

**o.m11.p1 The Use of Optical Transforms in Teaching.**

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Despite the fact that inexpensive modern computers are capable of calculating the diffraction pattern of even the most complex structural model *optical transforms* still have considerable appeal. The visual presentation they afford has great power to teach, to stimulate thought and to aid in the development of intuition, which still plays a major role in solving the more complex diffraction problems in research.

We have recently developed a small portable optical diffractometer for the purposes of teaching which utilises an inexpensive laser pointer, a microscope lens and other inexpensive materials. The diffractometer is designed to display on a screen the optical transform of high resolution images of different models written on 35mm. photographic slides. Numerous diffraction examples have been collected during the course of our research experience and these can now be displayed simply and effectively. These examples include lattices of different symmetries, powder patterns, quasicrystals, liquid and amorphous patterns, paracrystals, helices, atomic size-effect scattering, disorder, modulated structures etc.

