

The photoelastic technique is used in studying the problem of reflection of stress waves at a free boundary. Photographs shown are very clear and show the reflection very descriptively. Multiple spark camera was used which could take successive pictures at times ranging from 5 microsec to 50 microsec. Very clear photographs.

- 2021 Zandman F
A PHOTOELASTIC STUDY OF RUPTURE UNDER PURE FLEXURE
Compt. Rend. Académie des Sciences (Paris)
1952, Vol. 234, pp. 2337-2339.
- 2022 Volterra E
SOME RESULTS OF THE DYNAMIC TESTING OF MATERIALS
Riv. Nuovo, Cim.,
1948, Vol. 4, pp. 1-28.
- 2023 Schwieger H
PHOTOELASTIC SHOCK INVESTIGATIONS IN THIN GLASS BARS
Ann. Phys. (Leipzig)
1955, Vol. 16, pp. 119-133.
- 2024 Schwieger H and Dietz H
OPTICAL POLARIZATION EXPERIMENTS ON THE ELASTIC IMPACT
THEORY OF ST. VENANT AND FLAMANT
Ann. Phys. (Leipzig)
1955, Vol. 16, pp. 306-321.
- 2025 Frocht M M and Betser A A
A PHOTOELASTIC STUDY OF MAXIMUM TENSILE STRESSES IN
SIMPLY SUPPORTED BEAMS UNDER CENTRAL TRANVERSE IMPACT
Technical Report, OOR Contract No. DA-11-022-ORD-1609,
October 1955.
- 2026 Stanton J S
A METHOD OF ASSESSING TRANSIENT STRESSES IN PHOTOELASTIC
SUBSTANCES
Review of Scientific Instruments
1949, Vol. 20, p. 139.
- 2027 Murray W M
A PHOTOELASTIC STUDY IN VIBRATION
Journal of Applied Physics
1941, Vol. 12, pp. 617-622.

A brief half page note showing a photograph as an indication that photoelasticity can be used to study transient stress phenomena.

A photoelastic study of steady state vibration of a cantilever beam. Moving pictures not taken.

- 2028 Riparbelli C, Hitch H and Boehler G
PHOTOELASTIC STRESS ANALYSIS OF A SHOCK LOADED STRUCTURE
Paper presented at Meeting of the Division of Fluid Dynamics,
American Physical Society, Ithaca, New York, 11-12 September 1951
Abstract in Physical Review, 1951, Vol. 84, p. 614.

The analysis of stress propagation in solids of nonconstant section has occasioned the development of this technique, of which some of the first results are presented. High velocity moving pictures (4000 frames per second) were taken in the polariscope of specimens made out of gelatin. The specimens were struck by a hammer at various velocities between zero and 30 ft/sec _____. Moving pictures of isochromatic patterns are presented with emphasis on the boundary effects in plates of various shapes. _____.

- 2029 Jahn R G
PHOTOELASTIC STRESS ANALYSIS OF A SHOCK LOADED STRUCTURE
Paper presented at Meeting of the Division of Fluid Dynamics,
American Physical Society, Ithaca, New York, 11-12 September 1951
Abstract in Physical Review, 1951, Vol. 84, p. 612
Also Princeton University Department of Physics Technical Report
II-9 Contract NRO61-020, N6ORi-105.

To study the form and intensity of the stress distributions set up inside an object subjected to a shock wave, a solid model of photoelastic Bakelite was mounted in the shock tube and the stress progressions in it analyzed by means of a conventional circular polariscope. _____ (p - q) patterns were taken at 10 - 20 microsec intervals starting at the time of impact. _____.

- 2030 Sutton G W
A STUDY OF THE APPLICATION OF PHOTOELASTICITY TO THE INVESTIGATION OF STRESS WAVES
Ph.D. Thesis, California Institute of Technology, Pasadena, California, 1955.

A detailed account is given of the determination of the static and dynamic optical and mechanical properties of CR-39. The suitability of photoelastic techniques for investigating stress waves is analyzed very carefully.

- 2031 Kolsky H
A PHOTOELASTIC INVESTIGATION OF THE HARDNESS OF PLASTIC AND GLASS
Transactions Society of Glass Technology
1952, Vol. 36, p. 54.

- 2032 Kolsky H and Christie O G
THE FRACTURES PRODUCED IN GLASS AND PLASTICS BY THE STRESS OF WAVES
Transactions Society of Glass Technology
1952, Vol. 36, p. 65.