

Orthogonal method commonly used as a brachytherapy localization method. In some cases the determination of dummy sources in films may be prevented by the presence of contrast materials that represent an organ position and pelvic bone structure. This paper describes a method for quantitative selective imaging of the dummy source using dual energy technique. The method employs using low energy x-ray beam (50 kVp) and another higher energy beam (100 kVp) in LAT view and, 50 kVp and 90 kVp in AP view. Filtration of the 50 kVp spectrum was 0.6 mm Al inherent filter, while a 4 mm Al filter was added to the 90 kVp and 100 kVp to minimize spectral overlap. The results are successful even though phantom thickness increased within 2, 4, 6 cm in LAT and 1, 2, 3 cm in AP. Image based dual energy technique in brachytherapy made possible to visualize an element of interest in image, with unwanted images suppressed. Enhanced applicator image with dummy source based upon a decomposition method could help an accurate localization efficiently. When the image based dual energy method combines with other imaging modality like cone-beam CT, this method will be a powerful and potential method for specific material enhancement and cancellation in fields of medical imaging.