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## Soft tissue disease detection via grating-based multimodal x-ray imaging

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Using the grating-based multimodal X-ray imaging diagnostic instrument independently developed by our team, foreign bodies in skin trauma, rat articular cartilage, early pulmonary fibrosis and pulmonary edema in rats were detected, and the signal values of the target and surrounding tissues were quantitatively compared. Through the introduction of image processing technology, such as the introduction of R' value processing method, more information of different aspects of the targets could be obtained, and comprehensive imaging display could be performed. Findings: Grating-based multimodal X-ray imaging could provide three kinds of imaging information in one shot, i.e., absorption, phase-contrast and dark-field. Compared with conventional X-ray imaging, it could sensitively detect common subcutaneous foreign bodies after skin trauma, clearly display the cartilage layer, and detect and quantify early pathological changes in lung. By introducing new processing methods such as R' value and comprehensive display, the sensitivity to the lesion site could be significantly improved. Conclusion & Significance: In the future, with the further development of software and hardware, grating-based multimodal X-ray imaging would become an important tool for early diagnosis of various soft tissue diseases.

## Biography

Jun Wu, Professor, director of the Department of Burns and Plastic Surgery, The First Affiliated Hospital of Shenzhen University, member of the International Society of Burn Injuries (ISBI), Southeast Asian and Chinese representative of the ISBI, and chairman of the Burn Surgery Branch of the Chinese Medical Association, etc. He founded and served as editor-in-chief of Burns and Trauma (IF=5.099, the academic journal with the highest impact factor in Burns field).