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Performance of ZnO-doped recycled window glass as a thermoluminescence dosimeter

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Thermoluminescence properties of Thai commercial window glass provided by Guardian Industries Corporation (denoted as WG) were studied. WG was doped with varying concentrations of ZnO. The composition of glass is 90WG-10Na₂O-xZnO (where $x = 0.000, 0.001, 0.010, 0.100, 1.000$ mol%). Glass samples were recycled by using melt quenching technique and cut into the dimensions of $6 \times 6 \times 1$ mm³. After irradiated glass samples with X-ray at photon energy 160 keV in absorb dose rang 0-14 mGy, the glow curve structure, TL sensitivity, linearity and minimum detectable were investigated.

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