

# FCR 16

Office of the President  
March 16, 2015

Members, Board of Trustees:

## PATENT ASSIGNMENT REPORT

Recommendation: that the Board of Trustees accept the patent assignment report for the period October 1 - December 31, 2014.

Background: At its March 1997 meeting, the Board of Trustees authorized the University of Kentucky Research Foundation to conduct all future copyright and patent filings and prosecutions. Quarterly reports on patent and copyright applications are to be submitted to the Finance Committee of the Board.

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Action taken:     Approved     Disapproved     Other \_\_\_\_\_

PATENT ASSIGNMENTS  
FOR THE PERIOD October 1 – December 31, 2014

Patents

The following assignment on behalf of the Board of Trustees of the University of Kentucky Research Foundation has been executed:

1. **U.S. Patent Application Serial Number: 14/527/827**  
**Filed:** October 30, 2014  
**Title:** High-Resolution Absorption Imaging Using Annihilation Radiation from an External Positron Source  
**Inventor:** Michael Kovash (Physics and Astronomy)  
**Technical Description:** This invention relates generally to the fields of medical and industrial imaging and, more particularly, to an apparatus used to measure high-resolution absorption images of a sample and to a method of using the same.  
**Summary:** X-ray projections are the most widely used medical imaging technology, being used to diagnose and treat medical conditions in children and adults. This invention discloses a high-resolution sample imaging apparatus provided for generating a 2-D and/or 3-D image of an object of interest. The apparatus may be broadly described as comprising (a) a positron source emitting oppositely-directed annihilation radiation parts, (b) an array of gamma-ray tagging detectors, (c) an array of gamma-ray absorption detectors, (d) a sample to be imaged, and (e) a controller in the form of a computing device. This invention also discloses a method for generating an image using directed energy lateral tomographic analysis (DELTA) by (1) positioning a sample to be imaged between a positron source and an array of gamma-ray absorption detectors, (2) directing one member of an annihilation radiation pair from the positron source toward the array of gamma-ray tagging detectors and the other toward an array of gamma-ray absorption detectors, (3) detecting the arrival time, position and energy of the tagging member of the annihilation pair at the array of gamma-ray tagging detectors, and (4) detecting the arrival time, position and energy of the absorption member of the annihilation pair at the array of gamma-ray tagging detectors, if it transits the absorbing sample.

Patent Activities

Fiscal year to date as of December 31, 2014

Number of Patent Applications	3
Number of Patents Issued	16
Patent Gross Revenue	\$761,669.43