TRINITY COLLEGE FOR WOMEN
NAMAKKAL

DEPARTMENT OF COSTUME DESIGN & FASHION

COMPUTERS IN GARMENT INDUSTRY

ODD SEMESTER

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COMPUTERIZED COLOUR MATCHING SYSTEM

INTRODUCTION

•Computers have influenced every sphere of our life in one way or other.

• Computers are making human life easier and comfortable.

•Computers are helping to design, analyse and manufacture the product with short span of time in engineering applications.

•A computer is a fast and accurate data manipulating system that is designed to automatically accept and store input data.

• Process them and produce output results under the directions of a stored program. Computer is a tool to increase productivity in many aspects of our life.

CCM

CCM, or Computer Color Matching, is a system that measures the reflectivity of a target color with a spectrocolorimeter and calculates the blending ratio of color materials (primary color) which are registered in a computer in advance to reproduce the color.

FUNCTIONS OF CCM

Computerized color matching system performs two functions.

- The first one is selection. It means determinations of one or more practical combinations of compatible dyestuffs which are expected to match with the given shade satisfactorily at reasonable cost.
- The second thing is that the colour formulations are determined as to how much amount of each colourant should be used to produce a satisfactory match. It means that there are usually more than the combination of dyes which will match the required shade. The computer tries to match the standard with the all possible combinations of dyes and lists the resulting formulas in best match and cost consideration. The colourist can then choose a matching formula from the list considering the closeness of the match, cost and other relevant factors.

Functions of Computer Colour Matching System:

The following works can be done by using CCMS –

- Colour match prediction.
- Colour difference calculation.
- Determine metamerism.
- Pass/Fail option.
- **Colour fastness rating**
- Cost Comparison.
- Strength evaluation of dyes.
- Whiteness indices.
- Reflectance curve and K/S curve.
- Production of Shade library.
- Colour strength

WORKING OF CCM

CCM system consists of a light source, a spectrophotometer, and software that can interpret the data generated by the spectrophotometer.

Light source: The light source is one if the major components of the CCM system. It must be able to produce a light that is similar to the light that illuminates the object being measured. The light source provides a consistent and reliable light that is directed towards the object being measured.

Spectrophotometer: The spectrophotometer measures the color of the object by analyzing the light reflected from it. The spectrophotometer recognizes the amount of light absorbed and reflected. The spectrophotometer can identify various attributes of color, such as hue, saturation, and brightness. These attributes are used to create a digital color code that can be used to reproduce the color accurately.

Application of Computer Color Matching System in Textile:

- The computer color matching system is used in various industries to ensure that the color is accurately reproduced across all media types.
- For instance, in the fashion industry, color accuracy is essential in fabric production.
- The color of the fabric must be consistent across all batches to ensure that the final product is uniform.
- The computer color matching system is used to create a color formula that can be used to dye the fabric to the desired color accurately.

STORED PROGRAM OF CCM:

- Input/output.
- Command recogniser.
- Data acquisition and storage.
- Computations display.
- Self diagnosis and calibration.

The basic three things are important in CCMS:

- **Colour measurement** Instrument (Spectrophotometers).
- Reflectance (R%) from a mixture of Dyes or Pigments applied in a specific way.
- Optical model of colour vision to closeness of the colour matching (CIE L*A*B).

THANK YOU

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