DYNAMIC PHOTOELASTICITY AND RELATED TOPICS
(2000-2099)

Bibliography

2001 Frocht M M
KINEMATOGRAPHY IN PHOTOELASTICITY
Transactions American Society of Mechanical Engineers
1932, Vol. 54, p. APM 54-9.

Moving pictures are presented showing stress fluctuations in a beam due to impact of a falling weight. Camera Speed limited to 64 frames/sec.

2002 Foeppl L
SLOW MOTION PICTURES OF IMPACT TESTS BY MEANS OF PHOTOELASTICITY
Journal of Applied Mechanics
Transactions American Society of Mechanical Engineers
1949, Vol. 71, p. 173.

Moving pictures are presented showing the stress fluctuation in beams due to the impact of a hammer. Both elastic and plastic conditions are shown. Camera speed maximum of 3020 frames/sec.

2003 Perkins H C
MOVIES OF STRESS WAVES IN PHOTOELASTIC RUBBER
Journal of Applied Mechanics, Trans. ASME
1953, Vol. 75, p. 140.

Moving pictures are presented which show stress waves propagating in photoelastic rubber specimens. Camera speed maximum of 5000 frames/sec.

2004 Frocht M M and Flynn P D
STUDIES IN DYNAMIC PHOTOELASTICITY
Journal of Applied Mechanics, Trans. ASME
1956, Vol. 78, p. 116.

Equipment and techniques are described for obtaining dynamic photoelastic stress patterns by means

of streak photography. Dynamic photoelastic stress patterns showing stress-wave propagation are given for a bar struck axially by a rigid mass. 1,500,000 equivalent exposures/sec.

2005 Durelli A J and Riley W E
EXPERIMENTS FOR THE DETERMINATION OF TRANSIENT STRESS AND STRAIN DISTRIBUTION IN TWO-DIMENSIONAL PROBLEMS
Journal of Applied Mechanics, Trans. ASME
1957, Vol. 79, p. 69.

A photoelastic material of low modulus of elasticity is developed for use in stress-wave propagation studies. Dynamic and static photoelastic and mechanical properties are investigated and methods are described. Photographs of fringe patterns are shown for circular discs and beams subjected to impact. Camera speed 14,000 frames/sec.

2006 Sutton G W
A PHOTOELASTIC STUDY OF STRAIN WAVES CAUSED BY CAVITATION
Journal of Applied Mechanics, Trans. ASME
1957, Vol. 79, p. 340
Discussion Journal of Applied Mechanics
1958, Vol. 80, pp. 298-299.

Ultra-high-speed photoelastic techniques have been applied to a study of the transient stresses and strains in a photoelastic plastic when subject to cavitation. Cavitation bubbles have been photographed collapsing on the surface of a photoelastic specimen and the resulting strain wave has been photographed. The static and dynamic properties of CR-39 are determined. Camera speed 1,000,000 frames/sec.

2007 Betser A A and Frocht M M
A PHOTOELASTIC STUDY OF MAXIMUM TENSILE STRESSES IN SIMPLY SUPPORTED SHORT BEAMS UNDER CENTRAL TRANSVERSE IMPACT
Journal of Applied Mechanics, Trans. ASME
1957, Vol. 79, p. 509
Discussion Journal of Applied Mechanics
1958, Vol. 80, p. 305.

Photoelastic streak photographs were taken for beams subjected to the impact of a heavy mass. This article is primarily concerned with the interpretation of results of this study. Experimental techniques are not fully discussed.