# Scatter Reducing Device for X-ray Imaging

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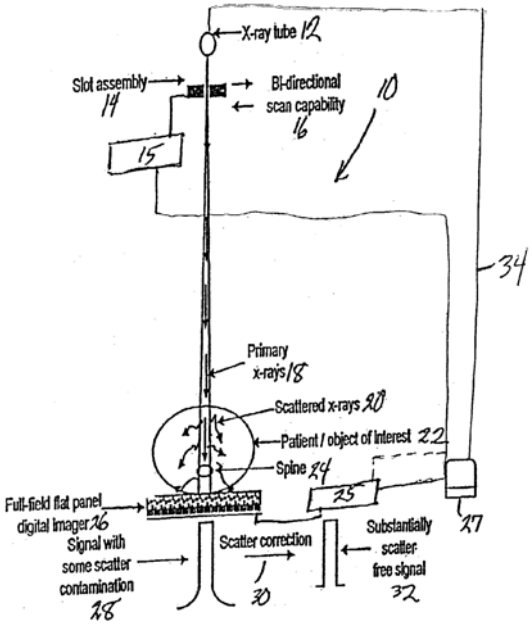
## Background

X-ray scans are the most commonly used imaging procedures covering all body areas. The diagnostic images acquired by X-ray imaging enable physicians to detect, diagnose & treat diseases. A superior image quality will increase the chances of a more accurate & reliable diagnosis & subsequent treatment regimen. Scattering remains a major problem in imaging applications. It results in poor image quality & requires patients to be exposed to higher radiation dosage. Existing tools do not adequately address this problem.

## Technology

UMass Medical School investigator Dr Andrew Karellas & colleagues have developed a system & methods for removing x-ray scatter in imaging applications such as mammography & bone densitometry. The methodology can be broken down into the following steps. First, a scanning collimator placed between the x-ray source & the detector, is used to define the relative movement between x-ray beam & the x-ray detector. Image data is acquired using a pixilated solid state detector such as a charge coupled device (CCD), in which an electronic window (slot) is scanned across the two dimensional space. The electronic slot can be configured such that the x-ray beam transmitted through the mechanical window is aligned with the electronic window of the detector. A scatter correction program can then correct for scattering in the acquired image for improved imaging.




## Application

X-ray Imaging instruments

## Salient Features and Competitive Advantages

- **Superior Scatter suppression** The scattered radiation that impinges on the detector from a path outside a linear path from the radiation source to the detector is highly undesirable in digital imaging. The methodology described is the state of the art in scatter suppression
- **Improved visualization**. Improves the quality by increasing signal to noise ratio without the use of an image intensifier.
- **Linear correlation:** between exposure & signal on an imaging detector.
- ***Reduced Acquisition Time:*** High signal to noise ratio would translate into faster acquisition
- ***Accurate Diagnosis:*** enhanced images would lead to accurate diagnosis
- **Safer:** Lower X-ray dosage can in principle achieve the image quality desired
- ***Broad Applicability***: can be utilized for imaging application in medical, scientific & industrial applications
- ***Market Potential***: According to some estimates more than 60 million procedures use medical diagnostic products around the world every year, generating sales of about $1.2 billion.

## Business Opportunity

UMass OTM is seeking statements of interest from parties interested in licensing &/or sponsoring collaborative research to further develop, evaluate, and /or commercialize this technology.

## Contact:

Kevin Lehman, PhD
Licensing Officer
Phone: (508) 856-5494
Fax: (508) 856-1482
E-mail: Kevin.Lehman@umassmed.edu