Abstracts of Papers From Other Journals

Abstracts of papers appearing in other journals are, from time to time, published in the SMPTE Journal. *The abstracts are chosen for their importance and possible value to researchers as well as for their timely interest.*

The following abstracts are of papers from the Russian journal *Tekhnika Kino i Televideniya*, May 1980, translated by Arthur Biderman.

Review of Basic Technological Work Conducted in the Field of Professional Cinematography in 1979, pp. 4–24.

The basic results of scientific research and production work conducted by NIKFI and by the "Mosfilm" and "Lenfilm" motion picture studios are presented. Characteristics and technical parameters of new products are given.

Development of an Automatic Sensor-Analyzer of Silver Ions for Systems for Regenerating Fixing Solutions, I. M. Oganezova, V. P. Oladko, L. T. Tevdoradze, G. P. Chichua, and G. N. Shmal'tsel', pp. 25–28.

An arrangement for an automatic sensor analyzer of silver ions for use with systems for the regeneration of fixing solutions is described. Results of laboratory and production tests are given.

Analysis of the Steadiness of a System for the Gyroscopic Stabilization of a Motion Picture Camera, V. L. Budkin, Yu. I. Melamed, V. B. Mun'kin, and V. V. Fateev, pp. 29–31.

The dynamics and accuracy are analyzed for a gyroscopic stabilization system with a flywheel applied in a spatial gyrostabilizer of a motion picture camera.

Device for Program Control of Light-Metering Valves of Additive Film Printers, A. P. Ol', G. Yu. Prosvirnin, E. V. Timoshchenkov, and G. I. Tumanov, pp. 32–36.

The main technical features are given and the basic elements are described for the program control device of light metering valves of additive film printers. The functional diagram of the logic block for the program control is considered.

Television Broadcasting of Wide Screen Films, R. S. Kharchikyan, pp. 37–38.

The features associated with the television broadcasting of wide screen films and the changes required in transmitting equipment are considered.

Mathematical Simulation of a Transverse Photographic Soundtrack, N. K. Ignat'ev, pp. 38–41.

The relationship between light scattering by the soundtrack image and frequency distortions of the sound signal is established. The frequency response of the soundtrack is determined according to the given function of the scanning beam in the plane of the motion picture film. The need for using the laborious operation of two dimensional convolution is eliminated.

Acoustooptic Analyzer for Converting Light Signals, V. I. Balakshii, V. N. Parygin, and L. E. Chirkov, pp. 41–44.

The principle of operation and limiting characteristics of an acoustooptic light signal converter are considered. The operational features of the device are also considered under conditions that satisfy television usage. It is shown that the device makes it possible to smoothly reconstruct practically all the parameters — the sensitivity, position of the

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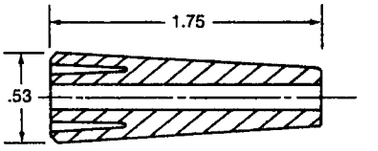
Orange	1-1483-03	1-1464-03	1-1490-03
Yellow	1-1483-04	1-1464-04	1-1490-04
Green	1-1483-05	1-1464-05	1-1490-05
Blue	1-1483-06	1-1464-06	1-1490-06
Violet	1-1483-07	1-1464-07	1-1490-07
Gray	1-1483-08	1-1464-08	1-1490-08
White	1-1483-09	1-1464-09	1-1490-09
Black	1-1483-10	1-1464-10	1-1490-10



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reference colors, and the degree of color separation.

Principles of Construction for Generators of TV Measuring Signals, M. I. Krivosheev, V. P. Dvorkovich, Yu. A. Medvedev, and V. Zh. Kolomenskii, pp. 45–53.

The principles of construction are considered for modern generators of TV measuring signals used during tuning, diagnostic tests, and control of TV channels directly in the transmission process. The characteristics, parameters, and block diagram of the new G6-30 Soviet generator of TV measuring signals, which meets the requirements of the international organizations CCIR and OIRT, are presented.

Use of the "Arriflex 35BL-II" Motion Picture Camera with the Zoom Lens 350PF19-1A, V.M. Sarkisova, p. 54.

An adapter is described for mounting the zoom lens 350PF19-1A on the "Arriflex 35BL-II" motion picture camera for shooting wide screen films.

Unit for Representing Instantaneous Information During the Rerecording of Motion Pictures, Yu. N. Pushkarev, pp. 54–55.

A unit for representing instantaneous information during motion picture rerecording is described. A warning system and electronic digital counter that are included within the unit are discussed.

Some Problems of Professional Cinematography in France (Based on Information from CISCO '79), V. V. Egorov and V. I. Oushagina, pp. 58–62.

Based on discussions held at the International Biennial Fair CISCO '79 in Paris, information is presented on the state of motion picture theaters in France, on studies of motion pictures and spectators, and on the relationship between motion pictures, TV, and new audiovisual techniques.

Debrie Equipment for Printing and Processing Motion Picture Films, Ts. S. Arnol'd, pp. 62–64.

A brief description is given and the main technical features are presented for some printers and processors for 35-, 16-, and 8-mm motion picture films.

A System for Automated Evaluation of Modulation Transfer Functions of Photographic Materials, R. L. Lamberts and F. C. Eisen, *J. Applied Photographic Eng., 6:* 1–8, Feb. 1980.

High quality achromatic sinusoidal fringes can be produced over a very large depth of field by means of an optical system that uses a slit light source, gratings, and spatial filters. These optics have been used in an instrument that serves both as a camera and as a microdensitometer for MTF determination of photographic materials. In the microdensitometer mode, scanning is done with sinusoidal fringes over a large area so that effects of film granularity are essentially eliminated. A computer is used for sequencing the mechanical operations and for performing the necessary computations. The MTF data from the instrument agree well with those obtained by conventional techniques, but the measurements are much more rapid and reproducible.

Electronic Subtitling for Feature Films, W. R. Hawkins, W. Murray, and P. Tigwell, *BKSTS Journal, 61:* 34–40, Feb. 1979.

The authors indicate the difficulty of superimposing legible captions on a television picture and outline possible ways of generating and timing the separate captions. The selected method uses an electronic character generator supplied with stored titles and timed by reference to a frame counter. The system constraints determine the specification of the character generator and its font; they also lead to the choice of a floppy disk as a suitable storage medium. The preparation system to compile timings and text at leisure beforehand consists of a high quality printer linked to dual floppy disk drives controlled by a minicomputer. The reply system consists of a character generator, control panels, and a frame counter on each telecine machine all linked by a separate minicomputer with appropriate signal routers and stand-by systems.

New Photographic Materials: Light-Sensitive Semiconductor Metal Systems with a Barrier Layer (in Russian), M. T. Kostyshin, P. F. Romanenko, and N. G. Khotynenko, *Zh. Nauchn. i Prikl. Fotogr. i Kinematogr., 25:* 14–18, No. 1, 1980.

A description is given for a new class of photographic materials: semiconductor–metal systems with a barrier layer. By introducing between the layers of metal and semiconductor a thin barrier layer based on any chemically unstable light-sensitive semiconductor-metal system, we can create a system that is suitable for practical use. Using the example of As_2Se_3–Ag we show the effect of a barrier layer of As_2S_3 on the properties of the material. We consider the requirements imposed on the material of the barrier layer, its thickness, and other parameters. Photographs are shown of images reconstructed from holograms recorded on light-sensitive semiconductor–metal systems with a barrier layer.

Solution Management Systems for Ferricyanide Bleach and Fix, G. W. Stanwix, *BKSTS Journal, 61:* 42–46, Feb. 1979.

The author explains the method of control and replenishment of chemicals that the laboratory technologist has available to him for ferricyanide bleach and fixing solutions in film processing machines. He goes on to explain how the various methods relate to present day high speed processing operating for 24 hours per day six days a week. He describes the Rotex system which provides an effective means of minimizing pollution by greatly reducing the volume of chemical overflow and consumption and also continuously and automatically corrects the chemical balance of the solutions in the processing bath with a resultant saving in chemical costs.

A CCD Comb Filter for Color TV Receiver Picture Enhancement, D. H. Pritchard, *RCA Review, 41:* 3–28, Mar. 1980

The interlaced nature of the luminance and chrominance signal information contained within a common communications channel in the standard NTSC color television system allows the development of an innovative means for advantageously separating luminance and chrominance at the receiver by employing 1-H (one horizontal scan time) delay comb filter techniques. The objective of this approach is to provide subjective picture quality and sharpness enhancement by minimizing the conventional dot-crawl and cross-color beats, increasing the horizontal resolution to at least 330 equivalent TV lines and introducing the concept of vertical detail peaking at the receiver. The introduction of charge coupled device (CCD) technology has made possible the development of a 1-H delay device configured in a comb filter format and developed as a cost effective integrated circuit that is appropriately interfaced into the baseband signal processing function of a color television receiver.

Design and Performance of a CCD Comb Filter IC, D. J. Sauer, *RCA Review, 41:* 29–56, Mar. 1980.

This paper describes a low cost CCD comb filter IC for video signal processing in color television receivers. The chip combines a buried channel CCD 1-H (63.5 μs) analog delay line with all necessary linear and digital support circuitry using an advanced double polysilicon N-channel self-aligned gate technology. The design of new circuits is discussed including a linear variable gain BCCD input structure, automatic CCD input and output biasing, and 10.7-MHz on-chip clock drivers. Typical specifications and measured performance data for the CCD combfilter IC are also presented.