

## ISOELECTRONIC STUDY OF TRIPLY EXCITED Li-LIKE STATES

E.P. Benis\*, T.J.M. Zouros<sup>†</sup>, T.W. Gorczyca<sup>‡</sup>, M. Zamkov \*, and P. Richard\*

\*James R. Macdonald Laboratory, Department of Physics, Kansas State University, Manhattan, KS 66506-2604, USA

<sup>†</sup>Department of Physics, University of Crete, P.O. Box 2208, 71003 Heraklion, Crete, Greece & Institute of Electronic Structure and Laser, P.O. Box 1527, 71110, Heraklion, Crete, Greece

<sup>‡</sup>Department of Physics, Western Michigan University, Kalamazoo, Michigan 49008, USA

Absolute doubly differential cross sections for the production and Auger decay of the  $2s2p^2\ ^2D$  triply excited state formed in collisions of He-like  $B^{3+}$ ,  $C^{4+}$ ,  $N^{5+}$ ,  $O^{6+}$  and  $F^{7+}$  ions with  $H_2$  were measured using zero-degree Auger projectile electron spectroscopy. The  $^2D^e$  state was directly produced by the resonant scattering of the quasi-free  $H_2$  electrons from the  $1s2s\ ^3S$  metastable state of the ions. Auger decay rates back to the  $1s2s\ ^3S$  state (elastic channel), and  $1s2s\ ^1S$  and  $1s2p\ ^3P$  states (inelastic channels) were also determined as a function of  $Z$ . R-matrix calculations, performed within the electron scattering model, were found to be in good to excellent overall agreement.

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