ELECTRONIC TRANSITIONS OF PALLADIUM MONOBORIDE AND PLATINUM MONOBORIDE

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Electronic transition spectrum of palladium monoboride (PdB) and platinum (PtB) monoboride have been studied using the technique of laser-ablation/reaction free jet expansion and laser induced fluorescence spectroscopy. The metal monoborides were produced by reacting laser ablated metal atoms and diborane ((B_2H_6) seeded in argon. Five and six vibrational bands were observed respectively for the PdB and PtB molecules. Preliminary analysis of the rotationally resolved structure showed that both molecules have $X^2\Sigma^+$ ground state. Least-squares fit of the measured line positions yielded molecular constants for the electronic states involved. Molecular and electronic structures of PdB and PtB are discussed using a molecular orbital energy level diagram.
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