

tics of the chromatic-discrimination system show very much resemblance to its spatial qualities. Our experiments show that the threshold chromatic contrast is proportional to the square foot of the illumination. This fundamental relationship can easily be understood from the statistical properties of the photons, absorbed in the differential receptor systems.

Control of gamma in CRT displays using amplifiers with exponential negative feedback, S. L. Cachia, *Radio and Electronic Eng.*, 38: 281-291, Nov. 1969.

It is shown that networks can be produced to correct accurately the effects of the nonlinear transfer characteristics of a cathode-ray tube. The gamma correction required is related to the undesirable non-linearity in mathematical terms and the basic gamma equation evolved. A simple exponential equation can be converted into a gamma equation by the introduction of a linear function and the appropriate constants. A network with the required gamma characteristic is equivalent to an amplifying stage incorporating exponential negative feedback.

Circuits employing semiconductors are presented and discussed and the operational equations and performances are found to compare favourably with the theoretical gamma equation, and to support the theory. Networks employing negative feedback intended for operation at video frequencies call for special design to counteract the effects of gain and phase shift variation at those frequencies and a gamma stage suitable for television applications is presented. Stabilization of the operating point of the gamma stages with respect to temperature and power supply variations is described. Testing a gamma stage involves measurement of phase shift, frequency response and faithfulness of gamma as well as checks for the presence of waveform distortion.

Electronic video recording, F. McLean, *Brit. Kinemat. Sound and TV*, 51: 328-332, Sept. 1969.

Television signals can be recorded with good quality on either film or magnetic tape. The choice is dependent upon many factors, such as the speed with which copies are required, the number of copies, the cost of copies and the degree of complexity permissible in the playback mechanism. Where speed of playback with only a small number of copies is required, video tape has advantages which are very difficult to match with film. Where, however, speed is not so important, the number of copies large and a simple playback equipment is required, film has many advantages. The EVR system has been developed to meet these requirements. The basic ideas originated with Dr. Peter C. Goldmark and his team at the Columbia Broadcasting System Laboratories in the United States. The development of the special films required took place in collaboration with Ilford who also developed the special equipment used in the film printing and processing.

Film recording from the television screen, P. Hansell and R. Morton, *Brit. Jour. Phot.*, 116: 895-897, Sept. 1969.

Equipment and methods for the economical recording of television pictures for educational purposes are described. Methods of synchronization are discussed with particular reference to recording signals derived from helical-scan videotape machines.

Tone reproduction from color telecine systems, S. B. Novick, *Brit. Kinemat. Sound and TV*, 51: 342-347, Oct. 1969.

The factors affecting optimum gamma in color television displays derived from film were investigated.

It was found that the optimum perceived gamma ranged from 1.5, when the picture was displayed with a dark surround, to 1.0 when displayed with a light surround, with intermediate values for dim surrounds. The additional flare-light produced on the face of the display by the ambient lighting, which was used to provide the dim and dark surrounds, provided automatic adjustments of perceived gamma in the right direction but to an insufficient degree.

It is concluded that, since changes of gamma are required when the lightness of the picture surround is changed, it is necessary to standardize the viewing conditions before an optimum system gamma can be set. When an optimum system gamma has been set, for any given telecine and receiver gammas, an optimum film gamma can be evaluated.

Television Comes to Israel, Herbert I. Schiller, *Ed. Broadcasting Rev.*, 3: 45-52, Aug. 1969.

Until recently Israel only had instructional television. The Six-Day War of 1967 demonstrated to Israel's government that a general communications system was needed. Thus in May, 1968 general television was added to the existing instructional television channel. This article contains a description of this new service and its problems.

A new color film television recording process - some aspects of videoprinting, R. J. Venis, *Brit. Kinemat. Sound and TV*, 51: 379-383, Nov. 1969.

Most television pictures seen by the home viewer have been previously recorded. Several recording methods exist, each characterized by its own advantages and disadvantages. Film recording is one method and its main advantages stem from the fact that it is visual images that are stored, rather than electrical signals. Hence, replay is simple and the recording is completely independent of television line, field and color systems. Convenience and easy duplication are other features.

The vidronics film recording system, J. Mulliner, *Brit. Kinemat. Sound and TV*, 51: 393, Nov. 1969.

Over 50 years ago Technicolor brought to the cinema screens in the world color cinematography pictures. Now with the advent of color television broadcasts in various parts of the world Technicolor has perfected a system of transferring the color signal information on video tape to color film.

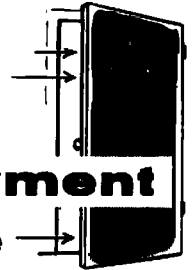
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