovery of 73.64% was obtained at the lowest magnetic intensity, variation A, with the same opening feed. It can be seen that by increasing the magnetic intensity, the tin content will be higher. Meanwhile, the larger the opening feed, the higher the recovery. However, it should be noted that the opening feed used should not ≥ 0.8 cm. If the opening feed used is ≥ 0.8 cm, it requires a strong magnetic intensity or the recovery and non-magnetic product content produced will not change significantly.

Keywords: *Magnetic Intensity, Opening Feed, Recovery, Three Disc Magnetic Separator, Tin Grade*