

ABSTRAK

PENGUKURAN KOEFISIEN REDAMAN MAGNETIK PADA MAGNET NEODYMIUM (NdFeB) YANG BERGERAK DI ATAS BIDANG ALUMINIUM MENGGUNAKAN VIDEO

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Telah dilakukan penelitian mengenai redaman magnetik pada gerak magnet. Gerak magnet mengalami redaman ketika magnet bergerak di atas bidang aluminium. Untuk mendapatkan nilai koefisien redaman, magnet Neodymium yang bergerak direkam menggunakan kamera video dan dianalisis menggunakan *software* pengolah video LoggerPro sehingga diperoleh data posisi fungsi waktu. Data tersebut difit dengan persamaan gerak magnet teredam sehingga diperoleh nilai kecepatan terminal. Selanjutnya nilai kecepatan terminal fungsi sudut digunakan untuk mendapatkan nilai koefisien redaman magnetik. Nilai koefisien redaman magnetik pada magnet Neodymium yang bergerak di atas bidang aluminium setebal 0 mm, 0,4 mm, 1,2 mm dan 1,6 mm secara berturut-turut adalah 0 g/s, (45 ± 4) g/s, (127 ± 5) g/s dan (213 ± 6) g/s. Hasil pengukuran menunjukkan bahwa terdapat hubungan linear antara ketebalan bidang aluminium terhadap nilai koefisien redaman magnetik.

Kata kunci: kecepatan terminal, koefisien redaman magnetik

ABSTRACT

**THE MEASUREMENT OF MAGNETIC DAMPING COEFICIENT IN
MOVING NEODYMIUM MAGNET (NdFeB) ON THE ALUMINUM
SLAB BY USING VIDEO RECORDING**

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A research about magnetic damping in magnet movement had been done. Magnet movement was damped when it was moving on the aluminum slab. Neodymium magnet movement was recorded by using video recording and was analyzed by using software LoggerPro to get position versus time data. Later, data was fitted by using equation of damped magnet movement to get terminal velocity. Afterward terminal velocity versus the slope angle of inclined plane was used to obtain value of magnetic damping coefficient. The measurement values of magnetic damping coefficient in moving Neodymium magnet on the aluminum slab for 0 mm, 0,4 mm, 1,2 mm and 1,6 mm thickness were 0 g/s, (45 ± 4) g/s, (127 ± 5) g/s and (213 ± 6) g/s, respectively. Finally, this study found linear correlation between magnetic damping coefficient with aluminum thickness.

Keywords: terminal velocity, magnetic damping coefficient