

VCD PART 2: GOOD INFORMATION OR MISINFORMATION?

As we started discussing about in TR 55 VCD is becoming more and more popular. Several FT/IR manufacturers are getting involved in CD accessories for their units. One of them is Bruker, they recently¹ presented the technique in their well known, and usually high quality, magazine. Text is properly arranged and informative, it well introduces CD to users with no experience in the field. But we read statements as these ones:

The measurement of Circular Dichroism (CD) as a function of wavelength in the visible and UV regions has been possible with commercial instrumentation for some time, but applications have been somewhat limited. In CD the absorption bands are usually rather broad, and measurements are often

limited by the low sample concentrations required (particularly for biomolecules) due to high extinction coefficients and light-scattering effects (the latter are particularly troublesome in the UV/vis range.

which are obviously misleading. We can accept 40 years defined as some time, but the low sample concentration required (particularly for biomolecules) is hardly a disadvantage for conventional UV-VIS CD, it's on the contrary a definite plus!

While we understand that VCD must be promoted, this sort of statement may put in question the quality of the whole article, which is otherwise worth to read as introductory text to VCD spectroscopy.

Looking for other good introductory texts about VCD, a personal choice would be based on:

Keiderling T.A., 'Vibrational Circular Dichroism: Comparison of Techniques and Practical Considerations' in *Practical Fourier Transform Infrared Spectroscopy: Industrial and Laboratory Chemical Analysis*, ed J.R. Ferraro, K. Krishnan, Academic Press, San Diego, 1990, 203

Keiderling T.A., 'Vibrational Circular Dichroism Applications to Conformational Analysis of Biomolecules' in *Circular Dichroism and Conformational Analysis of Biomolecules*, ed G.D. Fasman, Plenum, New York, 1996, 555

Keiderling T.A., 'Peptide and Protein Conformational Studies with Vibrational Circular Dichroism and Related Spectroscopies', in *Circular Dichroism: Principles and Applications*, 2nd edition, ed N. Berova, K. Nakanishi, R.A. Woody, Wiley VCH, New York, 200, 621

Keiderling T.A., Kubelka J., Hilario J., 'Vibrational Circular Dichroism of Biopolymers. Summary of Methods and Applications' in *Vibrational Spectroscopy of Polymers and Biological Systems*, ed M. Braiman, V. Gregoriou, Marcel Dekker Pub., to be printed

Nafie L.A., 'Vibrational Optical Activity', *Applied Spectroscopy*, 50(5), 1996, 14A

Nafie L.A., Freedman T.B., 'Vibrational Circular Dichroism: an Incisive Tool for Stereochemical Applications', *Enantiomer*, 3, 1998, 283

Nafie L.A., 'Infrared and Raman Vibrational Optical Activity: Theoretical and Experimental Aspects', *Annu. Rev. Phys. Chem.*, 48, 1997, 357

Dukor R.K., Nafie L.A., 'Vibrational Optical Activity of Pharmaceuticals and Biomolecules' in *Encyclopedia of Analytical Chemistry – Biomolecules Analysis*, ed R.A. Meyers, John Wiley, Chichester, 2000, 662

Polavarapu P.L., 'Vibrational Spectra: Principles and Applications with Emphasis on Optical Activity', Elsevier, New York, Vol 85, 1998

Pancoska P., 'Circular Dichroism in Analysis of Biomolecules' in *Encyclopedia of Analytical Chemistry – Biomolecules Analysis*, ed R.A. Meyers, John Wiley, Chichester, 2000

¹ Johnson T.J., Burke S., Schultz C.P., Jun B., Weaver D.L., Drews H.H., Boese M. *Bruker Report* 148 (2000) 44-46