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## **3P76 - Measurement on Electrical Conductivity of Exploding Copper Wire During Current Dwell Time**

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We obtain the electrical conductivity of copper along the gas branch of liquid-gas coexistence curve (binodal curve) as a function of temperature and mass density using the fact that an exploding wire cools down along the gas branch of binodal curve during the current dwell time. Under the assumption of uniform wire properties during the wire cooling, electrical conductivity and mass density are easily determined by the time-dependent measurements of wire radius and current-voltage waveforms. For the determination of wire temperature, we utilize continuous spectrum measured by a time-resolved optical pyrometry system covering from 400 nm to 650 nm. This work will be helpful to investigate the thermophysical properties of materials such as electrical conductivity in warm-dense matter regime. In this paper, the details of the measurement and analysis of electrical conductivity and wire temperature of an exploding wire during the current dwell time are discussed in detail.

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