

## NONDESTRUCTIVE AND NONCONTACT ANALYSIS SYSTEM

## ABSTRACT

5           In a nondestructive and noncontact analysis system for analyzing and  
evaluating an object (SW), a light beam generation/modulation apparatus (12)  
emits a modulated and focused light beam (MLB) to thereby irradiate the object  
(SW), and the modulation of the modulated and focused light beam is carried out  
with a modulation signal (MO-S) synchronized with a reference signal (RE-S)  
10   composed of a series of regular pulses. A magnetism detection apparatus (22)  
detects a magnetic field (MF), which is generated by an electric current induced  
by irradiating the object with the modulated and focused light beam, to thereby  
produce a magnetic field signal (MF-S). A signal extraction circuit (24) extracts  
a phase difference signal (PDF-S) between the reference signal (RE-S) and the  
15   magnetic field signal (MF-S). An image data production system (Fig. 14)  
produces phase difference image data ( $PDF_{ij}$ ) based on the phase difference  
signal (PDF-S).

FIG. 1