

THE STUDY OF THE INTERACTION BETWEEN DIMETHYL FORMAMIDE AND WATER IN BINARY MIXTURES BY MEANS OF RAMAN SPECTROSCOPY AND CHEMOMETRIC TECHNIQUES

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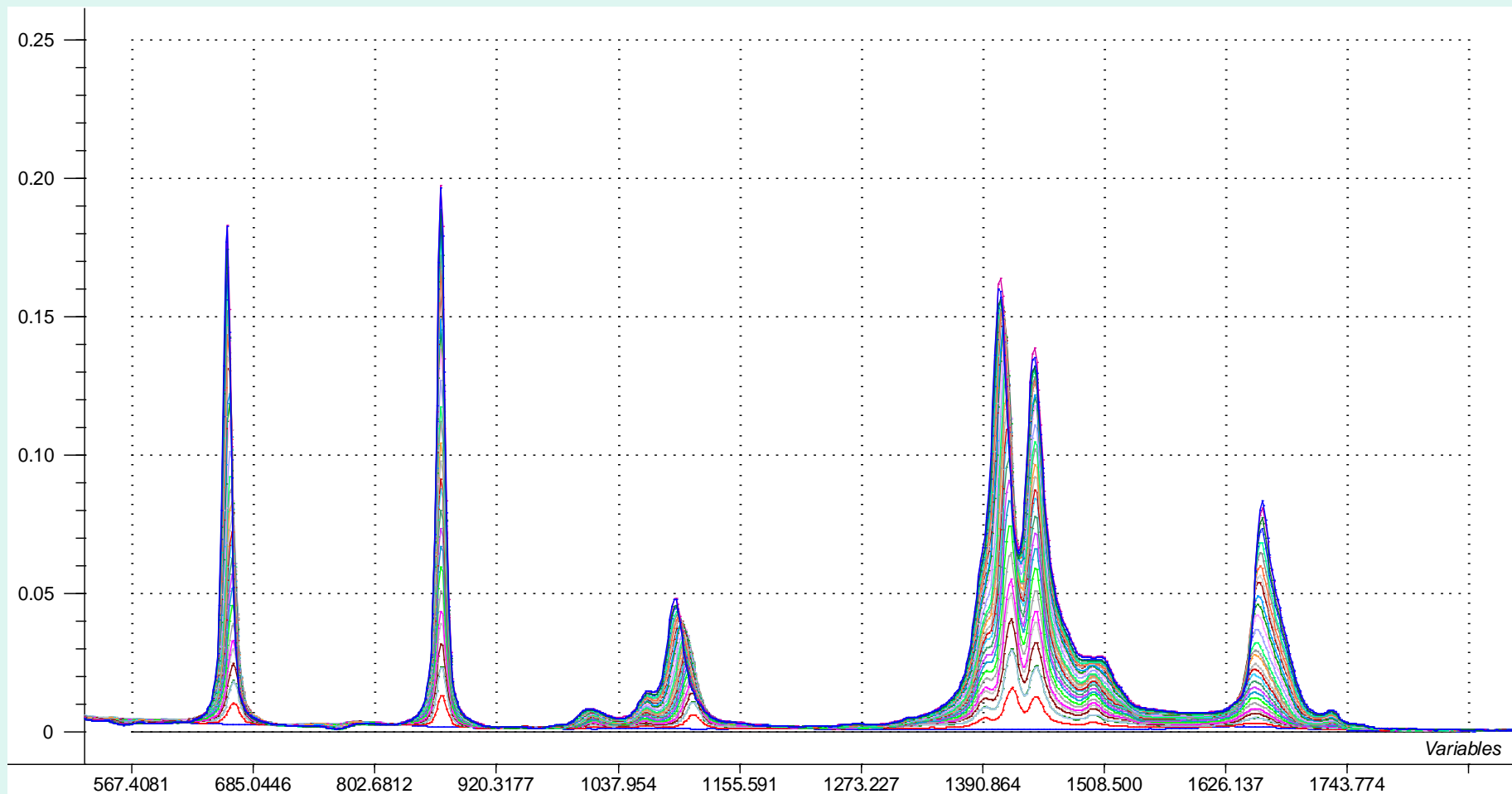


FIG. 1 RAMAN SPECTRA OF DMF-WATER MIXTURES

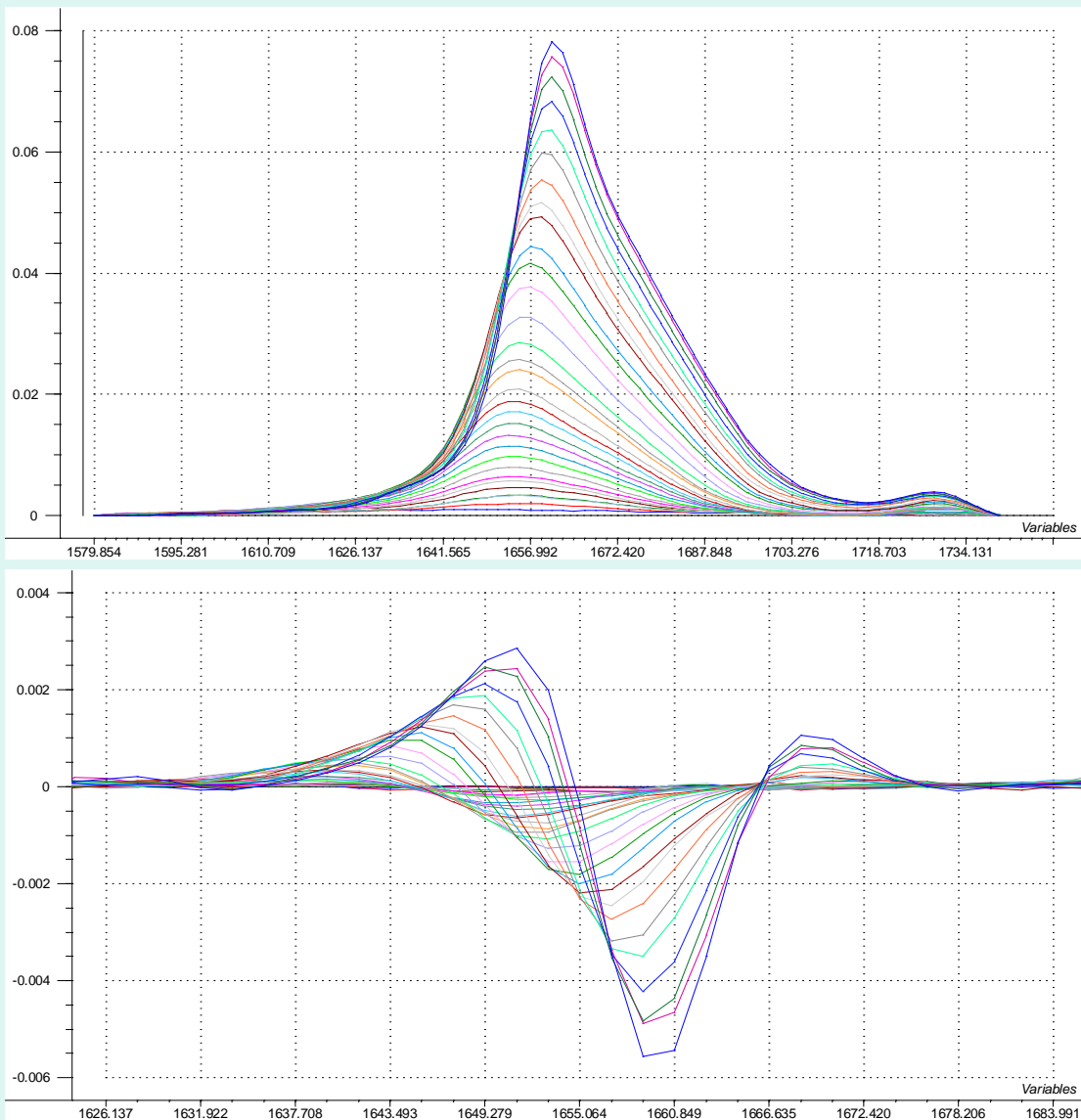


Fig. 2 RAMAN SPECTRA OF THE -C=O STRETCHING VIBRATION AND THEIR SECOND DERIVATIVES

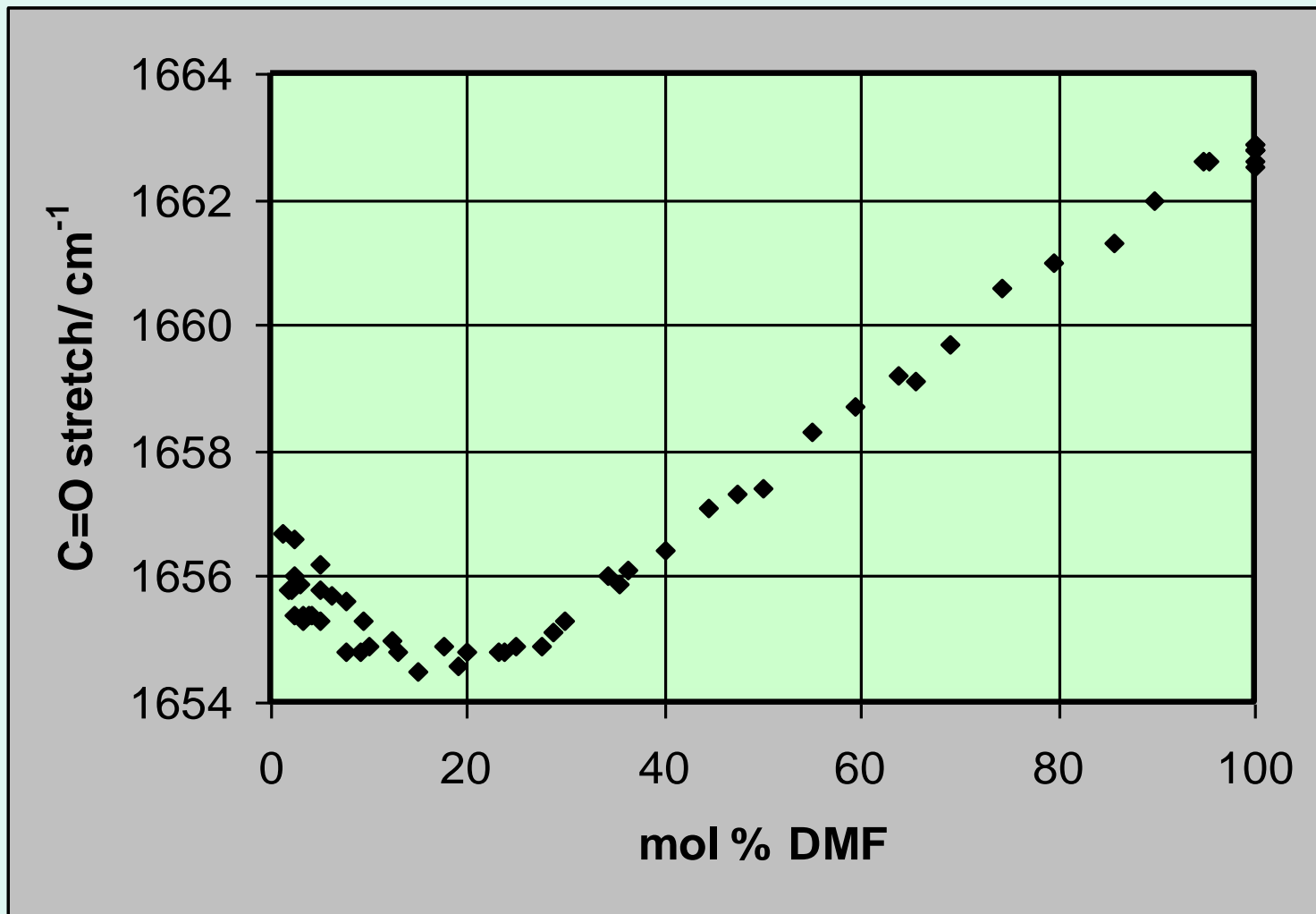
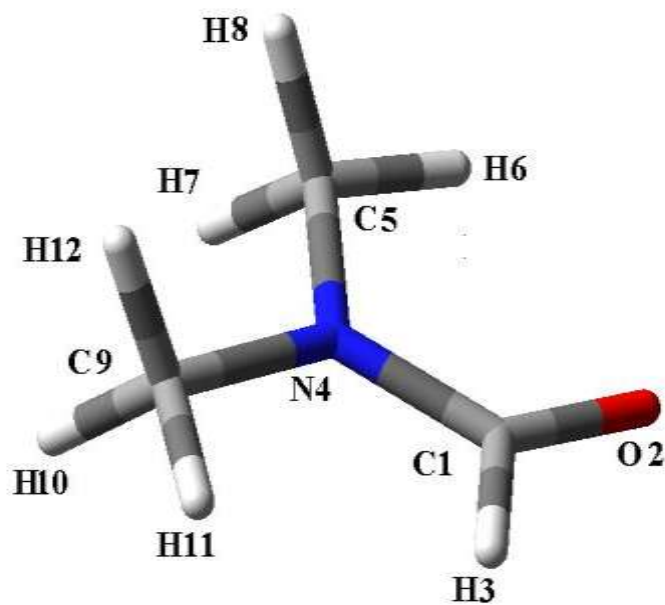
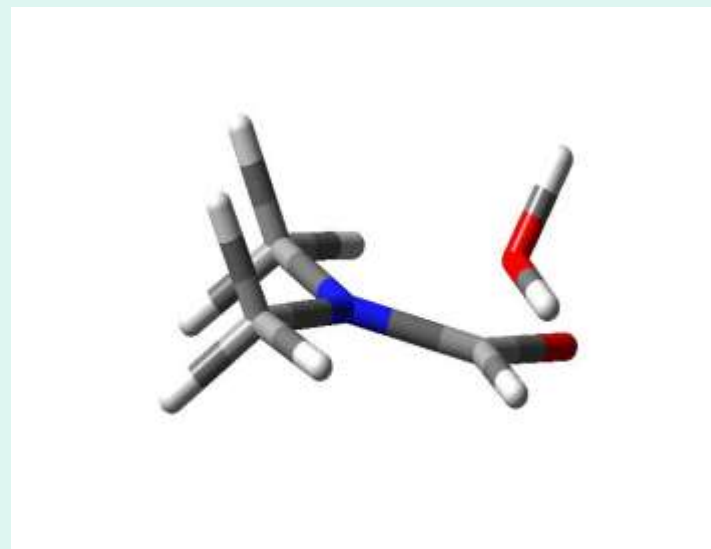
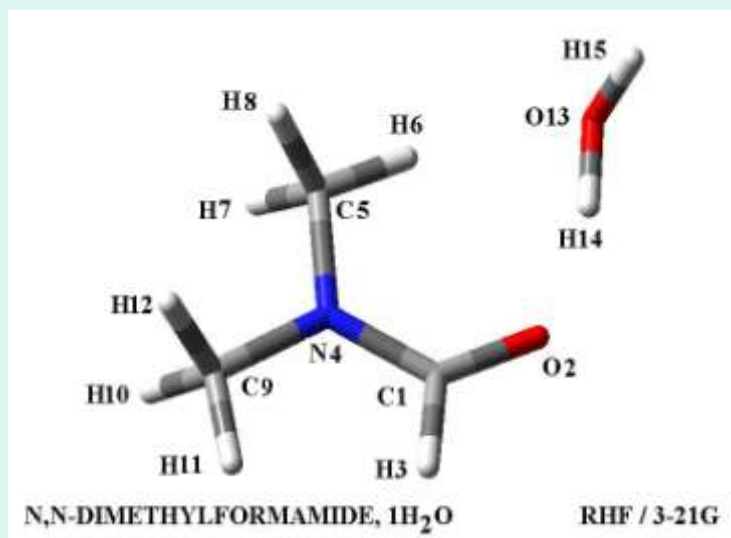


Fig. 3 THE WAVENUMBER SHIFT WITH COMPOSITION FOR THE -C=O STRETCHING VIBRATION



N,N-DIMETHYLFORMAMIDE (DMF)

RHF / 3-21G



The vibrational wave numbers of the C=O vibration of the amide group in DMF and its consecutive hydrates. All values in cm⁻¹.

Mode	DMF	DMF.1H ₂ O	DMF.2H ₂ O	DMF.3H ₂ O	DMF.4H ₂ O	DMF.5H ₂ O	DMF.6H ₂ O
23	1876.92						
29		1849.96					
30		1855.27					
36			1866.12				
41				1831.58			
48					1807.06		
53						1806.91	
59							1790.93

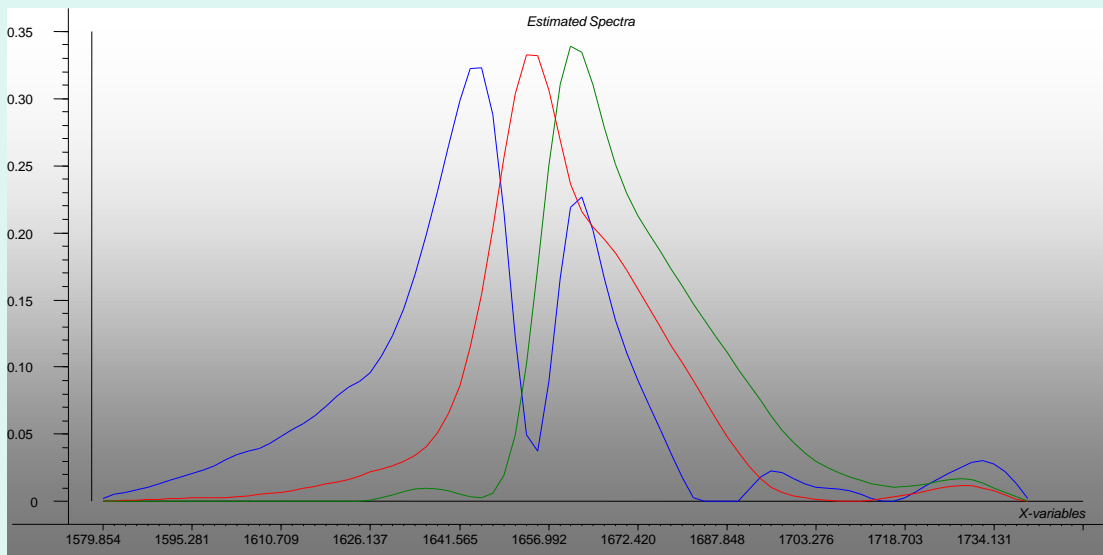
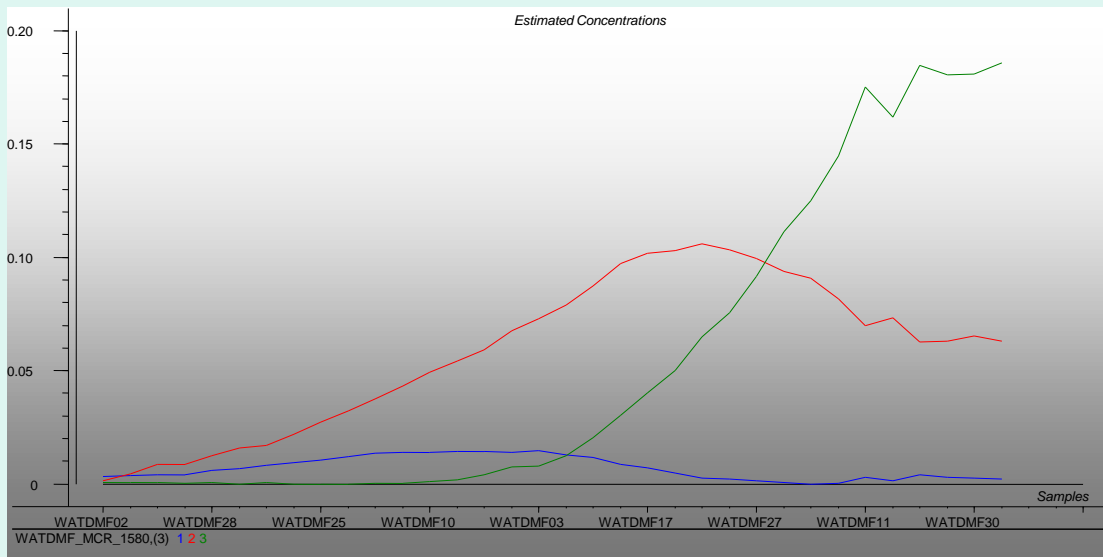


Fig. 4 THE IDENTIFICATION OF THREE MAJOR COMPONENTS CONTRIBUTING TO THE DMF-WATER SPECTRA

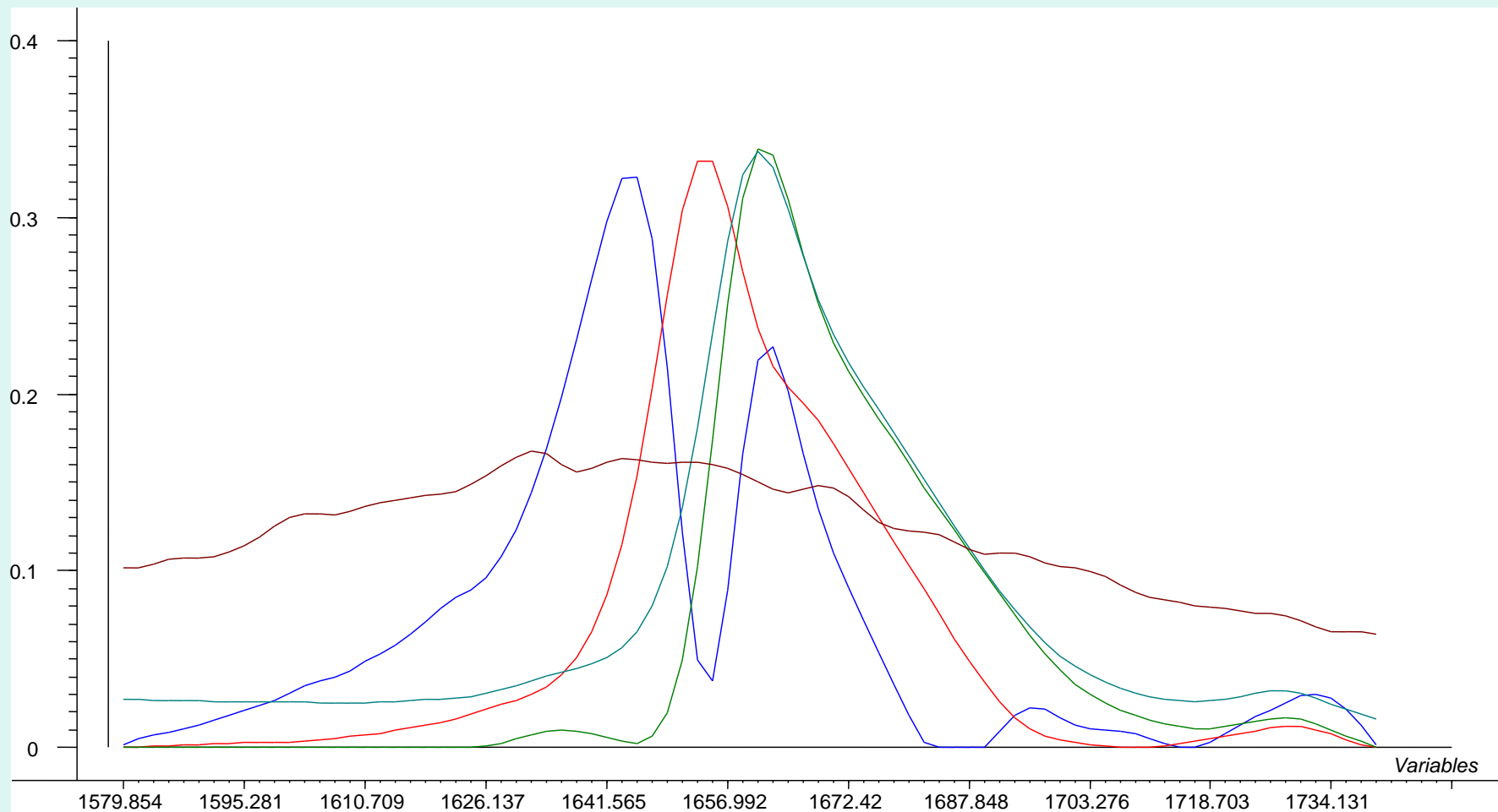


Fig. 5 THE COMPARISON OF THE RESOLVED SPECTRA WITH THE SPECTRA OF DMF AND WATER. Brown trace: water; cyan: DMF.

REFERENCES

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