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Title:Three-dimensional terahertz computed tomography of human bones
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Abstract:Three-dimensional terahertz computed tomography has been used to investigate dried human bones such as a lumbar vertebra, a coxal bone, and a skull, with a direct comparison with standard radiography. In spite of lower spatial resolution compared with x-ray, terahertz imaging clearly discerns a compact bone from a spongy one, with strong terahertz absorption as shown by additional terahertz time-domain transmission spectroscopy.
Number of references:27
Inspec controlled terms:bone - computerised tomography - medical image processing - orthopaedics - terahertz wave imaging
Uncontrolled terms:three-dimensional terahertz computed tomography - human bones - lumbar vertebra - coxal bone - skull - standard radiography - low spatial resolution - x-ray imaging - terahertz imaging - compact bone - strong terahertz absorption - terahertz time-domain transmission spectroscopy
Inspec classification codes:A8760J X-rays and particle beams (medical uses) - A8770E Patient diagnostic methods and instrumentation - B7510P X-ray techniques: radiography and computed tomography (biomedical imaging/measurement) - B6135 Optical, image and video signal processing - B7310N Microwave measurement techniques - C7330 Biology and medical computing - C5260B Computer vision and image processing techniques
Treatment:Practical (PRA); Experimental (EXP)
Discipline:Physics (A); Electrical/Electronic engineering (B); Computers/Control engineering (C)
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