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"Digital Radiography and Computed Tomography of Cast Light Metals", K. W. Dolan, J. J. Haskins and D. E. Perkins

Digital radiography (DR) and computed tomography (CT) have been used to characterize size, distribution and types of defects in cast light metal components. Two dimensional radioscopic images are obtained with glass scintillator and CCD-camera based systems using frame integration to reduce noise and improve contrast. High resolution at 10 to 20 lp/mm have been demonstrated for small components, e.g., less than 50 mm (2 inch) chord length, and 5 to 10 lp/mm for larger components, e.g., less then 100 mm (4 inch) chord length. Three dimensional information from computed tomography reconstructions are included. Image analysis methods are demonstrated that provide defect volume fraction and size distributions. System performance and application of DR/CT methods to automated production acceptance will be discussed.

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