

**Klasifikasi Abnormalitas Sel Darah Merah Untuk Deteksi Dini  
*Myeloproliferative Neoplasms Syndrome Menggunakan Metode Deep Learning***

*Classification of Red Blood Cell Abnormalities for Early Detection of  
Myeloproliferative Neoplasms Syndrome Using Deep Learning Methods*  
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**ABSTRACT**

*Polychthemia Vera is a type of blood disorder that belongs to the Myeloproliferative Neoplasms group, characterized by an increase in the number of red blood cells in the body (erythrocytosis). The primary cause of the increased number of red blood cells, which are not fully mature or differentiated into red blood cells, white blood cells, or platelets (proliferation of progenitor or precursor cells), in the bone marrow is due to gene mutations that regulate the process of red blood cell formation. This study aims to develop a web-based information system to assist pathologists in the early diagnosis of MPNs using deep learning. The system performs classification using the Convolutional Neural Network (CNN) method with five classification classes: elliptocytes, normal, stomatocytes, ovalocytes, and teardrop. In general, the parameters for the classification process include the recognition of color, shape, and size from the blood smear images. This study uses the ResNet50V2 architecture, with the best test results achieved at a learning rate of 0.001. The system testing results indicate that the system can classify platelet abnormalities with the highest accuracy of 95.29% from 150 test data.*

**Keywords:** *Myeloproliferative Syndrome, Polycythemia Vera, red blood cell morphology, ResNet50V2, convolutional neural network.*