



2021 年度钨行业大事记

EVENTS OF TUNGSTEN INDUSTRY

IN 2021

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BRIEF INTRODUCTION TO THE AUTHOR

As the 1st E-commerce company of Tungsten (W), Molybdenum (Mo), Rare Earth (RE) in China, China Tungsten Online Manu. & Sales (CTOMS) was founded in 1997 based on China's the 1st and top tungsten website www.chinatungsten.com. As its specialized design, professional manufacturing, excellent service and powerful information database, CTOMS is not only the most authoritative information source of Chinese and English information of W Mo and RE products globally, but also the best comprehensive application solution provider of W, Mo and RE, both chemical materials and machined products, such as tungsten oxide, metal, cemented carbide and heavy alloys.

CTOMS has been created more than 1 million web pages and WeChat information message of W, Mo and RE news, price and market research, analysis. The web news.chinatungsten.com, www.ctia.com.cn are the world's top index websites of tungsten which have received 1 billion visits from 1997.

The major business of CTOMS is to complete product design, R & D with customers and provide customers with processing and integration services. In the past 2 decades, it has provided more than 100,000 different types of W, Mo & RE products to more than 10,000 customers all over the world. Years experience and technology accumulation have laid a foundation for promoting the flexible and intelligent manufacturing of customized products.

Dr. Hanns, the founder of CTOMS and chief editor of CTIA who is the expert of tungsten processing technology, research and markets analysis with 30 years of tungsten carbide and alloys manufacturing and int'l biz from 1990's.

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2021 年度钨行业大事记

EVENTS OF TUNGSTEN INDUSTRY IN 2021

2021 is a year of great significance in China's development history and the beginning of the 14th-five-year-plan, also it is the 100th anniversary of the founding of the Communist Party of China. In the face of the complex environment of century changes and century epidemic, China's cadres and workers in the tungsten industry stick to their original intention, forge ahead, always adhere to, continue to consolidate the stable and good development trend, and firmly continue the good trend of steady growth, Firmly grasp the established direction of high-quality development, restore the growth of product output, operating income and profit and tax profits, orderly promote key projects, continuously optimize the industrial structure, make new achievements in scientific and technological innovation, make remarkable achievements in brand construction, and make new progress in greening and intellectualization.

Looking back on the past and looking forward to the future, China Tungsten Industry Association (CTIA) is full of confidence in the development of property in China. On the occasion of Chinese Traditional Spring Festival, we analyzed, sorted and listed the major events of tungsten industry in 2021 under the thinking framework of national development, industry progress, science and technology priority, and released them on the basis of widely soliciting the opinions of the experts of tungsten industry.

1. Operating of Tungsten Industry Improved Significantly and Industrial Structure Optimized Continuously

In 2021, in the face of multiple tests such as the complex and severe international environment and the spread of domestic epidemic, cadres and workers in the tungsten industry paid attention to epidemic prevention and control on the one hand and increased production and income on the other hand. With the steady recovery of tungsten market demand and the stabilization of price rise, the business indicators of the industry were significantly improved; The new production capacity and investment intensity are concentrated in the field of deep processing, and the industrial structure continues to be optimized. In 2021, the main business income of tungsten industry was nearly RMB 100 billion Yuan (a record high), with a year-on-year increase of 34.23%; The total profit and tax was RMB 9 billion Yuan, a year-on-year increase of 22.45%, and the total profit was about RMB 5.3 billion Yuan, a year-on-year increase of 51.43%. The national tungsten concentrate production capacity was 176,000MT, a year-on-year increase of 1.73%; Ammonium Paratungstate(APT) production capacity was 192,000 MT, a year-on-year decrease of 2.78%; Tungsten Cemented Carbide production capacity was 60,000 MT, with a year-on-year increase of 9.09%; The output of tungsten concentrate in China was about 138,900 MT, a





year-on-year increase of 0.22%; APT output was 115,000MT, a year-on-year increase of 9.52%; The output of tungsten cemented carbide was 50,000MT, with a year-on-year increase of 21.95%.

2. Industrial Policies to Ensure the Stable Operation of Tungsten Industry

Tungsten mining continues to implement total amount control. In 2021, the total amount control index of tungsten concentrate mining in China was 108,000MT, an increase of 2.86% over the previous year. Continue to implement “the Guiding Catalogue for industrial structure adjustment (2019 version)” (发改委第 29 号), “The Negative List of Market Access (2019 version)” (发改经体〔2018〕1892 号) and the state-owned trade management policies for tungsten export; The Ministry of Commerce issued “the Special Administrative Measures for Foreign Investment Access (Negative List) (2021 Version) and the Special Administrative Measures for Foreign Investment Access in the Pilot Free Trade Zone (Negative List) (2021 Version). The negative list of foreign investment access in 2021 puts forward that investment in tungsten exploration, mining and beneficiation is prohibited. The Ministry of Industry and Information Technology, the Ministry of Science and Technology and the Ministry of Natural Resources jointly issued the 14th five year plan for the development of raw material industry (工信部联规〔2021〕212 号), and the National Development and Reform Commission issued the notice on the 14th five year plan for the development of circular economy (发改环资〔2021〕969 号).

The above industrial policies and plans have important guiding significance for the tungsten industry and effectively ensure the smooth operation of the tungsten industry.

3. Orderly Progress of Key Projects

In 2021, enterprises in the tungsten industry carefully planned a number of key projects around industrial transformation and upgrading, process and technology innovation, product optimization and quality improvement, which promoted the green and intelligent development of the industry and provided strong support for the high-quality development of the industry.

3.1 The technological transformation of tungsten carbide powder intelligent production line of Zhuzhou Cemented Carbide Group (owned by China Tungsten High Tech Co., Ltd. the CNC blade production line of Zigong Tungsten Carbide and the construction of underground 5G network in Shizhuyuan have been completed.

3.2 The Ganzhou Industrial Park project with a total investment of RMB10.2 billion Yuan by Jiangxi Tungsten holding Group has started construction, with an annual output of 10,000 MT of tungsten (carbide) powder and 8,000MT of tungsten carbide sintered production line in phase I.

3.3 The tungsten powder and tungsten carbide, tungsten alloy production line project of





Xiamen Gold Egret Haicang Cemented Carbide Industrial Park in Xiamen (phase II), with a total investment of RMB 2 billion Yuan by Xiamen Tungsten, was launched to build a production line and supporting facilities with an annual output of 12,000MT of tungsten powder, 11,200MT of ready to press (mixture) tungsten carbide powder and 2,000 MT of tungsten cemented carbide;

3.4 With a total investment of RMB560 million Yuan, the main infrastructure of the industrialization project of Boyun Dongfang Powder Metallurgy Co., Ltd in Lugu Base with an annual output of 2,000 tons of high-efficiency and precision cemented carbide tools and high-strength and toughness extra coarse-grained cemented carbide tunneling tools has been completed.

4. New Achievements in Scientific and Technological Innovation

In 2021, the tungsten industry adhered to the development strategy of scientific and technological innovation, aimed at the forefront of world science and technology, continuously increased scientific research investment, achieved gratifying innovation achievements, and enhanced the core competitiveness and sustainable development ability of the industry. According to incomplete statistics, there are 10 major award-winning achievements related to tungsten industry, including 3 national first prizes, 2 second prizes and 5 third prizes.

4.1 The projects that won the first national prize of science and technology in China's nonferrous metals industry in 2021 are as below.

"Key technologies for large-scale collapse disaster assessment and zoning and grading prevention and control in goaf "Declared by Central South University, Changsha Mine Research Institute Co., Ltd., Peking University of Science and Technology and Changsha University of Technology.

"Key Technology of Wet Preparation of Modified Tungsten Based Powder and Its Application in Heat Resistance and/or super hard Materials" declared by Hefei University of Technology, Hefei Institute of Material Sciences, Chinese Academy of Sciences, Zigong Cemented Carbide Co., Ltd. and Advanced Technology.

"Key Technology and Industrial Application of Large Low Consumption, High Field Strength and High Gradient Magnetic Separator" declared by Kunming University of Technology, Ganzhou Jinhuan Magnetic Separation Equipment Co., Ltd and Ganzhou Nonferrous Metallurgy Research Institute Co., Ltd.

4.2 The Projects That Won the Second National Prize of China Nonferrous Metals Industry Science and Technology in 2021 are as below:

"Metallogenic Regularity and Metallogenic Prediction of Indosinian Tungsten Polymetallic





Deposits in Tianshan Mountains" declared by Beijing Institute of Mineral Geology Co., Ltd., Bureau of Geology and Mineral Exploration and Development of Xinjiang Uygur Autonomous Region, the Sixth Geological Brigade, Xinjiang Institute of Ecology and Geography, Chinese Academy of Sciences, Peking University, China University of Geosciences (Beijing) and Chang'an University.

"Preparation technology and Application of Tungsten Cemented Carbide Roll Ring Material for Temperature Controlled Rolling" declared by Zhuzhou Cemented Carbide Group Co., Ltd.

4.3 The Projects That Won the Third National Prize of China Nonferrous Metals Industry Science and Technology in 2021 Are as Below:

"Determination of Specific Surface Area and Particle Size of Metal and its Compound Powder and Establishment of National Standard for Ultrasonic Flaw Detection" declared by Zhuzhou Cemented Carbide Group Co., Ltd.

Ganzhou Nonferrous Metallurgy Research Institute Co., Ltd., National Standard (Beijing) Inspection and Certification Co., Ltd., Baotou Rare Earth Research Institute, National Tungsten and Rare Earth Product Quality Supervision and Inspection Center, Ganzhou Feier Testing Technology Co., Ltd., Analysis and Testing Center of Jiangxi University of Technology, Ganzhou Huaxing Tungsten Products Co., Ltd "Development of Tungsten Concentrate Series National Standard Samples" declared by Fujian Zijin Mining and metallurgy Testing Technology Co., Ltd;

Luoyang Luanchuan Molybdenum Industry Group Co., Ltd. and Luanchuan Public Inspection and Testing Center declared "Research and Application of Composition Determination of Molybdenum-Tungsten Ore and Molybdenum Iron Ore- X-ray Fluorescence Spectrometry".

4.4 The Projects That Won the National Third Prize of Green Mine Science and Technology in 2021 Are as Below.

Ganzhou Nonferrous Metals Metallurgy Research Institute Co., Ltd., Jiangxi University of Technology, Jiangxi Xialong Tungsten Co., Ltd., Jiangxi Tieshanlong Tungsten Co., Ltd., Jiangxi Piaotang Tungsten Co., Ltd. and Jiangxi Dangping Tungsten Co., Ltd. declared "Key Technologies for Safe and Efficient Mining and Disaster Monitoring of Tungsten Deposits in the Lower Bomai Formation of Complex Goaf Group".

"Tungsten Mine Wastewater Treatment Technology and Industrial Application" declared by Ganzhou Nonferrous Metals Metallurgy Research Institute Co., Ltd., Jiangxi Dajishan Tungsten Co., Ltd., Jiangxi Dangping Tungsten Co., Ltd. and Jiangxi Tieshanlong Tungsten Co., Ltd.





5. Effective Brand Creating and Building

Tungsten industry enterprises pay attention to brand building and actively participate in various qualification application and evaluation activities, which have been highly praised by provincial and ministerial government departments, and have achieved remarkable results in improving the brand influence of enterprises.

5.1 The Sixth Batch of National Champion Products in Manufacturing (Ministry of Industry and Information Technology): "Ammonium Paratungstate (APT)" of Xiamen Tungsten.

5.2 Green Factories in 2021 (Certificated by Ministry of Industry and Information Technology of China): Advanced Tianlong, Xinheng tungsten, Jiangxi Tungsten, Jingjiang Yunchuang, Xiamen Tungsten, Hardstone Precision.

5.3 The Third Batch of Green Design Demonstration Enterprises of Industrial Products (Certificated by Ministry of Industry and Information Technology): Zhuzhou Cemented Carbide Group Co., Ltd.

5.4 The Third Batch of National Specialized New "Little Giants" (Certificated by Ministry of Industry and Information Technology): Ganbei Tungsten, Zigong Great Wall Surface, Ganzhou Jinhuan, Ganzhou Aoketai, Suzhou Xinrui, Boyun Oriental, Hunan Dingli, Zhuzhou Oukeyi, Zhuzhou Precision Industry, Zhuzhou Kent, Chengdu Bangpu, Sichuan Kelite and Zhuzhou Ruidel.

5.5 The Second Batch of Single Champion Products of Hunan Province: Zhuzhou Oukeyi "Sawtooth Blade" and Zhuzhou Ruidel "Pressure Sintering Furnace".

5.6 Jiangxi Famous Brand Product In 2021: "Tungsten Concentrate" of Dajishan Tungsten; Ammonium Paratungstate of (APT) Xinheng Tungsten And Haichuang Tungsten; "Tungsten Powder" of Zhangyuan Tungsten, Yaosheng Tungsten and Nancang Tungsten Cemented Carbide, Zhangyuan Tungsten, Haisheng Tungsten, Yaosheng Tungsten And "Tungsten Carbide" Of Nancang Tungsten Cemented Carbide; Ganzhou Huamao "Tungsten Products"; "Cemented Carbide" Products Of Zhangyuan Tungsten, Jiangxi Tungsten, Nancang Tungsten Cemented Carbide, "Tungsten Cerium Electrode" of Hongfei Tungsten-Molybdenum.

5.7 Provincial Expertise and Innovation: Jiangxi Xianglu, Kunshan Changying, Zhejiang Dewei, Zhejiang Hengcheng, Tiantong Jicheng, Chengdu Chuanhard, Sichuan Tungsten, Shengong Tungsten Steel, Zigong Jincheng, etc.

6. The Strategic of Prospecting Breakthrough Has Achieved Results

On February 25, the Ministry of Natural Resources held a press conference on the achievements of the ten-year strategic action for prospecting breakthrough in Beijing.





Since the State Council approved the implementation of the prospecting breakthrough strategic action in 2011, the prospecting breakthrough strategic action has completed the overall goal and achieved fruitful results. Among them, 6.12 million MT of tungsten resources were added, and two world-class large tungsten mines in Zhuxi and Dahutang in Jiangxi Province, were explored, which further improved the guarantee capacity of tungsten resources. Zhuxi, Fuliang of Jiangxi Province, the north area of Dahutang, Wuning, Dongping, Wuning, the south area of Dahutang, Wuning, Juren and Dawutang, Jing'an, shizidun, Luanchuan in Henan Province, Chitudian, Linxiang City in Hunan Province, Huxing mountain, Wengyuan, Hongling in Guangdong Province, and Meihua Daping, Lechang's 12 tungsten mining areas, including Xiaodushan in Dunhuang City, Gansu Province, were rated as "excellent prospecting achievements of prospecting breakthrough strategic action" by the Ministry of Natural Resources of China

7. Numerical Control Tungsten Carbide Blade Realizes Leapfrog Development

Numerical control tungsten carbide indexable Cutting inserts and blade is one of the key factors that determine the machining efficiency and quality of mechanical manufacturing. It is of great significance to the manufacturing fields of high-end equipment such as aerospace, energy, automobile, rail transit and 3C. It is known as the "Pearl on The Crown" of tungsten industry. The production and R & D of CNC blade in China started in the 1990s. In recent years, it has developed rapidly and achieved leapfrog development. In 2021, the output of CNC blades in China exceeded RMB450 millions, and significant progress was made in category and quality, which basically met the demand for CNC blades in various industries of national economy, national defense and military industry. Among them, Zhuzhou Cemented Carbide Cutting Tools Co., Ltd (ZCC.CT) took the lead in breaking the record in annual output of RMB100 millions.





8. "China Tungsten Industry Development Plan (2021-2025)" Issued

The preparation of China's Tungsten Industry Development Plan (2021-2025) follows the preparation idea of "condensing industry wisdom and industry strength", actively coordinates with the association, relies on industry leaders and backbone enterprises, gives full play to the wisdom of professional institutions and industry experts, and completes the preparation of the plan with high quality. The plan comprehensively summarizes the development achievements and existing problems of China's Tungsten Industry during the 13th-Five-Year-Plan period, systematically analyzes the development environment, and puts forward the requirements and objectives of industry development, which is of great significance to the development of China's Tungsten Industry during the 14th-Five-Year-Plan period. It was deliberated and adopted by the second council of the seventh session of China Tungsten Industry Association (CTIA) and issued. The plan has been submitted to relevant ministries and commissions and industrial institutions and distributed to the member units of the association.



9. "Shanghai Forum" Held Successfully

On October 18, 2021 China (Shanghai) Tungsten Raw Material Industry Development High-end Forum with the theme of "**Building A Strong Foundation, Building A Dream, Cooperation and Win-Win**" was successfully held for the first time. Leaders and academicians of ministries, commissions and relevant units came to the meeting and delivered speeches. The forum conducted in-depth exchanges and discussions on industrial coordinated development, industrial development dynamics, market change situation, industrial norms and self-discipline, green and low-carbon development and industrial policy suggestions, and the atmosphere was warm. The forum was highly concerned by relevant institutions at home and abroad and positively praised by the tungsten industry.

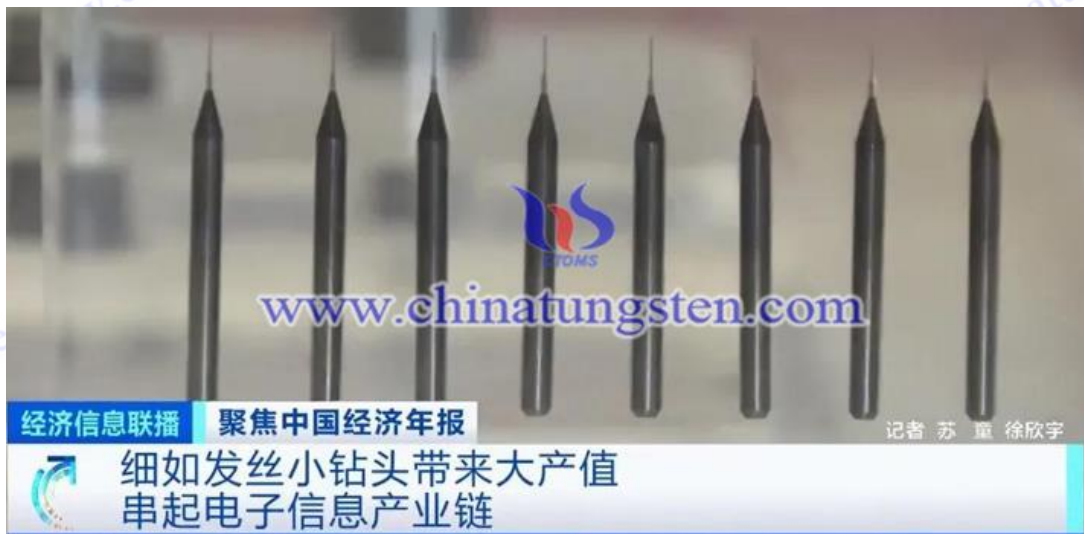




10. The Society Pays Close Attention to Tungsten Industry

The Capital Market Favors the Tungsten Industry

With the increasingly prominent role of tungsten in the national economy, the attraction of tungsten industry is increasing. Zhuzhou Huarui (688059) and Suzhou Xinrui (688257) have successively been listed on the science and Innovation Board of Shanghai Stock Exchange, and a number of backbone enterprises in the tungsten industry have entered the listing guidance period. China Tungsten High Tech (000657) won the title of "High Quality Development of Listed Companies in The Fifth Era Financial Kumquat Award", and CMOC (603993) won the two major awards of "Best Board of Directors and Best Investor Relations of Chinese Listed Companies" in the 12th Tianma Award for investor relations of Chinese listed companies, Okoyi (688308) won the title of "The Most Popular Listed Company in Hunan Province in 2020".





The Attention of Mainstream Media Continued to Increase

The tungsten industry inherits the red gene, follows the guiding ideology and main objectives of the national "14th-five-year-plan", has achieved gratifying results in meeting the needs of the national economy and national defense military industry for tungsten, ensuring the autonomy and controllability of the high-end manufacturing industry chain, and striving to build a powerful tungsten industry, which has received in-depth attention and special reports from the mainstream media.

10.1 CCTV financial channel reported that the first state-owned enterprise established by the Communist Party of China – Zhonghua Tungsten (Sino Tungsten) Mining Company strongly supported the revolutionary cause in 1920s.

10.2 CCTV "Morning News" reported that Xiao Yaqing, Minister of Industry and Information Technology, praised Jinzhou company's micro drill products, and the financial channel reported "The Birth Process of a Drill Bit";

10.3 CCTV news launched the special live broadcast program "Today's China, Hunan" to celebrate the 100th anniversary of the founding of the Communist Party of China, which reported on the independent innovation and import substitution of ZCC Group.

10.4 The client of Xinhua News Agency reported that "For A Hundred Years, Jiangxi Tungsten Inherits the Red Gene and Leads Steady Development".

10.5 The second issue of China National Geography in 2021 introduces ZCC Group, the "Cradle" of Cemented Carbide in New China, And Yaogangxian Mine with A Long History;

10.6 People's Daily reported in "High Quality Development Of Hunan Advanced Manufacturing Industry" that Boyun Dongfang cemented carbide shield cutter head, as the core component, was applied to the "Jinghua" shield machine with the largest diameter in China.

10.7 China Mining Press issued "Science and Technology Enables Leading China's Mining Industry – See How CMOC Builds Smart Mines", reporting the advanced experience of CMOC in building smart mines.

