

# STUDY OF CHINESE TRADITIONAL COLOR NAMES

Ma Yu<sup>1\*</sup> and Sun ruoduan<sup>1</sup>

*(National Institute of Metrology, No.18, Bei San Huan Dong Lu, Chaoyang Dist, Beijing, P.R. China)*

<sup>1</sup> *Division of Optics, National Institute of Metrology, P.R. China.*

\* Ma Yu, 8610-64524814, mayu@nim.ac.cn

## Abstract

During thousand years in Chinese history, lots of colors were named and used in people's life. And now, some traditional color names are still alive in the modern language, and the others are not used at all. For collecting and saving the name, cultural content and connotation of Chinese traditional colors, questionnaire with 386 colors were made for investigation among 1824 individuals of different ages and education backgrounds in China. 166 color names commonly used are chosen to representative of traditional Chinese color names, and the appearance information of the colors is collected, which include: traditional color names, habitual color names, colorimetric values and grades in Chinese color system.

**Keywords:** Chinese traditional color, color name, Chinese color system

## 1. Introduction

During thousands of years, Chinese ancient literatures showed the variety of quantities, meanings and applications of color names, from the Pre-Qin period (BC1100) to Qing dynasty (AD1900), and some of them were reserved till today and still commonly used in the modern language, are called traditional color names.

Traditional color names of China are closely related to Chinese culture and people' life, and in some degree, are the symbol of one time. To identify the relation of appearances and names of Chinese traditional colors will supply some useful information in traditional culture study and modern industry design and so on. For this purpose, the project of recording and naming traditional colors in China is executed from 2011 to 2013.

## 2. Procedure and methods

The researching procedure of naming traditional colors is shown in figure 1:

- 1) 1600 traditional color names are collected referring to ancient literatures and literature reviews<sup>[1-76]</sup>.
- 2) Compare with existed research results and publications<sup>[77-81]</sup>, and measure representative samples, such as cloisonne, Nanjing brocade, almost 500 color samples and color values are collected.
- 3) 700 traditional color names are left in the first trial after classifying, combining and deleting, and 386 color values are chose for making color cards (some color names have same color values).
- 4) A large-scale questionnaire survey has been conducted with the color cards (386 color in one set) and, habitual color names are collected, more information of the questionnaire survey is shown in table 1.
- 5) Traditional color names, habitual color names, colorimetric values and grades in Chinese color system is specified basing on the data of the questionnaire survey.
- 6) 166 traditional color names are selected, and then standard color cards are made.

Table 1 Information of the questionnaire survey

Quantity of questionnaires		Gender of participants		Scope of survey			
total	valid	Male	Female	Provinces	municipalities	Citys /counties	ethnic groups
2200	1824	850	974	27	4	185	34
Education level				Ages			

Primary school	Junior school	High school	College school	Under 18	18~35	36~60	Above 60
49	258	713	804	6	756	1032	30

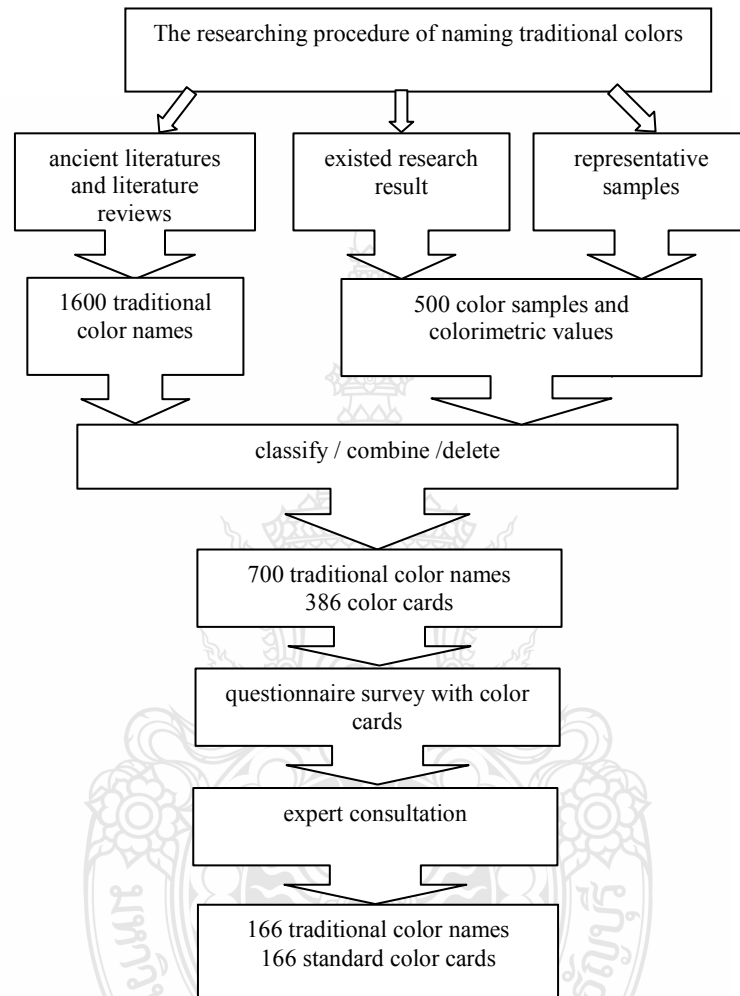


Figure 1. The researching procedure of naming traditional colors

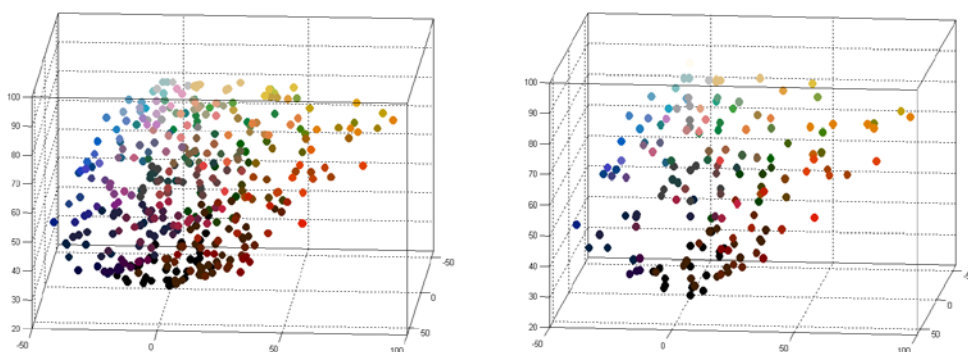


Figure 2. The values of 386 color cards (left) and 166 traditional colors (right) in L\*a\*b\*

### 3. Results

Base on the ancient literature query and the questionnaire survey results, 166 color names with their appearances are identified, including 155 chromatic samples and 11 achromatic samples. The appearance information include: traditional color names, habitual color names, colorimetric values and grades in Chinese color system. These colors are classified into 8 color groups, which named brown, red, orange, yellow, green, blue, cyan and purple. Each color is given by two names, one is traditional color name, and the other is habitual color name, the former comes from ancient literature, and the latter comes from the questionnaire statistics, and in some occasions, the latter is just same as the former, and sometimes one color corresponds to two habitual color names.

Besides names, each color is specified by their CIE colorimetric values ( $Y_{10}, x_{10}, y_{10}$ ) and the corresponding grade ( $H, V, C$ ) in the Chinese Color System. For Example, the traditional name of No.7 color is “鹰背褐” (means “the eagle back brown”), its habitual color name is “黄褐”(yellow-brown) or “深棕” (deep brown), and the colorimetric value of it expressed by  $Y=8.0, x=0.681, y=0.369$ , (CIE standard illuminant D 65, CIE1931 standard colorimetric observer) and in Chinese Color System, its grade is expressed by  $H=1.7, V=3.4, C=2.1$ .

Standard color cards of traditional color names in China will be published in the next year, and the tolerance for the chromatic and achromatic cards are  $\Delta E_{ab}^* \leq 2.0$  and  $\Delta E_{ab}^* \leq 1.0$  respectively.

### 4. Conclusions

166 colors with traditional and habitual names are identified base on the combination of ancient literature query and the questionnaire survey results, and their CIE colorimetric values and corresponding grade in the Chinese Color System is specified.

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