

Among dosimetry tools radiographic films have the unique advantage of providing the capability for dose measurements at very high spatial resolution; and between dosimetry films, radiochromic films are particularly advantageous for their versatility. Thus radiochromic films can be handled in light, easily cut to any size and shape, bent to conform to curved surfaces and immersed in water. All these attributes are embodied in the GAFCHROMIC<sup>®</sup> family of dosimetry films as used in a broad spectrum of medical applications including external beam therapy, brachytherapy, machine quality assurance and radiology.

Current trends in external beam therapy are towards ever more precise treatment protocols with less dose fractionation. Both these factors increase the importance of pre-treatment validation of treatment plans and place a high and increasing value on those measurement techniques that are able to deliver the ability for excellent resolution in the spatial frequency and dose domains.

The talk will show, by example, the range of medical applications covered by radiochromic dosimetry films. It will demonstrate how the attributes of these films are being used to advantage in a full spectrum of radiotherapy applications. The presentation will finish by introducing another advantage of radiochromic film and showing the benefit of multi-channel film dosimetry as a means for improving the integrity of dose measurements by separating dose-independent artifacts and removing them from the response measurement.