

FORENSIC STUDY OF THE SHORT CIRCUIT AS A CAUSE OF FIRE

Milan Blagojević
Radovan Radovanović
Sreten Roganović

Summary: The paper presents an overview of laboratory testing of short circuits, the aim being to detect the presence of O₂ in the conductors where melting is observed in the event of fire. The optical microscope and scanning electron microscope (SEM) with energy dispersive spectrometer (EDAX) have been applied, as well as structural analysis based on X-ray diffraction. Sample preparation included grinding, polishing and chemical corrosion. Also, in all cases it was determined whether the conductor where melting was observed had been in the O₂ atmosphere or not. In order to interpret correctly the results of the laboratory testing, it is necessary to know the circumstances leading to fire and how it developed. In order to reach a reliable conclusion regarding the cause of fire, it is necessary to carry out fire scene investigation in person, or to inspect the fire scene later by means of the related photographs, so as to observe the point of origin of fire and estimate its development. Only then it is possible to state the nature of the examined short circuits, i.e. to reach the conclusion whether a primary or secondary short circuit occurred.