Results

A four point probe used to test resistivity of thin films.

Aim

To create a four point probe that will consistently and accurately measure resistivity of thin films.

Method

Needle spacing = 1 cm

Current (I) is passed through outer probes

Voltage (V) is measured across inner probes

Resistivity is calculated by applying geometry factors to $R = \frac{V}{I}$.

Results

Collinear probes are evenly spaced to allow for consistent measurements.

Probe Components

- Four sewing needles composed of chrome-plated steel
- Copper conducting wire
- Hot glue secures needles and allows springiness

Conclusion

Measuring the resistivity of thin films is done using a four point probe. Voltage is measured when a known current is sent through the probes. Resistivity is then calculated using a modified version of $R = \frac{V}{I}$, where factors have been applied to account for geometry of sample.

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