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Electrical Switching Behaviour in Lead Phosphovanadate Glasses

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Abstract: Electrical switching behaviour of lead phosphovanadate glasses were studied by determining the current-voltage characteristics. All the investigated glasses exhibit the dependence of threshold voltages on temperature, thickness and composition. Below holding current the I - V characteristics obey Ohms law followed by a negative resistance region where the bulk behaviour dominates and at higher values of current the samples goes to a low resistance state. The studied glasses exhibit memory type switching. It is suggested that the initial switching and channel formation are due to electronic, while thermal effects dominate in the formation of channels.

Key Words: Electrical switching, Phosphovanadate, Negative resistance.

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