

substance: Nb₂O₅

property: energy gap, optical properties

energy gap

E_g	3.9 eV	from photoconductivity spectra (amorphous film)	78D
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XPE spectrum: Fig.1, IR spectrum: Fig. 2, Raman spectrum: Fig. 3.

He I and He II photoelectron spectra, Fig. 4,

refractive index

		λ [nm]		
n	2.44	1050	thin films (amorphous)	78S
	2.66	574		
	2.85	546		
	3.40	488		
	3.68	397		
	4.15	355		
	2.64(11)	632.8	B-Nb ₂ O ₅	68E
	2.5(2)	632.8	P-Nb ₂ O ₅	
	2.6(3)	632.8	H-Nb ₂ O ₅	

References:

- 68E Emmenegger, F. P., Robinson, M. L. A.: J. Phys. Chem. Solids 29 (1968) 1673.
- 78B Beatham, N.: D. Phil. Thesis, Oxford 1978.
- 78D D'yakonov, M. N., Zamyslovskii, M. G., Koslov, D. V., Muzhdaba, V. M., Khanin, S. D., Shelekhin, Ya. L.: Fiz. Tverd. Tela 20 (1978) 2801.
- 76M McConnell, A.A., Anderson, J.S., Rao, C.N.R.: Spectrochim. Acta A32 (1976) 1067.
- 78S Sayaz, G. I., Septier, A.: Thin Solid Films 55 (1978) 191.

Fig. 1.

Nb_2O_5 . XPE spectrum (intensity vs. electron kinetic energy) compared to WO_3 , $\text{W}_{18}\text{O}_{49}$ and WO_2 [78B].

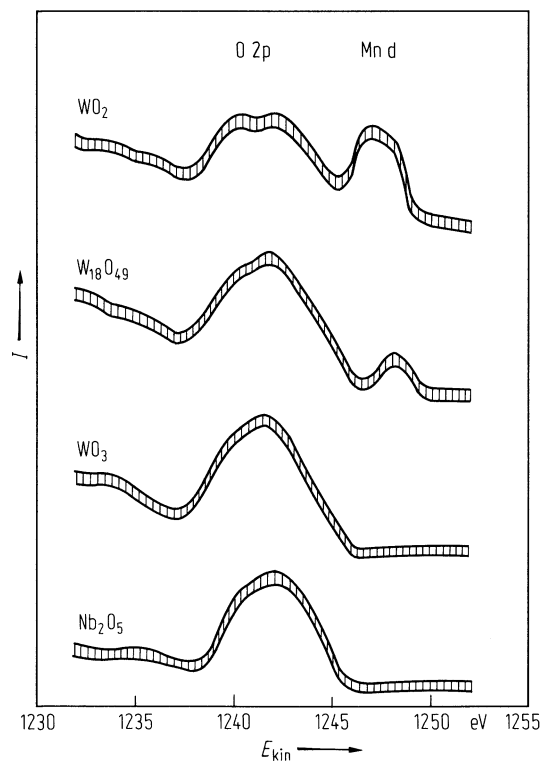


Fig. 2.

Nb_2O_5 . IR spectra (transmission vs. wavenumber) at RT for various modifications [68E].

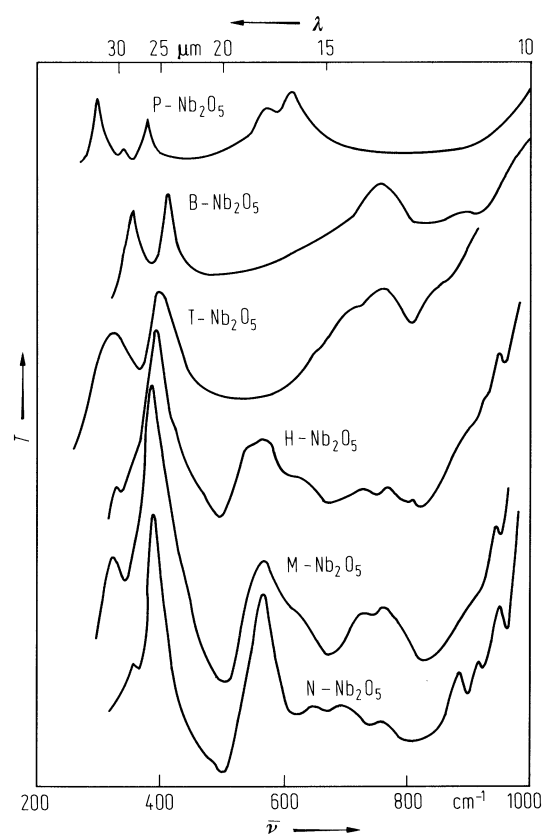


Fig. 3.

Nb_2O_5 . Raman spectra at RT (intensity vs. wavenumber) of the B- and H-modifications with $\text{Ti}_2\text{Nb}_{10}\text{O}_{29}$ and $\text{VNb}_9\text{O}_{25}$ for comparison [76M].

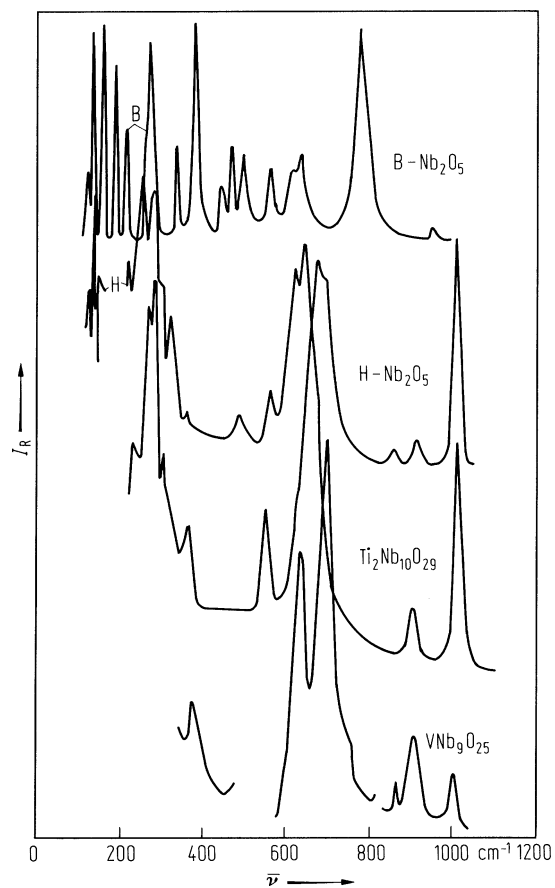


Fig. 4.

NbO₂. He I and He II spectra (intensity vs. electron kinetic energy) of NbO₂ and Nb₂O₅ at RT [78B].

