

## VISIBLE LASER EXCITATION SPECTROSCOPY OF YbOH

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Laser excitation spectroscopy has been employed in the first observation of the visible  $\tilde{A}^2\Pi-\tilde{X}^2\Sigma$  electronic transition of YbOH. YbOH radicals were produced in a Broida-type oven by the reaction of ytterbium metal vapor with  $H_2O_2$  vapor. A Coherent 599 dye laser operating in broadband mode ( $1\text{ cm}^{-1}$  bandwidth) was used to investigate the vibrational structure of the  $\tilde{A}-\tilde{X}$  system at low-resolution. The output of a Coherent 699-29 ring dye laser operating in single frequency mode was used with selective detection of fluorescence to record high-resolution spectra of the 000 - 000 and 000 - 100 bands in the range 575 - 595 nm; the measurement accuracy of the line positions was  $0.003\text{ cm}^{-1}$ . The results are consistent with a linear structure for YbOH. The vibrational and rotational analysis of the  $\tilde{A}-\tilde{X}$  transition will be discussed.