1. Record Nr. UNINA9910872774603321

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| Titolo | 1995 IEEE Nuclear Science Symposium |
| Pubbl/distr/stampa | [Place of publication not identified], : IEEE, 1996 |
| Descrizione fisica | 1 online resource |
| Disciplina | 621.48 |
| Soggetti | Nuclear engineering |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Note generali | Bibliographic Level Mode of Issuance: Monograph |
| Sommario/riassunto | A study has been made of the optical and radiation damage properties of undoped and niobium doped lead tungstate crystals. Data were obtained on the optical absorbance, the intensity and decay time of the scintillation light output, and the radioluminescence and photoluminescence emission spectra. Radiation damage was studied in several undoped and niobium doped samples using ^(60)Co gamma ray irradiation. The change in optical absorption and observed scintillation light output was measured as a function of dose up to total cumulative doses on the order of 800 krad. The radiation induced phosphorescence and thermoluminescence was also measured, as well as recovery from damage by optical bleaching and thermal annealing. An investigation was also made to determine trace element impurities in several samples. |