

INVESTIGATING THE USE OF THE HYDROGEN CYANIDE (HCN) AS AN ABSORPTION MEDIA FOR LASER SPECTROSCOPY

Hošek M., Řeřucha Š., Pravdová L., Číp O.

The Czech Academy of Sciences, Institute of Scientific Instruments, Brno, CZ

The laser spectroscopy is a fundamental approach for the realisation of traceable optical frequency etalons. In the 1.5 μm wavelength band, widely used in telecommunications, the $^{13}\text{C}_2\text{H}_2$ and $^{12}\text{C}_2\text{H}_2$ acetylene is the typical and the most widespread representative of suitable absorption media. We present our investigation of using the hydrogen cyanide (HCN) as a cost-efficient and readily available alternative, that also allows for wider frequency span (1530 - 1560 nm). We have compared the practical aspects of the using new absorption media in comparison to existing experience with the acetylene with an outlook to carry out an independent measurement of the entire spectra. The results should contribute to the future inclusion of the HCN into the *Mise en pratique*, thus allowing for the use of HCN as a spectroscopy media for the realisation of traceable laser etalons.