1. Introduction

Nanotechnology, as one of the high-tech, has high value-added in the process of its development and application. It can not only bring great economic benefits, but also improve labor productivity and achieve better social effects. Science and technology is a double-edged sword. Nanotechnology brings great benefits and also has high risk characteristics. Nanotechnology is in the forefront of science and technology, and it is a new and high-level technology, with obvious characteristics of advanced research and many unpredictable factors. Therefore, to avoid harm and benefit, to reduce the negative effects of nanotechnology, we need the high guidance of philosophy. Among them, photothermal nanomaterials can convert the absorbed light energy into heat to increase the temperature of the surrounding environment, and have shown great application potential in tumor multi-mode imaging and optical therapy [1].

The development of financial technology will improve the efficiency of financial operations and bring a new environment for private enterprise financing and financial risk prevention, but it also brings new challenges to financial supervision [2]. According to the recent intensive signals released by the regulatory authorities, fintech will receive greater policy support, and fintech supervision will also be tightened simultaneously.

The application of nanomaterials is innovative for the development of financial industry. Song X uses fractal theory and thermal conduction theory to analyze the sensitivity of energetic materials, the correlation between thermal conduction and fractal dimension, and at the same time, he established a fractal heat conduction model for micron and nanometer energetic materials to verify the correctness of the model, Calculated the fractal dimension and surface fractal dimension of two nitramine explosives with different particle sizes. Although his research method is more detailed, but the consideration is not precise enough [3].
In this paper, nanomaterials are used as adsorbents to degrade organic matter in water, thereby greatly improving its photocatalytic efficiency. The adsorption efficiency of nano-adsorbents for heavy metal ions in water is better than other current adsorbents, and can be regenerated and reused. In the research of nanotechnology industrialization operation mechanism, transformation mechanism plays a connecting role. Universities and enterprises play an important role in the process of transformation. The State formulates relevant policies to encourage the transformation of nanotechnology achievements in universities and actively transform traditional industries. Health financial plays a role as a lubricant in the system of coordinated development of man and land, and the implementation of health financial plays an extremely important role in promoting the sustainable development of tourism [4, 5].

2. Financial Market and Nanomaterials

2.1. Financial Industry. Health financial industry should be based on people’s needs for physical and mental health, with health as the goal, health therapy as the means, and recreation as the process to provide financial related services around the theme of health. The products provided by the health financial industry are the same as the general financial products, which are the specific products in the non physical form, but the production and operation modes are different. There are many production and service fields involved, and the industry boundary is fuzzy, so it has the characteristics of multi management; the differences of people’s health and financial demand create the diversity of health financial products; only by optimizing the industrial structure, integrating management, management, technology and other means, and better coordinating the government and social resource elements, can we promote the scientific and healthy development of health financial industry [6, 7].

The most important thing of sustainable financial is to pay attention to the protection of ecological environment in the process of financial development, so as to avoid irreversible damage of financial resources in the process of development due to excessive development of natural resources and ecological environment damage [8]. Specifically speaking, sustainable financial means that in the process of developing tourism, we should also pay attention to the sustainability of development, and emphasize that the development of financial should be harmonious with local economy, society, culture and ecological environment. On the one hand, it means that the development of financial industry can not break through the local environmental carrying capacity; on the other hand, it means that the development of financial industry also needs to constantly innovate financial products and services according to the changes of economic and social forms, so as to continuously meet the market demand under different economic and social backgrounds [9, 10].

2.2. Nanomaterials Technology Industrialization Model. The dependence of nanotechnology industry on the development of nanomaterials technology can also be seen from the dynamic development of high-tech industry. Without quantum theory, there will be no development of integrated circuits and computers; without the discovery of relativity and nuclear fission theory, there will be no widely used nuclear technology. Without the new achievements of molecular biology and genetics, there would be no biotechnology industry benefiting human beings [11]. This is mainly because the development of biotechnology is inseparable from the emergence of new research results. In the process of exploring this field, the theories and concepts formed will be widely used in our production and life. Human beings will establish new ideas which are quite different from the material world that can be observed by our naked eyes. It will greatly enrich our cognitive world and bring conceptual changes to human society. From the perspective of human development, nanotechnology promotes the miniaturization, high performance and environment friendliness of products, which will greatly save resources and energy, reduce excessive dependence on it, and promote the improvement of ecological environment [12]. In the input continuous image sequence, the gray value change of each independent pixel is subject to a single Gaussian probability function, then the Gaussian model of the nanoparticle is:

$$\mu_0(x, y) = \frac{1}{T} \sum_{i=0}^{T-1} f_i(x, y)$$

$$\sigma_0^2(x, y) = \frac{1}{T} \sum_{i=0}^{T-1} [f_i(x, y) - \mu_0(x, y)]^2$$

In the formula, $f_i(x, y)$ represents the gray value of the $i$-th particle in the image.

As enterprises increase the demand for nanotechnology achievements, they are largely affected by the supply of nanotechnology achievements. Obviously, the more nanotechnology achievements enterprises have, the better position they can occupy in the competition. Different from traditional technological achievements, nanotechnology achievements are not completed by traditional experience or skills, but by the use of modern science and technology with high-tech content [13]. The research process is also a complex process, which requires a lot of human, material and financial resources. Therefore, there are two ways for enterprises to obtain nanotechnology achievements: one is to improve their independent research and development ability, improve their innovation ability, introduce talents to overcome difficulties, and obtain self-sufficiency of nanotechnology achievements. The second is to buy from scientific research institutes and universities for digestion and absorption. This scheme is more suitable for the development of enterprises, which not only saves the time of research and development, but also reduces the risk. At the same time, due to the competition of supply, the price drops, and reduces the purchase cost of enterprises [14, 15].

2.3. Industrial Economic Structure Adjustment. With the development of the economy and the improvement of production factors, industries are constantly growing and
changing, and adjustments and conversions between different industries often occur, thereby forming an industrial structure. Along with economic growth, the industrial structure is also undergoing transformation. Industrial structure adjustment refers to the mutual change and adjustment of production factors among various departments and regions. It includes two aspects: rationalization and advancedization of industrial institutions. The rationalization of industrial structure refers to the coordination of the quantity ratio of production factors between industries, the economic and technological linkage, in order to adapt to market demand and achieve the optimal industrial structure, the process of coordination and balance of all aspects of the industry and finally obtain the best benefits. The theory of sustainable development is closely related to the development of healthy tourism, and it is of great significance for the research and guidance of the development of healthy financial market [16, 17]. Only sustainable development can bring a healthy circular development result to finance.

Based on the perspective of spillover effects, the high-tech content of Internet products enables relevant practitioners to have higher quality and knowledge reserves. The flow of these high-quality employees promotes the overflow of manpower and can promote the improvement of the employment structure of the financial industry. It is of great significance for the financial industry that is positioned as a labor-intensive industry. On the other hand, Internet technology is applied to traditional industries to form a demonstration effect, through information sharing, knowledge and technology introduction, promote innovation, improve the production efficiency of financial industry and product added value, thereby improving the quality of financial industry development [18, 19]. Demonstration effect refers to the impact of changes in the consumption expenditure and income of some consumers or households on the consumption expenditure of other consumers and households, that is, consumers compare each other in space when they consume, and try to compare the consumption level. Above others or at least not below others of the same class. Therefore, consumers’ consumption expenditure is not only affected by their own income, but also by other people’s consumption expenditure and income.

3. Nanomaterials Adsorption Experiment on Scenic Wastewater

3.1. Experimental Equipment and Materials. The main instruments used in the experiment are as follows: high performance liquid chromatography, ordinary optical microscope, laser confocal microscope, flow cytometer, enzyme-linked immunosorbent assay, laser, CO2 constant temperature incubator, etc. [20].

The main reagents used in the experiment are as follows: potassium permanganate, oleic acid, absolute ethanol, adriamycin hydrochloride, 1R-780 iodide, sodium dihydrogen phosphate, disodium hydrogen phosphate, polyethylene glycol (PEG), dimethyl sulfoxide (DMSO), potassium bromide, MNP, etc. [21].

3.2. Preparation of TiO2-rGO. Firstly, 1.925 mg GO was dissolved in the mixed solution of 10 ml ethanol and 20 ml distilled water, and then 1.7 ml tetraethyyl titanate was slowly added into 10 ml ethanol to prepare mixed solution B. the mixed solution B was added dropwise into the high-speed stirring mixed solution A, and then transferred to a 50 ml reactor for 3 h and reacted at 200°C for 12 h. The product was centrifugally washed to neutral. The TiO2-rGO composite powder (rGO mass ratio of 0.5%) was obtained by washing once with alcohol and drying at 40°C for 24 h. Similarly, TiO2-rGO composite powders with 0-3% rGO mass ratio were obtained in a similar process [22, 23].

3.3. Synthesis of Manganese Dioxide Nanoparticles (HM NPs). First use an electronic analytical balance to weigh 0.1 g of KMnO4 in a 100 ml flask, and then add 50 ml of ultrapure water. Stir the above solution on a magnetic stirrer at room temperature for 30 minutes, and the magnetic stirring speed is 600 r/min. After potassium permanganate is completely dispersed in ultrapure water, use a 2 ml syringe to take 1 ml of oleic acid (OA) and add it dropwise to the potassium permanganate solution at a very slow rate, and continue the reaction for 24 hours at room temperature. After the reaction, the original solution changed from purple-red to dark brown turbid liquid state. The post-processing is centrifugal treatment, the centrifugal speed is 10000 r/min, the centrifugation is three times, the centrifugation time is 8 min once, and the washing liquid is ethanol [24, 25].

3.4. Characterization of TiO2-rGO. X-ray powder diffraction with cuka ray is used for the crystalline phase of the material. The scanning angle is 5° to 90° and the resolution is 0.02°. The specific surface area and pore volume were determined by N2 adsorption BET method. The infrared spectrum was obtained by NEXUS670 infrared spectrometer (MA) and KBr tablet pressing method [26]. The TGA (Q5000V3.15) was determined by heating the sample at 10°C to 900°C. In order to explore the surface composition and chemical element state of the material, X-ray photoelectron spectroscopy (XPS) was used with monochromatic Al Ka ray [27].

3.5. PTT Performance Evaluation. Firstly, 0.3 mg/ml PDA-CE6 solution was prepared, and the heating conditions of laser wavelength of 808 nm and different energy powers of 2.0, 2.5, 3.0 and 3.5 W/cm2 were investigated; then 0.1, 0.2, 0.4 and 0.5 mg/ml PDA-CE6 solutions were diluted, respectively, as the experimental group, deionized water was used as the blank control group, and the laser irradiation power was 3 W/cm2 at the same wavelength. The temperature curves of different concentrations of pda-ce6 nanoparticles with different illumination time were plotted to evaluate the photothermal conversion ability of PDA-CE6 [28].

3.6. Adsorption Experiment. Batch experiments were carried out in a 10 ml simulated wastewater system. In the experimental process, the concentration of adsorbent is controlled to 0.02 g/l, the pH of solution is adjusted by hydrochloric acid or sodium hydroxide, the ionic strength is mainly controlled by 1 mM sodium chloride, and the pH affects the adsorption effect of TCP. We mainly control the pH range.
from 3 to 10, and the kinetic experiment is carried out at the temperature of 30°C, and the concentration of TCP is 20 mg/L. In order to explore the thermodynamic characteristics of adsorption, the adsorption process was carried out in 10 ml of solution containing 0.5 ~ 20 mg/L TCP at various temperatures of 303 K, 313 K and 323 K. Three parallel experiments were conducted in all experiments, and the average value of the three groups of experiments was taken as the experimental results.


4.1. Nanoparticles on Water Sources in Scenic Spots. Although the ecological benefits of financial industry cannot be accounted and counted independently, its characteristics and scale have been formed. At this stage, the state attaches importance to the ecological development of tourist attractions and financial products, and guides the financial industry to take the ecological road in policy. With the implementation of sustainable development strategy, the concept of ecological oriented financial industry is gradually introduced into China. Both the government and tourists have a profound understanding of the environmental impact of financial industry. The understanding of eco-financial and green financial is more and more in-depth. The ecological oriented financial mode is also getting more and more support from all walks of life. At this stage, although the financial industry is still mainly economic oriented, ecological orientation has begun to penetrate into all aspects of the development of financial industry. The degradation effect of nanoparticles on wastewater is shown in Table 1 and Figure 1. It can be found from the figure that the degradation efficiency of metronidazole by iron doped titanium dioxide in the presence of visible light and hydrogen peroxide is the best, which can reach about 80% in 60 minutes. Accordingly, the manganese doped titanium dioxide with the smallest band gap has poor degradation activity for metronidazole solution. This is because the structure of metronidazole is relatively stable and difficult to decompose, and the redox ability of holes or electrons generated by photocatalysts with too small band gap is also relatively weak. These two reasons lead to the poor degradation activity of manganese doped titanium dioxide. Therefore, iron doped titanium dioxide catalyst is the most suitable.

4.2. Nanomaterials on Tourism. The financial industry has entered the national strategic level. As a comprehensive strategic pillar industry, the development concept of ecological civilization of respecting nature, conforming to nature and protecting nature has been established. The financial industry has entered a new era of multi-dimensional, multi-dimensional and multi-dimensional development of economy, ecology and society. Under the guidance of the development concept of “innovation, coordination, green, openness and sharing” and the basic national policy of saving resources and protecting the environment, the financial industry has changed its concept and pursued more and more green development to promote the unity of environment and economy. Mesoporous silica is a new material developed in recent years. It has large specific surface area, regular pore structure, good thermal and chemical stability, so it has a wide application prospect in adsorption and separation, macromolecular catalysis and other fields. Silica is non-toxic, easy to obtain, exists in the form of aggregates, has good catalytic adsorption performance, and can provide enough pores and three-dimensional space for magnetic nanoparticles to be evenly dispersed in the interior. It can be used as a carrier to slow down the agglomeration of iron nanoparticles, and can be used to immobilize nanoparticles. The adsorption efficiency of silica for water sources of tourist attractions is shown in Table 2 and Figure 2. It can be seen from the figure that with the continuous reaction, the concentration of nitrate nitrogen continues to decrease. The removal rate reaches 98.3% in 30 min and almost 100% in 120 min. During the reaction process, 15.2% of nitrate nitrogen was reduced to nitrite nitrogen and remained in the solution in the form of intermediate by-products. With the reaction going on, it could be further converted into ammonia nitrogen, and 4.3% nitrite nitrogen remained in the final solution. The concentration of ammonia nitrogen has been increasing, and 79.4% of the final product is ammonia nitrogen. The total nitrogen decreased at first and then increased. Finally, the total nitrogen decreased by 15.5%.

Nanomaterials enterprises must rely on their own feasible business plans, excellent product functions and market prospects to attract venture capital, and obtain much-needed financial support and guidance in operation and management. This stage is also the key period for venture capital to consider entering and obtain certain equity, so as to lay the foundation for high return on investment in the future. In order to become a strategic partner or strategic shareholder of the enterprise. After the intervention of venture capital, due to the enhancement of financial strength and risk-taking ability of enterprises, some commercial banks familiar with the operation of two nano materials enterprises will moderately intervene and provide a certain degree of loan support. In addition, the entrepreneurial fund set up by the government to support high-tech enterprises also has a significant role in supporting enterprises at this stage. The main reason is that many companies today are the product of self-employment, and capital has become the most critical factor for these companies.

In the case of nano material adsorbent, the change of the number of tourists in recent five years is shown in Figure 3. As can be seen from the figure, the application of nano materials has greatly improved the health of tourist attractions. Especially in 2016, the number of tourists reached the peak in nearly five years, with 7.01 million. The change of the flow of people naturally affects the whole financial industry. Financial industry is a comprehensive industry, which is determined by the consumption characteristics of tourists. On the one hand, the consumption process of financial almost includes all the contents of life, that is, the multiple needs of food, housing, tourism, transportation, shopping, entertainment and so on during the period from leaving home to returning to the settlement. In order to meet the multiple needs of tourists, there must be a variety of different types of enterprises to provide tourists with goods and
services. On the other hand, financial consumption is diversified and tends to be personalized. Therefore, meeting the needs of financial consumers is not only reflected in the material aspects of tourist attractions, hotel facilities, transportation tools, but also in the cultural and spiritual aspects. This requires a higher level of cultural content and the quality of service personnel in tourist destinations. Therefore, as far as enterprises in different industries are concerned, the link of meeting the needs of consumers connects them together and makes them become a collection. The complexity and diversity of financial business constitute the comprehensive characteristics of tourism.

4.3. Changes in the Economic Structure of the Financial Market. To perfect the policy and regulation system of financial and cultural industry, we need to start from many aspects. First, break the status quo of coexistence of segmentation and industry barriers. Break through one of the management systems among industries such as the development and operation of financial and cultural attractions, financial accommodation and catering, financial and transportation, financial and entertainment, financial and commerce, and festivals and exhibitions, and establish and encourage various industries to compete with each other. A long-term policy and regulation system with multi-regulation and integration of cooperation and mutual promotion. Secondly, a sound and feasible safety policy and regulation system should be improved. Formulate strict tourist attractions development and operation safety regulations, financial accommodation and catering safety standards, financial traffic safety laws and regulations, financial and entertainment business service quality standards, festivals and exhibitions safety guarantees and emergency response measures, and other financial and cultural industry guarantee policies and regulations system. Finally, improve the internal rules and regulations of various industries. Standardize the market order of various industries in the financial and cultural industry, and protect the rights and interests between the operators and consumers of the financial and cultural industry.

In the past, the environmental governance of financial industry is to control the end environmental pollution without changing the development mode, rather than the control of material flow and energy flow based on the source and the whole production cycle. In the past, the environmental governance was limited to the departments of resource management and environmental protection, rather than the cooperation of multiple departments and the joint governance of the whole society. In particular, with the implementation of the green awareness of financial industry by financial enterprises, the competition mode of financial enterprises has changed from the market competition mode to the dual competition mode of market competition and ecological competition. More and more financial enterprises adhere to the guidance of tourist satisfaction and gradually

### Table 1: Degradation effect.

<table>
<thead>
<tr>
<th></th>
<th>TiO2</th>
<th>Fe-TiO2</th>
<th>Mn-TiO2</th>
</tr>
</thead>
</table>

### Figure 1: Degradation effect.

### Table 2: The adsorption efficiency of silica for tourist attractions.

<table>
<thead>
<tr>
<th>Concentration</th>
<th>40 mg/L</th>
<th>100 mg/L</th>
<th>150 mg/L</th>
<th>210 mg/L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficiency</td>
<td>0.43</td>
<td>0.57</td>
<td>0.59</td>
<td>0.37</td>
</tr>
<tr>
<td></td>
<td>0.36</td>
<td>0.49</td>
<td>0.38</td>
<td>0.58</td>
</tr>
<tr>
<td></td>
<td>0.32</td>
<td>0.46</td>
<td>0.41</td>
<td>0.82</td>
</tr>
<tr>
<td></td>
<td>0.52</td>
<td>0.63</td>
<td>0.35</td>
<td>0.93</td>
</tr>
<tr>
<td></td>
<td>0.52</td>
<td>0.70</td>
<td>0.39</td>
<td>0.68</td>
</tr>
</tbody>
</table>
Figure 2: The adsorption efficiency of silica for water sources in tourist attractions.

Figure 3: Changes in the number of tourists.

Figure 4: The proportion of China’s financial industry’s overall contribution to GDP.
improve the competitiveness of financial enterprises by providing more and more high-quality financial products and green financial products. And further strengthen the confidence of green development of financial enterprises. At the same time, with the improvement of tourists’ education level and income level, the awareness of environmental protection and sustainable development of tourists is becoming stronger and stronger. The non-environmental protection behaviors in financial cause less and less damage to the ecological environment of scenic spots, and the concept of green consumption is becoming more and more popular. The proportion of China’s financial industry’s comprehensive contribution to GDP is shown in Figure 4. In terms of economic benefits, the three major markets of domestic tourism, inbound financial and outbound financial in China’s financial industry are booming in an all-round way. China has become the world’s largest domestic financial market, the world’s first largest international financial consumer, and the world’s fourth largest financial destination country. China’s financial industry has made more outstanding contributions to China’s and the world’s economic and social development, and has become an important member of the world’s financial industry. Financial industry has become a new driving force to promote China’s economic development. From the proportion index of financial industry’s comprehensive contribution to GDP, we can see that the proportion of financial industry’s comprehensive contribution to GDP showed an overall upward trend from 2009 to 2017. By 2017, the comprehensive contribution value of financial industry in China’s GDP was as high as 913 billion yuan, accounting for 11.04% of the total, becoming an important industry in the tertiary industry.

5. Conclusions

At present, nanotechnology research in China has made some achievements, but the application of nanotechnology achievements is still in the primary stage, and the industrialization effect is not very ideal. Although nanotechnology has unique functions, it is not extravagant and needs practical implementation. Nanotechnology as the mainstream of high-tech industrialization, its progress is inseparable from the common development of computer technology, information technology and other fields. Only products and technologies recognized by the public can have a good market prospect. Nanotechnology, as a new technology, has a general cognition among researchers, but the general public’s cognitive knowledge of nanotechnology remains on the surface, and some people are even misled by the words of some scheming people. They only see the negative side of nanotechnology and refuse or even reject nanotechnology and nanotechnology products. To a certain extent, it hinders the development of technology and social progress.

This paper defines the concepts related to the structure of financial culture industry, uses the Marxist theoretical basis related to the industrial structure of financial culture, and studies the innovation and development of the industrial structure of financial culture by using the methods of theoretical analysis, case comparison, literature research and interdisciplinary research. The development of financial industry has been integrated into the global value chain and the world financial map; driven by innovation, China’s financial industry has achieved remarkable improvement in quality and efficiency; the green development of financial industry has made considerable progress; the benign development of financial enterprises has become a strong support for the sustainable development of the industry. Of course, from these typical characteristics, we can find the problems of China’s financial industry at present: the imbalance of supply and demand of financial industry, the difficulty of green transformation and upgrading; the lack of leading enterprises in the global value chain of financial enterprises, and the low competitiveness; the low value-added financial products have reduced the support for the sustainable growth of China’s financial economy. The restriction of ecological environment on China’s financial industry is increasingly apparent.

In this paper, a new type of photocatalyst TiO2-rGO was synthesized by the simultaneous high-temperature reduction of GO and high-temperature hydrolysis of titanium ester, which showed excellent photocatalytic activity under visible light. In this paper, the catalyst was characterized by XRD, DRS, TEM and other means, and its catalytic ability was tested by catalytic degradation of rhodamine B. The degradation results showed that TiO2-rGO under visible light showed excellent catalytic activity that TiO2 did not have in the past. In addition, through repeated degradation of Rhodamine B, TiO2-rGO showed excellent stability and reproducibility. Utilizing the advantages of nanomaterials can greatly reduce the degree of pollution of water bodies, ensure the cleanliness of water sources in scenic spots, and promote the economic development of tourism. The research is only for the financial industry, and the next research direction can be developed in other industries.

Data Availability

No data were used to support this study.

Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of this article.

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References


