

(12) **United States Patent**  
**Yamaya et al.**

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(54) **INTEGRATED PET/MRI SCANNER**

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G01R 33/34076

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See application file for complete search history.

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(57) **ABSTRACT**

In the integrated PET/MRI scanner provided with an RF coil for MRI and a plurality of PET detectors in the measuring port of the MRI scanner, the PET detectors are disposed with spaces therebetween and at least the transmitting coil elements of the RF coil for MRI are disposed between adjacent PET detectors. Here, the PET detectors are disposed in the circumferential direction of the measuring port with spaces therebetween and the transmitting coil elements are disposed in the axial direction of the measuring port. Alternatively, at least some of the PET detectors are disposed in the axial direction of the measuring port with spaces therebetween and the transmitting coil elements are disposed between adjacent PET detectors. The PET detectors can be DOI-type detectors capable of detecting position in the depth direction.

**5 Claims, 19 Drawing Sheets**

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