Campaign Air Pollution with the Help of Nanotechnology

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The issue of environmental pollution has become a hot issue in today's world. Nanotechnology offers advantages to improve existing environmental technologies, has three main capabilities that can be applied in the fields of environment, including the cleaning and purification, the detection of contaminants (sensing and detection), and the pollution prevention. So, nanotechnology offers a wide range of capabilities and technologies to improve the quality of existing environment. Our ecosystem demands CO2 in order to maintain ecological balance. However, the increasing concentration of carbon dioxide gas in the atmosphere provided a serious greenhouse effect, global warming and glacier melting. Nanocrystalline a-Fe2O3 films were found to have some qualities of absorbing gases, such as C02. Our method shows two strategies: the method for deposition of nanocrystalline a-Fe203 films on microscopic glass substrates which can be realized in home conditions and second strategy is to include nanocrystalline a-Fe203 films as carbon dioxide gas absorbents in an air cleansing filter. Except thin films, our filter is also composed of activated carbon (which also absorb carbon dioxide, smoke, dust ,etc.) and silica gel (that absorbs the humidity of the air) With our method , nanocrystalline a-Fe203 deposition was found and proved approximately 60% reducing of C02 by the nanocrystalline films. So we built an air cleansing filter. Beside the nanocrystalline a-Fe203 thin films, it contains activated carbon and silica gel. In summary we can say that we constructed a nanofilter with approximately 95% efficiency.

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