

## ABSTRACT REVIEW RESULT

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Thesis Title In Indonesian : Penerapan Metode *Root Cause Analysis (RCA)* dan *Failure Mode and Effect Analysis (FMEA)* Dalam Mengidentifikasi Faktor Penyebab Kecelakaan Kerja di PT. Pilar Cakrawala  
Thesis Title In English : *Application of Root Cause Analysis (RCA) and Failure Mode and Effect Analysis (FMEA) Methods in Identifying Causal Factors of Work Accidents at PT Pilar Cakrawala*

### ABSTRAK

Penelitian ini bertujuan untuk mengidentifikasi faktor penyebab kecelakaan kerja di PT. Pilar Cakrawala, perusahaan electroplating yang memiliki risiko tinggi. Metode yang digunakan adalah *Root Cause Analysis (RCA)* dengan *fishbone diagram* dan *5 Why* untuk menemukan akar penyebab, serta *Failure Mode and Effect Analysis (FMEA)* untuk menentukan prioritas risiko berdasarkan nilai *Risk Priority Number (RPN)*. Data penelitian diperoleh melalui observasi, wawancara, dan dokumentasi di area produksi. Hasil penelitian menunjukkan bahwa kecelakaan kerja dipengaruhi oleh faktor manusia, peralatan, lingkungan, dan manajemen. Akar penyebab meliputi kurangnya pelatihan K3, kelalaian pekerja, penggunaan APD yang tidak sesuai, wadah bahan kimia yang tidak standar, tata letak produksi yang tidak memadai, serta lemahnya inspeksi dan pemeliharaan peralatan. Analisis FMEA menunjukkan risiko tertinggi berasal dari paparan bahan kimia, luka akibat benda tajam, cedera tertimpa produk besar, dan sengatan listrik. Rekomendasi perbaikan mencakup peningkatan pelatihan dan disiplin K3, pengadaan APD sesuai standar, perbaikan tata letak produksi, penerapan budaya 5R, inspeksi rutin, serta program pemeliharaan peralatan. Integrasi metode RCA dan FMEA terbukti mampu memberikan gambaran menyeluruh terkait penyebab dan tingkat risiko kecelakaan, sehingga dapat menjadi dasar pengembangan sistem manajemen keselamatan kerja yang lebih efektif di industri electroplating.

Kata Kunci: *electroplating, kecelakaan kerja, root cause analysis and failure mode and effect analysis*

### ABSTRACT

*This study aims to identify the factors causing workplace accidents at PT. Pilar Cakrawala, an electroplating company with high occupational risks. The methods used are Root Cause Analysis (RCA) with fishbone diagrams and the 5 Whys approach to determine root causes, as well as Failure Mode and Effect Analysis (FMEA) to prioritize risks based on the Risk Priority Number (RPN). Data were collected through observation, interviews, and documentation in the production area. The results show that workplace accidents are influenced by human, equipment, environmental, and managerial factors. Root causes include lack of occupational safety and health (OSH) training, worker negligence, improper use of personal protective equipment (PPE), non-standard chemical containers, inadequate production layout, and weak inspection and maintenance practices. FMEA analysis indicates that the highest risks come from chemical exposure, injuries from sharp objects, accidents involving large products, and electrical shocks. Recommended improvements include enhancing OSH training and discipline, providing PPE that meets standards, improving production layout, implementing the 5R workplace organization, conducting regular inspections, and strengthening equipment maintenance programs. The integration of RCA and FMEA provides a comprehensive overview of accident causes and risk levels, serving as a basis for developing a more effective occupational safety management system in the electroplating industry.*

*Keywords: electroplating, root cause analysis, failure mode and effect analysis, workplace accidents*

*Karawang, September 29<sup>th</sup> 2025  
Regards,*



**Hilda Tri Yulianti, M.Pd**  
*Reviewer*

