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Recent results using radiotracer PL at ISOLDE

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The results of photoluminescence (PL) studies on ZnO implanted with radioactive As → Ge and Ga → Ge isotopes are described. In both cases, identical PL effects are observed, indicating that identical daughter Ge defects are created. We conclude, on the basis of the well-established result that Ga occupies Zn sites, that implanted As also occupies Zn sites in ZnO. This finding corroborates results from electron channeling measurements by Wahl et al [Physica B 404, 4803(2009)]. Preliminary indications from this work and allied studies of stable isotopes are that both Ge and Si act as weak binding centres for excitons in ZnO.

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