

ELECTROMAGNETIC INSPECTION SYSTEMS AND METHODS

ABSTRACT

In some embodiments, a system for evaluation a coating, such as a thermal barrier coating, includes an electromagnetic inspection device and a controller in operative communication with the electromagnetic inspection device. The electromagnetic inspection device includes an electromagnetic radiation source and a detector. The electromagnetic radiation source generates pulsed electromagnetic radiation that penetrates through a coating of a component of an engine. The detector receives reflected electromagnetic radiation that is reflected from the component. The controller is configured to receive electromagnetic radiation waveform that is representative of the reflected electromagnetic radiation. The controller is also configured to determine a property of the coating based on the electromagnetic radiation waveform and to determine a remaining life of the coating based on the property. The controller may also be configured to communicate a control command to the engine based on the remaining life.

[Figure 1]