

## عنوان مقاله:

Binary Mixture Based on Epoxy for Spectrally Adapted Decoy Flare

## محل انتشار:

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## خلاصه مقاله:

Pyrotechnic decoy flares are the most widely used passive countermeasures for heat-seeking missiles. The development of (photoconductive) InSb-detectors with cut-off wavelength  $>6 \mu\text{m}$  has allowed two-color detectors working in both short ( $\alpha$ ) (1.8-2.5  $\mu\text{m}$ ) and mid-wave ( $\beta$ ) (3.5-4.8  $\mu\text{m}$ ) bands. Thus, it is possible to determine the sensitivity ratio and to discriminate against fake targets. An attempt was made to change the spectral distribution of MTV (Magnesium-Teflon-Viton) decoy flare compositions by adding another composition to modify spectral emission based on aluminum, hexamine, potassium nitrate and ammonium perchlorate. Aluminum emission at 1.5  $\mu\text{m}$  due to  $\text{Al}_2\text{O}_3$ . Hexamine used as flame expanders due and to provide cooling of the flame to transform radiation from a spot location to a burning zone. In this study, theoretical and experimental comparisons were made between various spectrally adapted flame compositions based on epoxy as a binder and the MTE flare which represented by sample (4). The first composition was Mg/Teflon/Epoxy (MTE) with percentage (60-80)% and the second adapted compositions with percentage (20-40)%. The temperature of the flame and the time of burning were measured using an inframetric radiometer. The radiant emission was determined using a computer program. The results show that sample (1) which contains 20% of the adapted compositions produces high flame temperature (1300 °C) and the highest radiant emittance 6.6  $\text{W}/\text{cm}^2/\mu\text{m}$ .

## کلمات کلیدی:

Pyrotechnics, Decoy flares, Radiant emittance

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1141838>

