

INDOOR FORMALDEHYDE POLLUTION AND TREATMENT TECHNOLOGY

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Abstract

Through understanding indoor air quality evaluation and indoor formaldehyde pollution control standards, this paper analyzes the source, harm and detection methods of formaldehyde, summarizes indoor formaldehyde pollution control technologies, and explores the direction of efficient treatment of formaldehyde.

Keywords: environment, pollution, formaldehyde, contaminant, treatment.

Introduction

With the improvement of living standards and the change of life style, modern people have more than 80% of the time a day in indoor activities, indoor air capacity is small, circulation conditions are not as good as outdoor, especially the indoor pollution components are more complex, more serious harm. Therefore, the quality of indoor air quality directly affects people's work and life, indoor air quality is more closely related to human health is more important. With the wide application of building decoration materials, the continuous improvement of building airtightness, indoor air pollution is increasingly serious, the number of people suffering from "sick building syndrome" is increasing, indoor air quality problems have aroused public attention, indoor air quality evaluation has become a hot topic of research. At present, the indoor air pollution problem has been paid more and more attention. Many researchers [1] have listed the indoor air pollution problem as the third generation of air pollution marked by "indoor air pollution" after the coal smoke pollution and photochemical smog pollution brought by the industrial revolution. Formaldehyde, nitrogen oxide and other toxic substances contained in building materials pollute indoor air for a long time and cause a great threat to indoor health. At the same time, with the progress of society and economic development, people's living standards continue to improve, people's living environment requirements are increasingly high, so the indoor environment quality also put forward higher requirements. Therefore, the study of indoor environmental safety not only has great theoretical significance, but also has far-reaching practical significance and application prospect.

Results

With the improvement of people's living standards and the environmental protection requirements for the living environment, the control of indoor pollutants, including formaldehyde, has become increasingly urgent, and the relevant standards of various countries are constantly improving. Indoor environmental pollution has become the focus of attention in many countries. Formaldehyde release is a long process of decoration with some pollution-free materials: before the house is moved in to maintain good ventilation at the same time put some plants or put some activated carbon or formaldehyde scavengers so as to stay away from the harm of formaldehyde to the human body, indoor formaldehyde treatment technology and related industry prospects are very broad, but at the same time we also want to see the shortcomings of the current situation, cause enough attention.

With the increasing strictness of environmental laws and regulations and the popularity of environmental awareness, more and more attention has been paid to the control and treatment of indoor formaldehyde pollution. Air purification technology of formaldehyde pollution has been more used in practice, at the same time, a variety of new methods and new technologies are constantly being studied, among which nano photocatalytic technology makes the development trend of air purification technology research. Because each method has its own advantages and disadvantages, appropriate technology is selected for the actual situation, In particular, the combination of various technologies can effectively control and treat formaldehyde pollution in the laboratory.

The most effective way to solve the problem of indoor formaldehyde pollution is to control the source. Surveys [2] show that more than 80% of indoor formaldehyde pollution is mainly caused by the use of

excessive formaldehyde content in the decoration of building materials and furniture floors. Therefore, in order to quickly solve the problem of indoor formaldehyde pollution, we should increase the research and development of indoor formaldehyde pollution control technology and green decoration building materials.

In order to create a healthy, comfortable and green indoor air environment, not only effective formaldehyde detection methods, targeted prevention and control measures are needed. Also, one needs to nip in the bud, understand the possible sources of formaldehyde pollution, use green decoration materials and clothing, reduce the content of formaldehyde in indoor air.

Formaldehyde removal methods include physical, chemical and biological methods, etc [3]. Physical adsorption and photocatalysis are the main methods used in air purifiers. In addition to a single removal way, more is the combination of the above removal methods, that the reasonable use of the advantages of various methods, effective combination, comprehensive treatment, is the direction of formaldehyde treatment.

According to the comprehensive analysis and research of formaldehyde pollution indoor environment, layer by layer in-depth, from the practical point of view, in-depth analysis of formaldehyde harm to the human body, as a starting point, for the indoor environment in the comprehensive treatment of formaldehyde pollution technology, indoor ventilation, plant purification, air purification technology, are comprehensively discussed. Carry out in-depth analysis, and strive to make more progress for the related work, make a positive contribution, and to reduce the indoor environment for the harm to the human body, reduce the content of formaldehyde, indoor purification effect, laid a solid theoretical foundation [4].

Conclusion

In this paper, the latest progress of indoor formaldehyde removal was summarized from the harm of formaldehyde, the principle of formaldehyde removal, the detection of formaldehyde, and the way of formaldehyde removal. In formaldehyde detection, portable formaldehyde detector is fast and efficient when measuring indoor formaldehyde, which is suitable for ordinary people, but not suitable for accurate detection of formaldehyde concentration in indoor environment.

For efficient indoor formaldehyde removal technology, one needs to find the best raw materials, explore the optimal synthesis method, while reducing the cost of adsorbent, improve the adsorption and degradation of formaldehyde. Currently, researchers are focused on exploring the material design problems that formaldehyde adsorbent is easy to fill and pores are easy to plug. Through the combination of biological and other methods, indoor air formaldehyde removal system, such as plant-microbial formaldehyde removal system, air conditioning system connected with biological filter, etc. may be designed. Photocatalytic materials can efficiently remove formaldehyde and are environmentally friendly. Future air purifiers can be improved in terms of material composition and structure optimization to achieve safe, pollution-free, long-term and efficient removal of indoor formaldehyde.

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