

## عنوان مقاله:

Application of Response Surface Methodology for Modeling the Color Strength of Natural Hair Colorant

## محل انتشار:

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## خلاصه مقاله:

Conventional methods of hair dyeing involve the use of chemical materials that result in unpleasant side effects, such as breakage of hair and cancer. A need was felt to formulate a dye containing plant products which is safe for use and does not have the problems of hypersensitive reactions. In this study, formulations containing natural hair colorants with madder dye and additives like herbal oils (almond, olive and coconut), ammonia and lemon juice were prepared. Response surface method was used to analyze color strength of hair colorant as dependent variable. Dye concentration, bath temperature and additives have been selected as independent variables. Color strength predictive model of natural hair colorants with madder dye is provided and this model has a high coefficient of determination. Also, it was indicated that, bath temperature has a great effect on enhancing the color strength of natural hair colorant. The optimization conditions of dyeing process parameters for polyhedral hair colorant production using response surface methodology were identified.

## کلمات کلیدی:

Response Surface Methodology, Natural colorant, Madder, color strength, Modeling

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1900970>

