

## ME24\_12 – Challenging the 40 Cal/Cm<sup>2</sup> Threshold: PPE & Arc Hazards Reevaluation

**Author(s):** Ahmed Samir (Future Technologies Ltd)

**Abstract** - Electrical engineers remain concerned about Personal Protective Equipment (PPE) effectiveness when incident energy (I.E) exceeds 40 cal/cm<sup>2</sup>, even if PPE has a higher arc rating than the I.E. This paper challenges the 40 cal/cm<sup>2</sup> threshold by examining its validity within relevant standards. Employing pressure wave calculations based on IEEE technical papers, it analyses diverse arc flash scenarios to investigate the correlation between I.E and pressure impact.

Beyond pressure waves, this study delves into additional arc flash hazards such as noise, sound pressure, and shrapnel, providing a comprehensive overview of worker safety beyond thermal protection.