



On the Development of Chaozhou Ceramics from the Road of Sea Silk

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Abstract. In the new stage of regionalization and globalization, China put forward and promoted the “Belt and Road” initiative to meet the challenges facing the world economy, meet the needs of China’s opening-up regional structural transformation, and create good conditions for promoting the growth of global trade and promoting the transformation and development of globalization. Guangdong Chaozhou ceramics industry has developed from a cultural center along the “Sea Silk Road” to the top pillar industry today. How to better integrate into the opportunity brought by the “Belt and Road” initiative, chaozhou municipal government timely proposed to build a hundred-billion ceramic industry cluster, which found a strategic target for the development of Chaozhou ceramics industry. This paper analyzes the cultural importance of chaozhou ceramic industry from the “Sea silk road”, ceramic development history, current situation, development direction, problems, opportunities and challenges, so as to make chaozhou ceramic industry to higher and further development.

Keywords: Road of Sea Silk · ceramic · development

1 Introduction

Chaozhou ----- “Road of Sea Silk” cultural center.

The word “China” is derived from ceramics. The maritime Silk Road in ancient China began in the Tang Dynasty and flourished in the Song and Yuan Dynasties, also known as the “Ceramic Road”. Chaozhou -----, an important cultural town of “Sea Silk”, is located in Zhelin Port, Raoping County, near the border of Fujian and Guangdong (Fig. 1). Boom in tang, song, yuan, “sea silk road” in China is mainly composed of quanzhou, guangzhou, ningbo of three main port and other regional port, since the song dynasty, chaozhou region of quang nam and maritime trade in fujian, jiangsu and zhejiang provinces and overseas areas continue to strengthen, become and quanzhou, guangzhou to maritime trade between two major ports, maritime traffic location is very important. As early as a thousand years ago, Chaozhou had left its mark on the maritime Silk Road. There is a saying in Chaoshan: “Before Shantou port, there was Zhe Lin port”, which means zhe Lin port, the first gateway of eastern Guangdong. As the earliest foreign trade port in Chaoshan area, zhe Lin port is an important fulcrum of China’s “maritime Silk Road”. Zhelin Port is located in Zhelin town at the southern end of Raoping County at the



Fig. 1. Port Zhelin, an important ancient “ Road of Sea Silk “ town.

border of Fujian and Guangdong. Since the early Ming and Qing Dynasties, chaozhou goods were transported to Guangzhou and Fujian and Zhejiang by “red head ships” and “big Turtle ships”, or as far as Nanyang (Southeast Asian countries), Japan and other places, and turned to sell goods to import. “Zfan Zhi” records: Liu Mei Kingdom (today’s Malay Peninsula) “diet with kwai leaves as a bowl, not spoon tendon, and eat it”; Sujidan (modern Java, Indonesia) “Eat without utensils, eat with leaves, eat away”; Boni Kingdom (modern Brunei) “no utensils, bamboo woven, shellfish and leaves for utensils, after eating and discarded”. In foreign Countries of Ming History iv, “Wenlang Horse God (ma Chen in modern Kalimantan, Indonesia) used banana leaves to eat utensils at first, and then with Chinese people, gradually using porcelain [2]. “In southeast Asian countries, “eating utensils were not used in the past”, but after the import of Chinese porcelain, it became their ideal living utensils, thus changing their eating habits. It can be seen that ceramic products had a great influence on southeast Asian countries at that time.

It was not until the second year of Qing Yong that chaozhou Transport was re-established and the shipping industry of Zhe Lin port was unprecedented prosperous [1]. In the 1930s, the import and export trade in Chaoshan region developed further, and the main foreign trade partners were Hong Kong, Singapore, Bangkok, Saigon, Britain, the United States, Japan and other places. Domestic mainly for Shanghai, Fuzhou, Xiamen, Ningbo, Niuzhuang, Tianjin and other coastal cities.

Since the sui dynasty, chaozhou is an important part of overseas history, actively participate in maritime trade, the tea, silk, porcelain, brown sugar and a large number of exquisite handicraft shipped by sea and land to all over the world, with variety of complete trade goods, frequent overseas exchange, important sea lanes status as well as many overseas, Chaozhou became an important city on the “Road of Sea Silk”.

On February 1, 2018, “Bijia Mountain Kiln” of Chaozhou Song Dynasty (Fig. 2) was awarded the “Cultural geographic coordinates of Chaozhou Maritime Silk Road” by The Propaganda Department of Chaozhou Municipal Party Committee and Chaozhou Literary and Art Federation, showing the cultural customs of Chaozhou as a related area of the ancient maritime Silk Road. As a famous historical and cultural city, Chaozhou had shipping records as early as the Sui Dynasty and had reached its peak in the Song Dynasty, becoming an important link of the ancient maritime Silk Road. Thanks to the maritime Silk Road, Chaozhou ceramics have been sold overseas. Over the years, among the ceramic products unearthed and salvaged from shipwrecks around the world, almost all of them were made in ancient Chaozhou kilns.

Through historical sites, chaozhou, as an important node of the ancient Maritime Silk Road, can be deeply understood in foreign exchanges, trade, transportation, cultural



Fig. 2. Bijia Mountain kiln site

influence and other historical and cultural context, which is of great significance to Chaozhou's participation in the construction of the "Belt and Road" in the new era.

Chaozhou ceramics has a long history and is one of the birthplaces of China's ancient porcelain capital and ceramic culture. It has won many golden signs such as "China porcelain Capital", "National High-tech Industrial Base of Daily Porcelain" and "China Ceramic Export Base".

The porcelains unearthed from several sites of Tang dynasty kilns in Chaozhou are characterized by fine birthweight, regular shape, even thickness, clear pattern, and smooth and pure glaze color, including white glaze, shadow green glaze, green glaze, black glaze, and brown glaze. Some of them are engraved with symbols of family names on the outer wall, and some have finger pits at the bottom to prevent them from slipping. It can be seen that chaozhou porcelain production in tang Dynasty reached a quite high level.

Chaozhou ceramics in the long history of development, in addition to its own continuous innovation and expansion, always from the production technology or process characteristics, or cultural color and other aspects of the exchange and contact with other porcelain areas, absorb and integrate the advanced production technology and process characteristics of other porcelain areas.

Chaozhou, bordering the sea, was one of the ports for exporting Chinese goods to foreign countries in ancient times. From the contemporary unearthed Chaozhou ceramics of tang Dynasty, its shape, appearance and decoration are mostly lotus flower, chrysanthemum petal pattern, which caters to the consciousness of worshipping Buddha in Southeast Asian countries at that time. It can be seen that the hipsters had the concept of commodity design and market consciousness long ago. In song Dynasty, in order to meet the needs of foreign consumers, many products were designed and produced according to the requirements of customers. For example, the European statues, Arab statues, horse-riding porcelain statues and western dogs produced by chaozhou kiln in the Song Dynasty were unearthed from archaeological excavations, as well as the POTS and plates with Arabic characters for the army of Persian port countries. It shows the brilliant achievements of chaozhou porcelain industry in song Dynasty, and shows the characteristics of chaozhou people being pragmatic, open and compatible.

Some people visited the "China porcelain Capital Exhibition hall" in Chaozhou and sighed, saying that Chaozhou is no more fine than chaozhou tong carving art; It is said

that the people of Chaozhou are diligent, no matter how diligent they are, they are not as diligent as the artists of Chaozhou porcelain sculpture. It is said that chaozhou people are true, and no chaozhou ceramic artists have sincerity and true love for pursuing their own art.

The creation of chaozhou porcelain makers in yucheng makes people appreciate a kind of friendly, auspicious and enterprising life experience contained in the works, reflects the cultural code of conduct and aesthetic taste of Chaozhou, and shows the wisdom and leisurely creation mentality of chaozhou skillful craftsmen in mastering ceramic art.

2 Development of Chaozhou Ceramics

Chaozhou ceramic origin, has the profound historical culture foundation, according to archaeological discoveries, as early as 6000 years ago in the neolithic age, in Chen Qiaobei mound, puning (old) chaozhou jurisdiction HuTouShan site excavated building stone and bone artifacts, pottery shows that in ancient times of chaozhou, ancestors and thrive in this and making pottery, The development of pottery is an important symbol of human civilization.

During the Shang and Zhou Dynasties, tombs in Fubin, Raoping and other places unearthed large pottery statues and gordons (historically known as “Fubin culture”) that were different from the cultural characteristics of the Central Plains, showing the cultural characteristics of early Chaoshan and Southern Fujian.

During the Two Jin and Southern and Northern Dynasties, there were frequent cultural exchanges between the north and the South. At that time, famous families and civilians from the war in the north moved southward one after another. Many people settled in Yi’an County.

During the Tang and Song dynasties, China’s economic center of gravity gradually moved southward, and the agriculture, handicraft and commerce in Chaoshan area began to take shape. Later in the Yuan, Ming and Qing dynasties, Chaoshan economy and culture had become a densely populated and economically and culturally developed area in Lingnan. Ceramics and other handicrafts have reached a very high level. In tang Dynasty, they were mainly represented by shuiche kiln in Meixian county and Beiguang porcelain kiln in Chaozhou. Song Dynasty bijia kiln production of green white glaze, yellow glaze, sauce brown glaze porcelain, foetus soil panning white, high temperature burning, export based. The excavations of beiguan kiln site, Nangan kiln site and Bijiaoshan Kiln site in the Song Dynasty also show that chaozhou had large-scale ceramic production at least in Gaozong Of tang Dynasty (676–679 AD), with fine technology and fine porcelain, high level of ceramic production technology and creation level, and the emergence of underglaze spot brown porcelain. Chaozhou is ceramic capital of the northern song dynasty period, ceramic production reached an unprecedented scale, more rich and colorful adornment gimmick, a large number of export products, shows the chaozhou has a technological civilization and rich culture foundation, pen rack piedmont is porcelain production areas at that time, there are “hundreds of kiln village” is the “big MAC” of Chinese ceramic industry. Bijia Mountain kiln site is one of the ancient kiln sites under state key cultural relics protection.

During the Ming and Qing Dynasties, the main porcelain production areas in Chaozhou were mainly distributed in Gaopo (now under the jurisdiction of Meizhou Fengshun, under the jurisdiction of Chaozhou in ancient times), Fengxi, Jiucun, Huilai and other places. The products were mainly for daily use, mainly for export [4].

On January 1, 1800 (December 9, the 9th year of the reign of Emperor Xianfeng in Qing Dynasty), Chaozhou was opened to the outside world, and Shantou port was set up in Shantou, which became the open commercial port of Chaozhou capital. Fengxi porcelain industry came into being because of the opening of Shantou Port. In the late Qing Dynasty, Fengxi porcelain was created earlier and larger in scale, such as Renhe, Yaoxing, Jinhe, Rongli, Ruhe and Taozhen jade. Fengxi dayao wucui products are exported to Japan, Southeast Asia, Korea, Asia and Europe via Hong Kong. Domestic sales in Guangzhou, Shanghai, Nanjing and other places.

In Fengxi during the period of the Republic of China, there are 29 bank kiln burning straw, in addition to yong lee, tai sheng kiln kiln, wantai kiln fired for their products, most of the other is leasing management, for the retail fire help billet, contingent fee, effectively promote the development of family workshops, appeared every family pound a mud, throwing, main products are porcelain and craft porcelain, vases, (figure). According to the Annals of Chaozhou compiled in 1949, "Ceramics are also one of the major local products in Chaozhou", "producing areas are gaopo in Dapu and Fengxi in Chaoan; Raoping Shangrao followed by nine villages." "The output quantity of Fengxi is longer than that of Gaopi". "Besides the local sales, the ceramic products are exported to Guangdong South Road, Fujian, Zhejiang, Beijing and Shanghai. "In the fifteen years since the Republic of China, porcelain bowls in the shape of tubes have been sold to China and the South Pacific Islands at a price of five or six yuan per Dan, and two or three yuan per Dan, with an annual output of more than three million yuan". According to statistics in Chaomei customs historical materials compilation, "from 1873 to 1934, the number of outbound passengers in Shantou port was 5348061, and the number of returning passengers was 4223813. According to the data, before 1931, there were 8 domestic and 34 foreign steamers operating in Shantou Port. Only in 1933, the number of ships entering and leaving Shantou port amounted to 4478. During the shipping period, Shantou port wharf is jammed, such as Tongyoushen race." Ceramics produced in Chaozhou and southern Fujian were exported through Shantou Port.

In 1959, through public-private joint venture and cooperative transformation, Chaozhou ceramic production enterprises formed state-owned and collective ceramic production system, with ceramic industry companies as the main body of the ceramic production system. Have porcelain 1 to porcelain 9 factory, pottery 1 to pottery 3 factory, as well as fine arts factory, color porcelain factory, stoneware porcelain factory, building ceramic factory, Hanjiang ceramic tile factory, porcelain glaze factory, porcelain mud factory, ceramic raw materials chemical factory, (state-owned) color porcelain factory, (two light) color porcelain factory. Before 1990, these ceramic enterprises were important foreign exchange earning units in Guangdong Province. After 90s, with the deepening of reform and opening up, the rapid rise of private enterprises, emerge a batch of large-scale production of private ceramic enterprises, and become the subject of business expand the size of the system of Chaozhou ceramic Chaozhou Fengxi ceramic production areas in Fengxi also gradually to ancient alley, the Phoenix pond, pond, floating ocean and iron Po

extension, with three raoping county, xinfeng and nine village surrounding daily-use ceramics production, Chaozhou ceramic enterprises develop rapidly and become the top of eight pillar industries in Chaozhou. All over the industrial community, building sanitary ceramics quietly rise. Chaozhou local government plans the mechanism innovation of ceramic industry, guides the industrial development according to the law of market economy, and encourages private economy to join and develop the ceramic industry. According to the development characteristics and conditions of the local ceramic industry, the government makes plans and arrangements for the development of the industry from the aspects of resources and clusters. Fengxi District as the core, the establishment of "Ruyi Ceramics Industrial Park" and other demonstration areas, formed a large-scale industrial cluster. According to the ceramic industry developing "relative concentration, distribution of the characteristics of the three areas in a county (raoping, xiang bridge, fengxi district, Ann area) to set up the characteristic industrial park, including xiang bridge development zone, chicken spring lake high-tech zone, dongshan lake industrial park, chaoan floating ocean, fengtang, ancient lane area, three rao raoping, xinfeng ceramics such as cluster area. Each cluster area is interrelated and has its own characteristics, so that the characteristic products are cultivated and developed. For example, Ruyi Industrial Park in Fengxi mainly develops high-grade daily ceramics and art ceramics, guxiang and Fengtang producing areas mainly develop sanitary ceramics, Sanrao and Xifeng in Raoping transform glass ceramics based on the development of traditional daily ceramics [3]. Chaozhou is the only producing area in China where three kinds of ceramic products have developed simultaneously, which is directly related to the government's park planning and development guidance. It is the bright spot and demonstrable effect of chaozhou ceramic characteristic industry development to make use of the basic conditions of the same industrial chain and develop various products horizontally.

Chaozhou ceramics have various types and unique styles, including arts and crafts porcelain, daily ceramics, sanitary ware, antique ceramics, Christmas porcelain, environmental protection porcelain, bone porcelain, electronic ceramics and other series of products. Arts and crafts porcelain mainly through flower, porcelain flower, porcelain model, antique color, etc. Among them, the 1.3-m three-story vase "Friendship" was presented to North Korean President Kim Il Sung by Deng Xiaoping, vice chairman of the Central Committee of the Communist Party of China, as a gift of China in 1978. Spring Scenery, a 1.2-m-high porcelain flower basket, was designated as a "national treasure" and collected by the Great Hall of the People. The large-scale tonghua porcelain carving "Double Dragons Playing with Pearls" is praised as "ancient art, modern technology and crystallization of human wisdom, representing the peak of Chinese craftsmanship". The large-scale embossed porcelain mural "Riverside scene at Qingming Festival" consists of 1900 embossed porcelain plates, which was selected into the Guinness Book of World Records [6].

Since the reform and opening up, especially in the past ten years, Chaozhou Municipal Party Committee and Government have attached great importance to the ceramic industry, which has become the first of the eight pillar industries in Chaozhou, forming a ceramic production base with a complete range of daily ceramics, arts and crafts ceramics, architectural sanitary ceramics, special ceramics and so on. It has become the most dynamic and fastest developing ceramic production area in China, and its ceramic

export, total output value and sales volume are among the best in the country. The ceramic industry has obvious characteristics and occupies an important position in the domestic industry. In April 2004, it was awarded the title of “China’s Porcelain Capital”. December 8, 2005, Chaozhou was identified as “Guangdong Province Ceramic Industrial Cluster Upgrading Demonstration Zone”; On February 24, 2006, Raoping County of Chaozhou city was identified as “Home of China’s daily ceramics export”. On January 9, 2007, “National Characteristic Industrial Base of Daily-use ceramics” and “National Productivity Promotion Center of Daily-use Ceramics” were listed in Chaozhou. On December 17, 2013, it was awarded the title of “China Building sanitary Ceramics Export Base” by China Chamber of Commerce of Metals and Minerals Import and Export. Guxiang town and Fengtang Town were respectively awarded the honorary title of “The First Town of Sanitary ceramics in China” and “Important Town of Ceramics in China” by China Building Sanitary Ceramics Association. The only characteristic industrial base of daily ceramics in China; Chaozhou has become one of the largest ceramic production areas in China. China is the largest production and export base of sanitary ceramics, craft porcelain and daily porcelain. Sanitary ware accounts for more than 40% of the national total output, and the export volume accounts for more than 45% of the national output, making it the largest sanitary ware production base and export base in China. The electronic ceramic matrix of industrial electronic ceramics accounts for 70% of China’s total output and nearly half of the world’s total output, making it the largest industrial electronic ceramic matrix production base in China [7].

3 Prospect of Chaozhou Ceramics in “One Belt and One Road”

Since the “Belt and Road” initiative was put forward, the ceramic trade between Chaozhou and countries along the “Belt and Road” has been growing. Chaozhou ceramics have been exported to more than 160 countries and regions in the world and sold to provinces and regions in China. As the largest ceramic production base and export base in China and the most complete ceramic production area with the domestic industrial chain, Chaozhou has more than 5000 ceramic production enterprises and 4 a-share listed ceramic enterprises. The annual sales volume of daily-use ceramics, arts and crafts ceramics and architectural sanitary ceramics respectively accounts for 25%, 25% and 40% of the country, and the export volume accounts for 30% and 40% of the country. 55%, ranking first in China; The annual sales of optical communication ceramics and electronic ceramic substrates account for more than 70% and 55% of the world respectively, ranking first in the world. In 2019, the annual output value of ceramic industry is 54.8 billion yuan, and strive to reach 100 billion yuan in 2025, to create a world-class advanced ceramic manufacturing industry cluster.

Two free trade area is located in chaozhou guangdong and fujian, is not only an important node of ancient maritime silk road and sea silk culture, one of the city is also a instance, cooperation at the provincial level strategic frontier, coupled with the unique culture of chaozhou overseas resources, port resources, these will actively participate in the “area” chaozhou of construction to win a place.

Someone once compared the pace of development of Chaozhou to that of a leopard on the run, because it does not move at a constant speed, but jumps and is good at seizing

opportunities. The history of the “Maritime Silk Road” and the proposal of the “Belt and Road” initiative have brought unprecedented opportunities to Chaozhou. The Party Committee and government of Chaozhou timely proposed to build a hundred-billion ceramic industry cluster, attach great importance to the high-quality development of the ceramic industry, and promote the ceramic industry to be better and stronger from six aspects including raw material upgrading and intelligent manufacturing. The introduction of the world’s largest intelligent sanitary ware base in Chaozhou, 3D printing, manipulator, digital workshop and other intelligent information technology has been promoted and applied, traditional ceramic industry production has been comprehensively improved. In 2019, Country Garden invested 10 billion yuan in chaozhou intelligent sanitary ware production base, which is the world’s largest intelligent sanitary ware production base; On September 26, 2020, chaozhou people’s government and China building sanitary ceramics association signed the “build China (chaozhou) advanced intelligent health sanitary ware manufacturing base” cooperation framework agreement, the development of intelligent health sanitary ware industry, is an important direction of make billions of chaozhou ceramic industry cluster, chaozhou ceramics industry has formed the nation’s largest ceramics industry cluster, There are more than 5,000 ceramic manufacturing enterprises (including enterprises related to the industrial chain), employing more than 400,000 people, and the total output value of the ceramic industry is more than 50 billion yuan, making it the largest export base of daily ceramics and sanitary ceramics in China. Among them, the annual output value of daily ceramics exceeds 20 billion yuan, sanitary ceramics exceeds 10 billion yuan, and special ceramics exceeds 3 billion yuan (mainly electronic ceramics produced by Sanhuan Group). For more than ten consecutive years, chaozhou’s total production of building sanitary ceramics accounts for 40% of the national total production, and the export volume accounts for about 45% of the national total.

4 Advantages of Chaozhou Ceramics Industry

Closely following the national “One Belt and One Road” initiative, chaozhou municipal government timely proposed to build a hundred-billion ceramics industry cluster, which found a strategic target for the development of Chaozhou ceramics industry. With the transformation and upgrading of the ceramic industry, new technology and high technology are constantly applied in the field of ceramic production and sales. The production and operation mode of ceramic enterprises will completely overturn the traditional mode. In recent years, the technical level of China’s ceramic industry has been significantly improved. Large-scale automatic, efficient and energy-saving kilns, advanced intelligent automatic production lines, intelligent health sanitary ware, water-saving sanitary ceramics production technology has been increasingly improved and promoted. The product structure has been developed from middle and low grade to high, middle and low grade to meet the needs of different levels of consumption. The rapid development of industrial cluster, the formation of ceramic production areas with their own characteristics, a large number of powerful enterprises grow rapidly, accelerate the pace of international standards. Chaozhou ceramics industry production of ceramic products, similar products in the country, export scale and export potential and ranked among the

top national technical standards, is the most advantage and potential of the country's intelligent sanitary ware production base, one of the world's largest optical ceramic, electronic ceramic substrate production base, similar to the national ceramics product export has strong demonstration effect.

Advantages of Chaozhou ceramics industry: the number of enterprises in the industrial cluster is the largest; Complete supporting industrial chain (from raw material and material manufacturing, product design and development, mold supporting, product production and packaging, product quality inspection and testing, transportation and other links); Product variety, daily-use ceramics, art ceramics, sanitary ceramics and four categories of special ceramics, on product development, is a blend of different countries and national culture, to develop different shape, different decoration and different style products, and lead the innovation and the consumption trend in the world of household ceramics, ceramic chaozhou variety has more than 100000 kinds, Moreover, there are more than 10,000 kinds of upgrades every year, making it the largest production area in China. Wide sales channel, and the first to introduce the market operation mode, the private economic sector accounted for more than 95%, the same as the mode of industrial cluster, wenzhou, zhejiang, the management mode of chaozhou region is facing the world, by combining traditional and electricity marketing methods, as well as chaozhou ceramic export to more than 160 countries and regions of the world, the domestic sale to all over the country provinces and cities and regions; Rich in resources, Chaozhou has important mineral resources for ceramic production (such as Feitianyan porcelain mine), ceramic production design and development and production skills team, there are more than 400,000 skilled technicians and workers; The energy consumption per unit product is 85% of the energy consumption of similar domestic products. The input and intensity of kiln technical transformation are in the lead of the domestic industry. The first standard of energy consumption per unit product of daily use ceramics is developed by Chaozhou ceramic producing area.

Self-contained culture edification, nourishing, gave birth to a number of chaozhou chaozhou people personality is distinct, "entrepreneurship, delicate, gratitude, tolerance" as chaozhou people values and common culture gene, has "the tide of chaozhou people wherever they are," the number of hipsters in residence abroad has more than the local population, for the development of chaozhou today provides a "people person". Both the haisi culture and the "hipsters" at home and abroad are the precious spiritual wealth of Chaozhou, which will always inspire the development and take-off of Chaozhou.

The development of economy and society has put forward new requirements for ceramic industry. The cost of labor, land, resources and other factors is rising constantly, and extensive development is difficult to sustain. Energy saving and emission reduction, intelligent automation and high quality development have become new topics in the ceramic industry.

Chaozhou ceramic industry seize the opportunity, strive to build industry intelligent manufacturing, green manufacturing, in an automated equipment to replace artificial, replace the intelligent instrument with intelligent instruments, with the help of intelligent manufacturing industry to the Internet, cloud computing technology, such as large data flexible customization, realize the personalized intelligent storage, intelligent logistics, gradually to "unmanned factory" development.

In recent years, the degree of production automation and intelligence has been greatly improved. On the whole, there is still a big gap between China's intelligent manufacturing level and that of the world's ceramic power. Accelerating the development of intelligence is the key to the realization of great reform in China's building sanitary ceramics industry and the reconstruction of the global building ceramic ecological circle, which is imperative.

Chaozhou ceramics have a long history, profound deposits, unique style and complete system; With four series of daily ceramics, arts and crafts ceramics, architectural sanitary ceramics and special ceramics, it is one of the birthplace of China's porcelain capital and ceramic culture. After thousands of years of historical accumulation and development, it has become the first pillar industry of Chaozhou.

Chaozhou ceramics can be said that the origin of the equal of the origin of Chinese ceramics, as early as six or seven thousand years ago the neolithic period, chaozhou ancestors have been able to produce engraved exquisitely patterned hard soft pottery, archaeological finds, chaozhou pottery handicrafts can be traced back to 4000 years ago before the tiger Po kiln, for guangdong artifacts of the most important places of pottery making, Chaozhou kiln in tang Dynasty developed from pottery to porcelain. The ceramic products produced by chaozhou ceramic industry in song Dynasty ranked first in terms of export scale, export potential and technical level in China, which had a strong demonstration and driving effect on the export of similar ceramic products in China.

Chaozhou ceramic products production has a history of thousands of years. After the founding of New China, Chaozhou, like Jingdezhen and other ceramic producing areas, formed a specific industrial agglomeration area. Since China's reform and opening up, checked out of chaozhou ceramic production areas near Hong Kong and Macao, and the advantages of the marketing channels, the ministry of foreign trade information driven by mechanism innovation in technology innovation and product development, make the ceramics industry rapid development, product export growth in the domestic similar products in the technology, in the domestic ceramic production areas plays a strong demonstration effect in driving, Our products occupy the largest market share among similar products in the international market.

Chaozhou ceramic industry cluster area mainly produces daily-use ceramics, arts and crafts ceramics, sanitary ceramics and special ceramics. The production area has formed the most complete and largest industrial chain of similar products in China. The number of manufacturing enterprises in the cluster ranks first in the domestic similar products, and the output and export volume of the four categories of products rank first in the domestic similar products, exceeding the output and export volume of the northern ceramic production areas in China. Chaozhou ceramic production cluster area in daily ceramics, arts and crafts ceramics, sanitary ceramics, special ceramics total varieties, up to 60% of the total varieties of similar products in China.

Chaozhou ceramics production area was the first to introduce the market economy model, with private economy accounting for more than 95%, which is the same as the industrial cluster model in Wenzhou, Zhejiang province. The marketing direction of Chaozhou ceramics production area is facing the world, and its products are sold to more than 160 countries and regions in the world. In terms of product development,

Chaozhou ceramics production area has integrated the cultures of different countries and nationalities in the world, developed products with different shapes, different decorations and different styles, and led the innovation and consumption trend of household ceramics in the world.

The technological level of chaozhou ceramics production area is in the advanced level of domestic industry. In energy saving and consumption reduction, equipment transformation, process innovation, product development and other aspects, has been in a leading position. The comprehensive strength and competitiveness of the production area are in the first place in the same industry in China.

For nearly 10 years, chaozhou ceramic production areas in China have been engaged in the three rounds of the comprehensive upgrading (from plant fuel, oil furnace to gas shuttle kiln, from the gas shuttle kiln to large gas tunnel kiln, from conventional combustion control to microcomputer combustion control, but also achieve the semi-automatic and fully automatic microcomputer control kiln).

The quality of chaozhou ceramic products has been stable and constantly improving. 70% of chaozhou ceramic products are exported, and a large proportion are sold to developed countries and regions such as Europe and America. The quality of chaozhou ceramic products strictly implements the access standards, so that the products can be exported smoothly. Chaozhou ceramic products take the lead in breaking through the technical barriers set up by the developed countries and regions led by the United States FDA in terms of technology and quality, including the lead and cadmium dissolution limits of daily ceramics, and have reached the access standards in an overall way. The government and quality supervision departments shall strengthen quality supervision by formulating internal standards for product control and risk early-warning mechanism, so that product quality can be controlled for a long time. For many years, chaozhou ceramic products have been exported smoothly in large quantities, and the complaint rate of product quality has decreased to 1/10,000.

At present, the city has more than 5000 ceramic manufacturers, and formed a complete industrial chain. It is the largest production area in China in terms of exports of ceramics, accounting for half of guangdong's exports of ceramics, and its products are well sold to more than 160 countries and regions in five continents. It is also the largest export base of daily porcelain and sanitary ware in China. It is one of the producing areas with strong innovation ability in China's ceramic industry, with more than 20,000 varieties being innovated every year. At present, chaozhou ceramic products have been awarded more than 150 national awards, ranking in the forefront of the major porcelain areas.

Chaozhou ceramics production area products include: daily ceramics, art ceramics, sanitary ceramics and special ceramics four categories. Among them, daily-use ceramics is the largest daily-use ceramics production area in China. Art ceramics and sanitary ceramics play an important role in the domestic industry[5]. The city has more than 5000 ceramic production enterprises, including more than 800 sanitary ceramics, 87 enterprises above scale, the total output of about 80 million pieces, the output value of more than 10 billion yuan, more than 300,000 employees, the GDP accounted for more than 40% of the national, export volume accounted for about 45% of the national; The total output of intelligent toilets exceeds 1 million sets, with an output value of nearly

3 billion yuan. The export volume of intelligent toilets is about 13,000 sets (excluding the production capacity of Country Garden, the world's largest intelligent bathroom production base), with a total export value of about 38 million yuan. The annual output value of special ceramics (mainly electronic ceramics produced by Sanhuan Group) is about 3 billion yuan, and the product technology and grade are in the leading position in China.

5 Main Problems Encountered in Chaozhou Ceramics Industry

1. high gas prices, gas at the end of 2020 per cubic metre of up to 4.40 yuan (3.30 yuan per cubic average annual natural gas), a first in the industry production prices, while the west to east gas transmission pipeline and cnoc paying outside guangdong LNG receiving station pipeline has been switched on, but the gas supply part, unable to enjoy the direct supply price advantage.
2. land, electricity, taxes, labor costs are higher than other production areas.
3. mineral materials procurement and processing does not form intensive management, affecting the stability of mineral source quality and procurement cost.
4. The personalized and irregular development of some ceramic products in Chaozhou has advantages in market competition, but there are objective obstacles and constraints in the popularization of product mechanization and automation.
5. Chaozhou ceramic development of traditional industries, to solve the employment of more than 400,000 people. Traditional ceramic industry is labor-intensive and has limited profit space. As the first pillar industry in Chaozhou, it has a heavy burden in supporting local finance and taxation.
6. The large number of small and micro enterprises seriously restricts the development of scale, industrialization and industrial upgrading. Labor, product quality and price confusion.

6 Opportunities and Challenges

The new era will usher in a new journey and a new mission. The development of Chaozhou is the epitome of the brilliant achievements of reform and opening up. Chaozhou today, tightly around the general secretary: "One Belt And One Road" strategy, to seize a large bay area of guangdong and shenzhen the first demonstration of socialism with Chinese characteristics to build a "double" major historical opportunity, strive to build the coastal economic belt characteristic high-quality goods city, as the team to build a well-off society in an all-round way, to contribute to achieve the first goal in one hundred. "Natural selection, survival of the fittest", as the national mandatory standard GB21252-2013 "the limitation of energy consumption per unit product on building and sanitary ceramics" push further intensified, and the state environmental protection policy of the contaminants on building and sanitary ceramics, white paper, published by the state requirements, to win the blue sky of guangdong province, one of the leading enterprises in the national defense, Guangdong Province will issue and formulate the Emission standards of Atmospheric pollutants for The Ceramic Industry in Guangdong

Province. The emission concentration limits of “particulate matter, sulfur dioxide and nitrogen oxide” in atmospheric pollutants are 30% lower than the national standard (effective from July 1, 2019), and the Work Plan of Guangdong Province to promote the withdrawal of backward production capacity in 2019 require, Sanitary ceramics industry, especially in chaozhou sanitary ceramics production area of Guangdong Province, there will be about 2000 small factories facing the crisis of being eliminated, and it is also an opportunity for sanitary ceramics enterprises above scale.

7 Conclusions

The current severe situation of ceramic industry is both a crisis and an opportunity. We should give full play to the differentiated characteristics of Chaozhou ceramic industry and vigorously develop the advantages of featured products. At the same time, we hope that the industry can integrate and disperse small-scale factories and workshops to form large-scale production, reduce the production of shuttle kiln, and vigorously expand the investment of large-scale wide-body tunnel kiln. We must give full play to the advantages of Chaozhou ceramic industry step by step, reduce energy consumption per unit product, improve product grade and added value, constantly innovate and develop, increase income and reduce expenditure. Finally, with the history of “Maritime Silk Road” and the strategy of “One Belt and One Road”, Chaozhou will bring unprecedented opportunities to build a 100-billion-yuan ceramic industry cluster, promote the high-quality development of the ceramic industry, polish the name card of “porcelain capital of China”, and achieve glory in the period of re-innovation.

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