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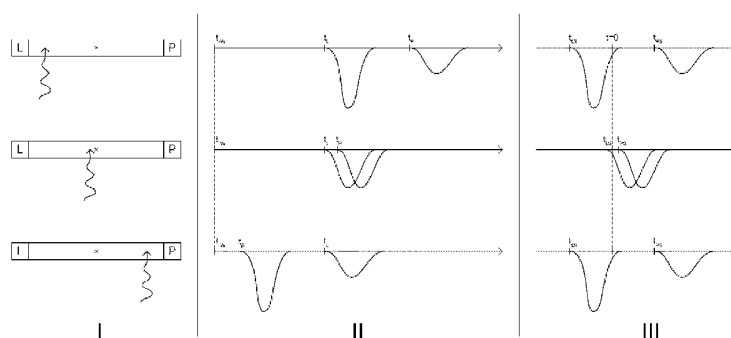
**Declarations under Rule 4.17:**

- as to the identity of the inventor (Rule 4.17(i))
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- (54) **Title:** A METHOD AND A SYSTEM FOR DETERMINING PARAMETERS OF REACTIONS OF GAMMA QUANTA WITHIN SCINTILLATION DETECTORS OF PET SCANNERS



**Fig. 1**

- (57) **Abstract:** A method for determining parameters of reaction of a gamma quantum within a scintillation detector of a PET scanner, wherein the signal measured by the scintillator is transformed in at least one photomultiplier into an electric measured signal. The method comprises obtaining an access to a database (130) comprising reference standard signals (W) and reaction parameters assigned to the reference standard signals (W); comparing the measured signal (S) to the reference standard signals (W) and selecting the reference standard signal (W) that best fits the measured signal (S); assigning to the measured signal (S) the reaction parameters assigned to the selected best-fitting reference standard signal (W), as parameters of the reaction of the gamma quantum within the scintillation detector (101) for the measured signal (S); wherein the measured signal (S) and the reference standard signals (W) are represented by points (P) within a generalized measurement space ( $\Omega_p$ ) having a number of dimensions (N measurements) being equal to the total number of measurements performed for that gamma quantum.

