

## Answer on Question#55886 - Physics - Electromagnetism

Which of the following does NOT affect resistance of a wire?

Diameter

Type of material

Length

Voltage

Solution:

The resistance of the wire is given by

$$R = \rho \frac{l}{A}$$

where  $\rho$ —is the resistivity of the material (depend on type of material),  $l$ —is the length of the wire,  $A$ —is the cross-sectional area of the wire (depend on the diameter of the wire).

Therefore the resistance of the wire doesn't depend on voltage.

Answer: voltage.

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