

radiation generator provides X-ray radiation with the same dosage, the individual difference between the persons to be inspected will result in that the X-ray radiation passing through the different human bodies have different dosages, and is mainly a difference in weight of the persons to be inspected.

5 For example, the weight of a heavier person to be inspected may be twice the weight of a lighter person to be inspected, which will result in difference in quality of obtained X-ray radiation transmission image if the X-ray radiation generator provides X-ray radiation with the same dosage.

10 In order to achieve security inspection effects, it is necessary for the security inspection system in an existing apparatus to provide X-ray radiation with larger dosage so that when a heavier person is inspected, it can obtain an image with sufficient definition for identifying the forbidden objects, which will result in that when a lighter person is inspected, the person absorbs a larger dosage of X-ray radiation, causing harmfulness in radiation security for the inspected person.

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SUMMARY

Embodiments of the present disclosure provide a human body security inspection system and a method, which enables identification of the weight of a person to be inspected and adjustment of radiation parameters and scan parameters based on the
20 identification result, thereby not only meeting requirements for imaging quality but also decreasing dosage of radiation received by the inspected person.

According to an aspect of the present disclosure, there is provided a human body security inspection system, comprising:

an X-ray source configured to provide X-ray radiation for scanning a human body
25 to be

X-ray source to be less than the voltage U , or controls the current applied to the X-ray source to be less than the current I , or controls the movement speed of the carrying device to be larger than the movement speed v .

In an embodiment of the present disclosure, when the sensor senses that the weight
5 of the person to be inspected is less than g , the controller controls the voltage applied to the X-ray source to be less than the voltage U and controls the current applied to the X-ray source to be less than the current I .

In an embodiment of the present disclosure, when the sensor senses that the weight
10 of the person to be inspected is less than g , the controller controls the voltage applied to the X-ray source to be less than the voltage U and control the movement speed of the carrying device to be larger than the movement speed v .

In an embodiment of the present disclosure, when the sensor senses that the weight
15 of the person to be inspected is less than g , the controller controls the current applied to the X-ray source to be less than the current I and controls the movement speed of the carrying device to be larger than the movement speed v .

In an embodiment of the present disclosure, when the sensor senses that the weight
20 of the person to be inspected is less than g , the controller controls the voltage applied to the X-ray source to be less than the voltage U , controls the current applied to the X-ray source to be less than the current I , and controls the movement speed of the carrying device to be larger than the movement speed v .

Specifically, the disclosure provides following specific examples of control parameters.

When the weight of the person to be inspected is not less than g , the controller controls the voltage applied to the X-ray source to be U , controls the current applied to
25 the X-ray source to be I and controls the movement speed of the carrying device to be v .

When the weight of the person to be inspected is not less than $0.8g$ and less than g , the

which meets inspection requirements, is allowed to be obtained, and

the controller is further configured to control the voltage applied to the X-ray source to be less than the voltage U , control the current applied to the X-ray source to be less than the current I , and control the movement speed of the carrying device to be
5 larger than the movement speed v , when the weight of the person to be inspected sensed by the sensor is less than g .

8. The human body security inspection system according to claim 1, wherein,
the sensor is arranged in the carrying device or at an initial position thereof, such
10 that once the human body to be inspected enters the carrying device, the weight of the human body to be inspected is allowed to be obtained by sensor.

9. The human body security inspection system according to claim 1, wherein,
the carrying device is one of a conveyer belt, a pallet and an escalator.

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10. A method for human body security inspection performed by using the human body security inspection system as defined in claim 1, the method comprising steps of:

obtaining the weight of the human body, which comprises obtaining the weight of the human body by the sensor after the human body to be inspected enters the human
20 body security inspection system,

scanning the human body, which comprises acquiring information about the weight of the human body from the sensor by the controller, and controlling by the controller, based on the information about the weight of the human body, the voltage or current applied to the X-ray source and the movement speed of the carrying device so
25 that the human body is scanned, and

finishing the security inspection, which comprises obtaining the X-ray radiation transmission image of the human body based on the scanning of the human body, thereby finishing the security inspection of the human body.