

Study on the Preparation and Application of the Acrylic Resin Coating Agent Modified by Carbon Nano-materials

Jianzhong Ma¹, Yauchang Sun^{1,*}, Yongsheng Shi²

¹Collage of Resource & Environment, Shannxi University of Science and Technology, Xi'an 710021, shannxi, P.R.China

²Collage of Electrical & Information Engineering, Shannxi University of Science and Technology, Xi'an 710021, shannxi, P.R.China

*Corresponding author, Phone: +86-(0) 15829778677, E-mail: sunyouchang6522@163.com

Abstract: Base on the characteristics of carbon nano-materials, acrylic resin coating agent modified by carbon nano-materials was prepared by compounding nano-carbon and acrylic resin. The differences of physical mechanical and health properties of acrylic resin film before and after modification were studied and compared by the multi-media microscope, DSC and other means of analysis and measurement. For optimizing the modification conditions, the influence of contrasted ratio, reaction conditions, additives on the performance of composite acrylic coating agent modified by carbon nano materials were studied. The results showed that carbon nano-particles were well-distributed in the emulsion of acrylic resin, and can significantly increase the rub fastness of acrylic resin, heat and cold resistance, folding performance and a certain degree of radiation resistance.

Key words: nano materials; coating agent; leather; acrylic resin