TECHNOLOGY

# Method for Image Reconstruction of Moving Radionuclide Source Distributions

## OVERVIEW

Positron emission tomography (PET) is a functional imaging technique for studying biological processes *in vivo* for pre-clinical and clinical studies. PET compounds labelled with short-lived positron emitters are delivered to a subject (human, animals or plants). The raw PET scanning data is reconstructed into a time series of cross-sectional images to obtain information regarding tissue physiology and pathophysiology.

Image reconstruction for PET/SPECT is tricky because the source of radionuclide distribution is not static. Image reconstruction without motion compensation results in blurred and degraded images, which have a negative impact on the interpretation and quantitative measurement of the radiotracer distribution.

A method for image reconstruction of moving radionuclide distributions for single photon emission computed tomography (SPECT) has been developed. The invention eliminates motion and blurring artifacts for image reconstruction of moving source distributions. This method potentially allows for human (or small animal) SPECT imaging without the need for anesthesia and/or physical restraints.

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# Additional Information

## INSTITUTION

University of Maryland, Baltimore

## PATENT STATUS

Isuued US #8,335,363

## LICENSE STATUS

Available for licensing (co-owned with another institution)

## CATEGORIES

- Imaging
- Software + Algorithm
- Other

## INVESTIGATOR(S)

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## EXTERNAL RESOURCES

- US #8,335,363

MS-2009-091