

Abstract Submitted
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Deep levels due to hydrogen in ZnO single crystals¹ NARENDRA
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Hydrogen impurities and oxygen vacancies are involved in the ~ 0.7 eV shift of the
optical absorption edge of ZnO. Deuterium causes a smaller shift. Titanium metal is
used to bind hydrogen as it diffuses out of ZnO. Positron annihilation spectroscopy
coupled with other techniques point to the presence of oxygen vacancies. Removing
hydrogen followed by annealing in oxygen reduces the carrier concentration.

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