NONLINEAR OPTICAL PROPERTIES OF PULSED LASER DEPOSITED TeO2-
BASED THIN FILM GLASSES

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Transparent tellurite thin film glasses have been produced by PLD from 80TeO2-15WO3-
5R2O3 (mol%) bulk glasses, with R= Ti4+, Nb5+, La3+, Ta5+, Pb2+ or Bi3+. Transparent films
having high refraction index (n>2) and enhanced third order susceptibility (|Γ(3)| ∼ 10-12 esu)
at 1.5 Rm with respect to bulk glasses have been obtained. These results are discussed in
terms of the polarizability of the heavy metal cations and the compositional and structural
characteristics of laser deposited film glasses.