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中国十五冶
15MCC

中国十五冶金建设集团有限公司

冶炼业务

China 15th Metallurgical Construction Group Co., Ltd.
Smelting Business



打造成为全球一流的铜冶炼工程企业

TO BECOME A FIRST-CLASS COPPER SMELTING ENGINEERING ENTERPRISE IN THE WORLD

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15MCC

About Us

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企业篇
About Us





中国十五冶
15MCC

Company Profile

企业简介

中国十五冶金建设集团有限公司（简称“中国十五冶”）成立于1953年，是中国有色矿业集团有限公司的全资子公司，下设35家分子公司。拥有冶金施工总承包特级资质；冶金行业、建筑行业（建筑工程）工程设计双甲资质；矿山工程、建筑工程、石油化工工程、机电安装工程、市政工程、电力工程、公路工程7项施工总承包壹级资质；隧道工程、地基基础工程、起重设备安装工程等21项专业承包资质；营业性爆破资质；对外经济合作经营资格。在30多个国家和地区设计、建设1000多个工程项目，荣获鲁班奖12项、国家级优质工程奖等工程奖项300多项，获得全国五一劳动奖状、全国优秀施工企业等企业奖项。荣登2023年度中国对外承包工程百强企业榜单，2024年度美国《工程新闻记录》（ENR）国际承包商第111位、全球承包商第235位，2023年ESG报告在金蜜蜂

Established in 1953, China 15 Metallurgical Construction Group Co. Ltd. (hereinafter referred to as "15MCC") is a wholly-owned subsidiary of China Nonferrous Metal Mining (Group) Co. Ltd. (hereinafter referred to as "CNMC"), and has 35 subsidiary companies. The company has the following qualifications, including special-grade qualification for engineering design of metallurgical construction general contracting; Grade A qualifications of metallurgy industry and building industry (Construction Project); first-level qualifications for construction general contracting of mining engineering, Construction Project, petrochemical engineering, mechanical and electrical installation engineering, municipal works, power engineering and highway engineering; professional contracting qualifications of 21 projects, such as tunnel engineering, foundation engineering and lifting appliance installation engineering; operating blasting construction qualification; foreign economic cooperation management qualification. Besides, the company has designed and constructed more than 1,000 engineering projects in more than 30 regions and countries, has won more than 300 engineering awards, including 12 China Construction Project Luban Prizes (National Quality Project), and many enterprise-level awards such as the National 5.1 Labor Medal and the National Excellent Construction Enterprise. It won the list of China's Top 100 Foreign Contractors in 2023, ranked 111th in international contractors and the 235th in global contractors in the Engineering News Record (ENR) of the United States in 2024, and rated as Level A (excellent) enterprise in the ESG report of 2023 in the Golden Bee Think Tank.

In the smelting industry, 15MCC has completed more than 180 smelting projects, such as copper, lead, zinc, nickel, aluminum, rare and precious metals, rare earth, iron and steel and metal processing; we have made

智库评定为A级（优秀）。

在冶炼领域，中国十五冶建成铜、铅、锌、镍、铝、稀贵金属、稀土、钢铁、金属加工等领域冶炼工程180余项，其中荣获新中国成立60周年百项经典暨精品工程1项，鲁班奖6项，国家、省部级优质工程奖110余项，创造了冶炼工程建设骄人业绩。

面向未来，中国十五冶坚持人才强企、科技兴企，围绕培育冶炼核心能力，大力引进博士等高端人才和学科带头人，针对核心工艺、核心装备开展科技攻关，不断增强设计、施工、采购、钢构、产业工人、数字化能力，致力成为全球一流的铜冶炼工程企业，为国内外客户提供更优质服务、创造更大价值！

outstanding achievements in smelting engineering construction, including one project winning the 100 Classic and Quality Projects in the 60th Anniversary of the Founding of New China, six Luban Awards, and more than 110 national, provincial and ministerial high-quality engineering awards.

Looking forward, 15MCC will adhere to the business philosophy of developing the enterprise by talents and science and technology. Focusing on the cultivation of smelting core capabilities, the company will vigorously introduce high-end talents such as doctors and discipline leaders to carry out scientific and technological research on core processes and equipment, and continuously strengthen its capabilities in design, construction, procurement, steel structure, industrial workers and digitalization, striving to become a first-class copper smelting engineering enterprise in the world and provide better service and create greater value for customers at home and abroad!



Company Profile/Qualifications

企业简介 / 资质证书 03/04

Qualifications

资质证书

设计咨询 Design Consulting Qualification

冶金行业设计·甲级

Grade A Qualification for Design in Metallurgical Industry

建筑行业(建筑工程)设计·甲级

Grade A Qualification for Design in Construction Industry (Construction Engineering)

地质灾害评估和治理工程设计·乙级

Grade B Qualification for Design in Geological Disaster Assessment and Control Engineering

冶金(含钢铁、有色)工程咨询·乙级

Grade B Qualification for Consulting in Metallurgical (including Steel and Nonferrous) Engineering

测绘资质 Surveying and Mapping Qualification

工程测量·乙级

Grade B Qualification for Engineering Survey

施工总承包 General Construction Contracting Qualifications

冶金工程·特级

Special Grade Qualification for General Contracting of Metallurgical Engineering

机电工程·壹级

First-Level Qualification for General Contracting of Electromechanical Engineering

建筑工程·壹级

First-Level Qualification for General Contracting of Construction Project

石油化工工程·壹级

First-Level Qualification for General Contracting of Petrochemical Engineering

电力工程·壹级

First-Level Qualification for General Contracting of Electric Power Engineering



专业施工 Professional Construction Qualifications

环保工程·壹级

First-Level Qualification for Environmental Protection Engineering

钢结构工程·壹级

First-Level Qualification for Steel Structure Engineering

地基基础工程·壹级

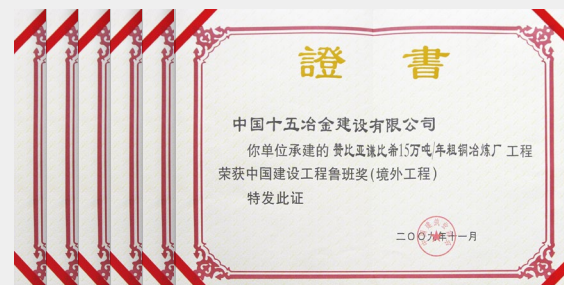
First-Level Qualification for Foundation Engineering

消防设施工程·壹级

First-Level Qualification for Fire Facility Engineering



Honors 荣誉奖项



中国建设工程鲁班奖12项
China Construction Project Luban Prize (12 prizes)



国家优质工程奖48项
National Quality Project Award (48 awards)



发明专利 (13项)
Patent for Invention (13 patents)



实用新型专利 (106项)
Patents for Utility Model (106 patents)

业绩篇

Performance



冶炼设计 SMELTING DESIGN

中国十五冶拥有设计双甲级资质：冶金行业甲级设计资质、建筑行业（建筑工程）甲级设计资质；设计完成赤峰大井子锡业精锡冶炼（1万t/a）工程、云南铜业冶炼中试基地技改项目（6万t/a）、刚果（金）Kambove湿法炼铜项目（阴极铜2.8万t/a，钴1kt/a）、中色华鑫湿法冶炼有限公司阴极铜项目（阴极铜2万t/a，钴1kt/a）、刚果（金）Panda尾矿资源综合回收项目（阴极铜2万t/a，钴0.5kt/a）及MJM湿法铜钴项目（阴极铜2万t/a，钴2kt/a），具备火法、湿法冶炼工程设计能力。承担设计的《刚波夫矿业有限公司刚果（金）Kambove主矿床湿法炼铜项目》集采、选、冶、尾矿工程为一体，原石处理能力99万吨/年，荣获2020年度有色金属建设行业（部级）优秀工程咨询成果一等奖。

2008年至今，承担冶金工程类项目100余项，其中，获得省部级优秀工程咨询成果奖6项，省部级优秀工程设计奖7项，获得省部级科技进步奖2项。

15 MCC has Grade A Design Qualification of Metallurgical Industry and Grade A Design Qualification of Construction Industry (Construction Engineering), and has designed the following projects: Refined Tin Smelting Project of Chifeng Dajingzi Fine Tin Co., Ltd. (10000 t/a), Technical Transformation Project for Smelting Pilot Base of Yunnan Copper Industry (60,000 t/a), Kambove Copper Hydrometallurgy Project, Democratic Republic of the Congo (cathode copper, 28,000 t/a; cobalt, 1000 t/a), Cathode Copper Project of Huachin Leach Metal SA (cathode copper, 20,000 t/a; cobalt, 1000 t/a), Panda Tailing Resource Comprehensive Recovery Project (cathode copper, 20,000 t/a; cobalt, 500 t/a), Democratic Republic of the Congo, and the MJM Copper-Cobalt Hydrometallurgy Project (cathode copper, 20,000 t/a; cobalt, 2000 t/a); the company has the with the capabilities in design of pyrometallurgy and hydrometallurgy smelting engineering. The Kambove Mining SAS' Kambove Copper Hydrometallurgy Project, Democratic Republic of the Congo, designed by our company, integrates mining, mineral processing, melting and tailing engineering as a whole, and has a raw ore processing capacity of 990,000 tons/year, and won the First Prize of Outstanding Engineering Consulting Achievements in the non-ferrous metal construction industry (ministerial level) in 2020. Since 2008, our company has undertaken more than 100 metallurgical projects, including 6 provincial and ministerial excellent engineering consulting achievement awards, 7 provincial and ministerial excellent engineering design awards, and 2 provincial and ministerial scientific progress awards.

刚果(金)Kambove主矿床湿法炼铜项目

Kambove Main Mineral Deposit Copper Hydrometallurgy Project, Democratic Republic of the Congo



- 该项目集采、选、冶和尾矿工程为一体，原石处理能力99万吨/年。
- 荣获2020年度有色金属建设行业（部级）优秀工程咨询成果一等奖；
- 2020年度辽宁省工程咨询协会优秀工程咨询成果三等奖；
- 2022年度有色金属建设行业优秀工程设计二等奖。

- The project, integrates mining, mineral processing, melting and tailing engineering as a whole, and has a raw ore processing capacity of 990,000 tons/year
- Won the First Prize of Outstanding Engineering Consulting Achievements in the non-ferrous metal construction industry (ministerial level) in 2020;
- Third Prize of Excellent Engineering Consulting Achievement issued by the Liaoning Engineering Consulting Association in 2020;
- Second Prize of Excellent Engineering Design in Non-Ferrous Metal Construction Industry in 2022.



刚果(金)MJM科卢湿法炼铜项目

MJM Kolwezi Copper Hydrometallurgy Project, Democratic Republic of the Congo



- 该项目规模：年产阴极铜25kt，粗制氢化钴金属量1kt，年处理原矿石950kt；
- 主要工艺：原料准备—萃取、电积—萃余液净化；
- 破碎工艺采用一段开路破碎，磨矿工艺采用两段连续闭路磨矿，原矿经过破碎、磨矿、两段脱水后再经过两段搅拌浸出、两段液固分离、四段逆流洗涤工艺得到浸出液。
- 萃取采用2级串联高铜萃取，2级串联低铜萃取，1级洗涤，2级反萃，有机相与水相逆流萃取。
- 萃余液依次经过加石灰石除铁，加石灰乳除铜，加氧化镁沉钴，加石灰乳二段沉钴工序生产粗制氢氧化钴，再经过闪蒸干燥得到副产品粗制氢氧化钴。

- Project scale: Annual output of cathode copper, 25000 tons; annual output of crude cobalt hydride metal, 1000 tons; annual processing capacity of raw ore, 950,000 tons;
- Main processes: raw material preparation - extraction, electrodeposition - raffinate purification;
- The crushing process adopts one-stage open circuit crushing method, the grinding process adopts two-stage continuous closed circuit grinding method, and the raw ores is processed through crushing, grinding, two-stage dehydration, two-stage stirring and leaching, two-stage liquid-solid separation and four-stage counter-current washing to obtain the leaching solution.
- Extraction methods: Two-stage series high copper extraction, two-stage series low copper extraction, one-stage washing, two-stage back extraction, organic phase and water phase countercurrent extraction.
- After iron removal by adding limestone, copper removal by adding lime milk, cobalt deposition by adding magnesium oxide and secondary cobalt deposition by adding lime milk, coarse cobalt hydroxide can be obtained from the raffinate and then the by-product coarse cobalt hydroxide can be obtained through flash drying.

中色华鑫刚果(金)5000t/a湿法炼铜项目

5000 t/a Congo Copper Hydrometallurgy Project of Huachin Leach Metal SA



- 该项目规模：年处理尾矿砂165kt，产品含铜金属量约5000t。
- 主要工艺：物料准备工艺流程确定采用一段破碎一段磨矿连续浸出；
- 萃取采用了成熟的2级萃取；
- 本项目2012年初实施后第一年即达产。
- 荣获2012年度中国有色金属建设协会部级优秀工程设计一等奖。

- Project scale: Annual processing capacity of tailings, 165,000 tons, and the copper metal content of product, about 5000 tons.
- Main processes: Material preparation process, adopting one-stage crushing, one-stage grinding, and continuous leaching processes;
- Mature two-stage extraction process used;
- The project reaches the design production capacity in the first year after implementation in early 2012.
- Won the First Prize of Ministerial Outstanding Engineering Design issued by the China National Association for Non-Ferrous Metal Industries Construction in 2021;

内蒙古金同工业10万吨铜及系列产品深加工项目（底吹熔炼）

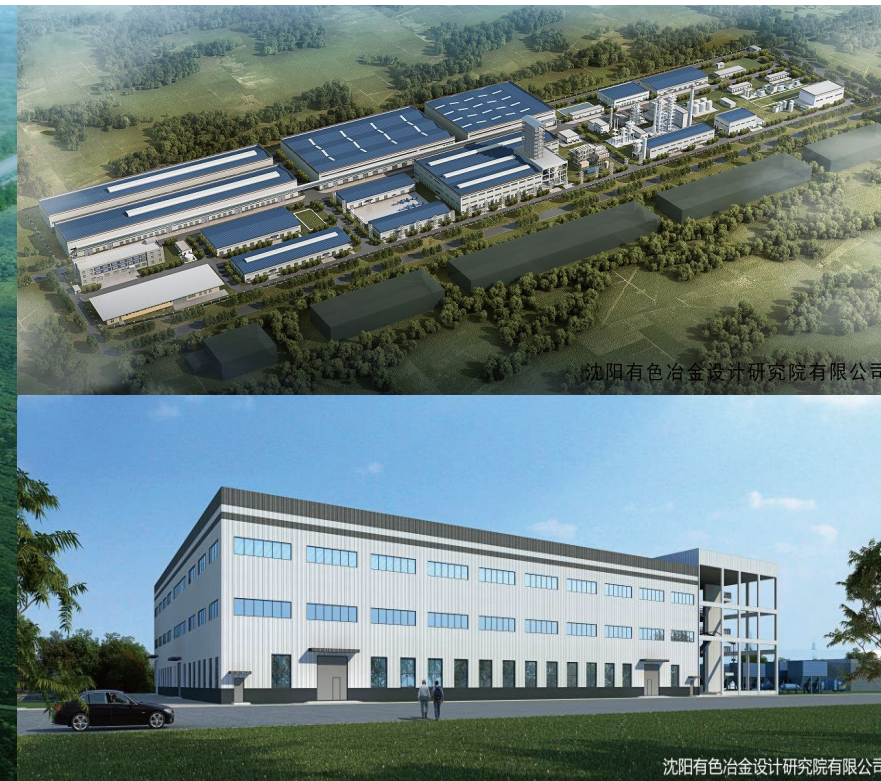
100000 Tons of Copper Series Product Deep Processing Project of Inner Mongolia Jintong Nonferrous Industry Co., Ltd. (bottom-blown smelting)



- 该项目规模：年处理铜精矿487kt，产品年产10万t。
- 主要工艺：氧气底吹炉熔炼--转炉吹炼--倾斜式阳极炉精炼--不锈钢阴极电解
- 本项目实施后年产阴极铜产量可达10万t，硫酸40万t。
- Project scale: Annual processing capacity of copper concentrate, 487,000 tons; annual output, 100,000 tons.
- Main processes: oxygen bottom-blown melting in furnace -- blowing in converter -- refining in tilting anode furnace -- stainless steel cathode electrolysis
- After the project was put in use, the annual outputs of cathode copper and sulfuric acid can reach 100,000 t and 400,000 t respectively.

河北邢台松赫环保年处置30万吨废蓄电池及含铅废物综合利用项目

Waste Battery and Lead-Containing Waste Comprehensive Utilization Project (Annual Processing Capacity of 300,000 tons) of Xingtai Songhe Environmental Protection Technology Co., Ltd.



- 本项目年处理30万吨废蓄电池及含铅废物，主要产品产量：精铅(99.5%Pb)50000t/a，铅合金50000t/a，还原铅98268.72t/a，铅零件5000t/a，PVC塑料颗粒38573t/a。
- 通过对废铅酸蓄电池的回收拆解得到板栅、铅膏、塑料等原料，其中铅膏采用富氧侧吹炉熔炼+精炼工艺产出精铅或铅合金产品，板栅采用低温熔炼技术生产还原铅，部分合金生产铅零件，同时回收塑料、硫酸等副产品。
- The project can process 300,000 tons of waste batteries and lead-containing waste every year, including 50000 t/a refined lead (99.5% Pb), 50000 t/a lead alloy, 98268.72 t/a reduced lead, 5000 t/a lead parts, and 38573 t/a PVC plastic particles.
- Raw materials such as grids, lead paste and plastics are obtained by recycling and disassembling waste lead-acid batteries; among them, the lead paste is used to produce refined lead or lead alloy products through oxygen-rich side-blown furnace smelting and refining process, grids are used to produce reduced lead with low-temperature smelting technology, and some alloys are used to produce lead parts, and by-products such as plastics and sulfuric acid are recovered.

辽宁远东铜业10万吨粗铜技改工程（侧吹熔炼）

100,000 Tons of Crude Copper Technological Transformation Project of Liaoning Fareast Copper Industry Co., Ltd. (side-blown smelting)

- 主要工艺：本项目采用富氧侧吹炉熔炼--转炉吹炼--冶炼渣浮选冶炼工艺；
- 效果：改造后工艺顺畅，产量达标。

- Main processes: This project adopts the oxygen-rich side-blown furnace melting -- blowing in converter -- smelting slag flotation smelting processed;
- Results: After the transformation, the process is smooth and the output reaches the design standard.



赤峰大井子锡冶炼1万t/a项目

10000 t/a Tin Smelting Project of Chifeng Dajingzi Fine Tin Co., Ltd.

- 本项目采用回转窑焙烧--电炉熔炼--火法精炼--烟化炉炼渣工艺流程，年产10000吨精锡。是我国北方最大的锡冶炼生产厂。
- The project adopts the following process flow: roasting in rotary kiln -- smelting in electric furnace -- pyrometallurgy refining -- slag smelting in furning furnace, and is the largest tin smelting and production plant in North China with an annual output of 10,000 tons of refined tin.



东北特钢林西金域钼制品有限公司1万t/a钼铁合金工程

10000 t/a Ferro-Molybdenum Project of Linxi Jinyu Molybdenum Products Co., Ltd., Northeast Special Steel Group

• 本项目采用回转窑焙烧--硅热金属热还原法生产钼铁的工艺，年产10000吨钼铁。是国内较大的的钼铁冶炼生产厂之一。

• The project adopts the roasting in rotary furnace - silicothermic and metallothermic reduction process to produce ferro-molybdenum products, and is one of the largest ferro-molybdenum smelting and production plants in China with an annual output of 10,000 tons of ferro-molybdenum.



吉林博研新材料有限公司 新能源材料项目

New Energy Material Project of Jilin Boyan New Material Co., Ltd.

• 该项目规模：年产铝挤压材40000t，铜材20000t。
• 承建了包括熔铸车间、铝挤压车间、铝深加工车间、铜材车间、镍材车间（厂房）及配套设施等建筑与安装工程施工

• Project scale: Annual outputs of aluminum extrusion and copper, 40000 t and 20000 t, respectively.
• Including the construction and installation works of casting workshop, aluminum extrusion workshop, aluminum deep processing workshop, copper workshop, nickel workshop (workshop) and supporting facilities



近年典型工程业绩

Typical Project Cases in Recent Years

序号 No.	项目名称 Project Name	年产量/处理量 Annual Output Processing Capacity	项目地点 Project Location	竣工时间 Completion Date
1	刚果共和国明杜利铜矿年产30万吨湿法阴极铜项目 Annual Output of 300,000 Tons Cathode Copper Hydrometallurgy Project of Mingdouli Copper Mine in Republic of the Congo	30万吨/年 300,000 tons/ year	刚果布 Republic of the Congo	2011年
2	东营鲁方金属材料有限公司20万吨/年铜电解工程 The 200,000 Tons/ Year Copper Electrolysis Project of Dongying Lufang Metal Materials Co., Ltd.	20万吨 200,000 tons/ year	山东省东营市 Dongying City, Shandong Province	2009年
3	辽宁远东铜业10万吨/年电解铜技改工程项目 100,000 Tons/ Year Electrolytic Copper Technological Transformation Project of Liaoning Fareast Copper Industry Co., Ltd.	10万吨/年 100,000 tons/ year	辽宁省阜新市 Fuxin City, Liaoning Province	2012年
4	沈阳联立铜业有限公司10万吨/年阳极铜冶炼工程 100,000 Tons/ Year Anode Copper Smelting Project of Shenyang Lianli Copper Industry Co., Ltd.	10万吨/年 100,000 tons/ year	辽宁省沈阳市 Shenyang City, Liaoning Province	2011年
5	刚果金Kambove主矿床湿法炼铜项目 Kambove Main Mineral Deposit Copper Hydrometallurgy Project, Democratic Republic of the Congo	3万吨/年 30,000 tons/ year	刚果金 Democratic Republic of the Congo	2018年
6	刚果（金）MJM科卢湿法炼铜项目 MJM Kolwezi Copper Hydrometallurgy Project, Democratic Republic of the Congo	2.5万吨/年 25,000 tons/ year	刚果金 Democratic Republic of the Congo	2021年
7	中色华鑫年产20kt阴极铜改扩建项目 20000 t/ year Cathode Copper Renovation and Extension Project of Huachin Leach Metal SA	2万吨/年 20,000 tons/ year	刚果金 Democratic Republic of the Congo	2017年
8	赞比亚牛油果矿业有限公司20kt/a铜冶炼制酸厂、中心化验室工程 20000 t/a Copper Smelting and Acid Plant and Central Laboratory Project of Zambia Avocado Mining Limited	2万吨/年 20,000 tons/ year	赞比亚 Zambia	2024年
9	刚果（金）里卡西10000t/a阴极铜湿法冶炼技改工程 10,000 t/a Cathode Copper Hydrometallurgy Technological Transformation Project of Likasa, Republic of the Congo	1万吨/年 10,000 tons/year	刚果金 Democratic Republic of the Congo	2012年
10	中色华鑫刚果（金）5000t/a湿法炼铜项目 5000 t/a Congo Copper Hydrometallurgy Project of Huachin Leach Metal SA	0.5万吨/年 5000 tons/year	刚果金 Democratic Republic of the Congo	2010年
11	刚果金Panda 尾矿资源综合回收项目 CNMC's Panda Tailing Resource Comprehensive Recovery Project, Democratic Republic of the Congo	0.8万吨/年 8,000 tons/ year	刚果金 Democratic Republic of the Congo	2016年
12	喀左金利源矿业有限公司5万吨/a镍基料项目 50,000 t/a Nickel Base Material Project of Kazuo Jinliyuan Mining Co., Ltd.	5万吨/年 50,000 tons/year	辽宁省朝阳市 Chaoyang City, Liaoning Province	2012年
13	东北特钢林西金域钼制品有限公司1万吨/年钼铁合金工程项目 10000 t/a Ferro-Molybdenum Alloy Project of Linxi Jinyu Molybdenum Products Co., Ltd., Northeast Special Steel Group	1万吨/年 10,000 tons/ year	内蒙古赤峰市 Chifeng City, Inner Mongolia	2010年
14	伊春金林铅冶炼有限公司8万吨/年电铅冶炼工程项目 80,000 tons/year Electric Furnace Lead Smelting Project of Yichun Jinlin Lead Smelting Co., Ltd.	8万吨/年 80,000 tons/ year	黑龙江省伊春市 Yichun City, Heilongjiang Province	2023年
15	赤峰大井子锡冶炼1万吨/年项目 10000 t/a Tin Smelting Project of Chifeng Dajingzi Fine Tin Co., Ltd.	1万吨/年 10,000 tons/year	内蒙古赤峰市 Chifeng City, Inner Mongolia	2018年
16	内蒙金同工业10万吨铜及系列产品深加工项目 100000 Tons of Copper Series Product Deep Processing Project of Inner Mongolia Jintong Nonferrous Industry Co., Ltd. (bottom-blown smelting)	10万吨/年 100,000 tons/ year	内蒙古乌兰浩特市 Ulanhot Shi, Inner Mongolia	2012年
17	中色天津新材料产业园项目 CNMC Tianjin New Material Industrial Park Project	铝挤压材4万吨/年 铜材2万吨/年 Aluminum extrusion: 40,000 tons/ year; copper: 20,000 tons/ year	天津市 Tianjin	2010年
18	锦州金圆环保科技有限公司40万吨/年固危废高值化综合利用项目 400,000 tons/year Solid Hazardous Waste High Value Comprehensive Utilization Project of Jinzhou Jinyuan Environmental Protection Technology Co., Ltd.	年处理量40万吨/年 Processing capacity of 400,000 tons/ year	辽宁省锦州市 Jinzhou City, Liaoning Province	2020年
19	河北邢台松赫环保年处置30万吨废旧电池及含铅废物综合利用项目 Waste Battery and Lead-Containing Waste Comprehensive Utilization Project (Annual Processing Capacity of 300,000 tons) of Xingtai Songhe Environmental Protection Technology Co., Ltd.	年处理量30万吨/年 Processing capacity of 300,000 tons/ year	河北省邢台市 Xingtai City, Hebei Province	2018年
20	山东中庆环保科技有限公司技改30万吨/年废蓄电池综合利用项目 300,000 tons/year Waste Battery Technical Transformation and Comprehensive Utilization Project of Shandong Zhongqing Environmental Protection Technology Co., Ltd.	年处理量30万吨/年 Processing capacity of 300,000 tons/ year	山东省临沂市 Linyi City, Shandong Province	2020年
21	通辽泰鼎有色金属有限公司15万吨/年废旧电池综合回收利用工程 150,000 tons/year Waste Battery Comprehensive Recycling Project of Tongliao Taiding Non-ferrous Metal Co., Ltd.	年处理量15万吨/年 Processing capacity of 150,000 tons/ year	内蒙古通辽市 Tongliao City, Inner Mongolia	2018年

公司在冶炼行业不断创造着全国和世界记录。建成了国内首个现代化冶炼厂（贵溪冶炼厂），世界最先进的双闪工艺铜冶炼厂（弘盛铜业）；安装了国内首台冶炼倾动炉（贵冶三期）、最大的铜冶炼转炉（贵冶30万吨）、最大的红土镍矿矿热炉（滨海镍业），世界最大的阳极炉（祥光铜业）；创造了国内圆坯连铸机最大规格新纪录（淮阴钢铁）、工业厂房结构跨度新纪录（新余钢铁），世界最长双层硅钢退火炉新纪录（武钢）、世界最大干熄焦装置新纪录（京唐钢铁）。获得鲁班奖6项（贵冶“两炉一机”、赞比亚谦比希15万吨粗铜冶炼厂、刚果（金）华刚铜钴矿、刚果（金）希图鲁湿法冶炼厂、缅甸达贡山镍矿、缅甸蒙育瓦莱比塘铜矿）。

The company continues to set national and world records in the smelting industry, such as building the first modern smelter in China (Guixi Smelter), the world's most advanced double-flash process copper smelter (Hongsheng Copper Industry); installing the first domestic smelting tilting furnace (Phase III Project of Guixi Smelter), the largest copper smelting converter (300,000 tons project of Guixi Smelter), the largest laterite nickel ore heating furnace (Binhai Nickel Industry), the world's largest anode furnace (Xiangguang Copper Industry); creating a new record for the largest-specification round billet continuous casting machine (Jiangsu Huaiyin Iron and Steel Co., Ltd.), a new record for the structure span of industrial plant (Xinyu Iron and Steel), a new record for the world's longest double-layer silicon steel annealing furnace (WisCO), and a new record for the world's largest dry quenching device (Jingtang Iron and Steel). Besides, the company won six Luban Awards (including "Two furnaces and one casting system" of Guixi Smelter, 150,000 tons crude copper smelter in Chambishi, Zambia, Huagang Copper-Cobalt Mine in Democratic Republic of the Congo, Hitulu wet smelter in Democratic Republic of the Congo, Tagaung Taung Nickel Mine in Myanmar, and Monywa Letpadaung Copper Mine in Myanmar).

火法冶炼 PYROMETALLURGY

黄石阳新弘盛40万吨高纯阴极铜清洁生产EPC项目

The 400,000 Tons High-Purity Cathode Copper Clean Production EPC Project of Huangshi Yangxin Hongsheng Copper Industry Co., Ltd.



- 引进世界一流的“双闪工艺”，依托工业互联网+，是一座环保优良、技术先进的现代化智能工厂
- 年处理铜精矿160万吨，年产高纯阴极铜40万吨、硫酸150万吨
- 铜冶炼全流程覆盖

- The company has introduced the first-class "double-flash process" in the world, and is a modern intelligent factory based on industrial Internet + with excellent environmental protection performance and advanced technologies
- Annual processing capacity of copper concentrate: 1.6 million tons; annual output of high-purity cathode copper: 400,000 tons; annual output of sulfuric acid: 1.5 million tons
- Covering the whole copper smelting process



铜陵有色绿色智能铜基新材料项目(50万吨)

Green Intelligent Copper-Based New Material Project (500,000 tons) of Tongling Nonferrous Metals Group Co., Ltd.

- 主产品年产高端铜杆线材50万吨，其中高导电铜材38.5万吨，高导电铜线11.5万吨
- 现代化绿色、智能工厂
- Main products: Annual output of 500,000 tons of high-end copper rods/wires, including 385,000 tons of high-conductivity copper and 115,000 tons of high-conductivity copper wires
- Modern, green and intelligent plant



广西南南国铜业40万吨铜冶炼综合回收及节能环保升级改造项目

The 400,000 Tons Copper Smelting Comprehensive Recovery and Energy-Saving Environmental Protection Upgrading and Reconstruction Project of Guangxi Nanko Copper Company Limited

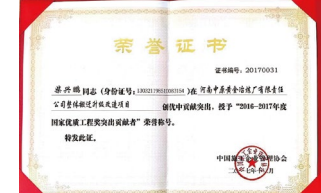
- 所有桩基工程较业主节点提前两天完成，并一次性通过试验检测。
- 熔炼系统由一台反应区面积为72.9m²的侧吹炉和120m²的顶吹炉组成，此40万吨铜冶炼是目前世界上侧加顶工艺单线系统最大的炉窑。
- All pile foundation projects can be completed two days ahead of the owner's construction period, and pass the test and acceptance at one time.
- The smelting system consists of a side-blown furnace with a reaction area of 72.9 m² and a top-blown furnace of 120 m². The 400,000 tons copper smelting project is the largest furnace with a single production line system with side and top-blown processes in the world.



河南中原黄金冶炼厂升级搬迁改造项目

Upgrade and Relocation Reconstruction Project of Henan Zhongyuan Gold Smelter

- 两台阳极炉单体长15米、直径4.5米，重130吨，为吊装最大设备。
- 年处理混合金精矿150万吨、产金36吨、产银220吨、产铜 21 万吨。
- Two anode furnaces, 5 m in length, 4.5 m in diameter and 130 tons in weight, are the largest lifting equipment.
- Annual processing capacity of 1.5 million tons of mixed alloy concentrate, including 36 tons of gold, 220 tons of silver and 210,000 tons of copper.



云南驰宏锌锗会泽16万吨铅锌技改工程及渣综合利用项目

The 160,000 Tons Lead and Zinc Technological Transformation Project and Slag Comprehensive Utilization Project of Huize Branch, Yunnan Chihong Zinc & Germanium Co., Ltd.



- 世界上第一家成功应用艾萨炉炼铅。
- 国内第一家成功运用长周期—大极板—自动剥锌技术。
- 年产6万吨粗铅、10万吨电锌、硫酸24万吨，处理30万吨综合渣。



- The first successful application of Essa furnace in lead smelting industry in the world.
- The first company which successfully applied the long cycle - large plate - automatic zinc stripping technology in China.
- Annual output of 60,000 tons of crude lead, 100,000 tons of electrolytic zinc, 240,000 tons of sulfuric acid, and annual processing capacity of 300,000 tons of comprehensive slag.



重钢环保搬迁工程烧结和炼钢项目

Relocation Project-- Sintering and Steelmaking Project of Chongqing Environmental Protection Investment Group Co., Ltd., Chongqing Iron & Steel Co., Ltd.



- 此烧结生产线建设的完整性、先进性，开创公司安装任务先河。
- 两台350吨行车安装记录在公司内名列前茅。
- 凭借与重钢集团良好的合作关系，该项目实现了滚动发展，承接后需3#烧结项目。
- 2010年度提高大面积混凝土地坪施工合格率荣获全国优秀QC成果三等奖。

- The integrity and advancement of the construction of the sintering production line creates a precedent for the company's installation tasks.
- The installation by two 350 tons driving cranes leads the company-level installation field.
- Due to a good cooperative relationship with Chongqing Iron & Steel Co., Ltd., the project has achieved rolling development, and have undertaken 3# sintering projects.
- In 2010, the project of improving the pass rate of large-area concrete floor construction won the third prize of national excellent QC achievements.



缅甸达贡山镍矿项目

Tagaung Taung Nickel Mine Project in Myanmar



- 中缅两国矿产领域合作中唯一投产运营的项目。
- 集采、选、冶于一体的特大型镍铁冶炼项目。
- 自主研究设计、拥有自主知识产权的电炉法治炼技术。

- It is the only project put into operation in the mineral resource cooperation between China and Myanmar.
- An extra-large nickel-iron smelting project integrating mining, selection and smelting into one.
- Electric furnace smelting technology independently researched and designed with independent intellectual property rights.

印尼阿曼年产23万吨铜冶炼项目

Annual Output of 230,000 Tons Copper Smelting Project in Oman, Indonesia



- 项目坐落在雅加达以东1530公里的西努沙登加拉省松巴哇岛。
- 该项目采用世界领先的“闪速熔炼+闪速吹炼”铜冶炼工艺，是全球第七套采用“双闪”工艺的铜冶炼项目，处理规模为900kt/a铜精矿，年产阴极铜23万吨，副产硫酸81.5万吨。

- The project is located on Sumbawa Island, West Nusa Tenggara Province, 1530 km east of Jakarta.
- The project adopts the world's leading "flash smelting + flash blowing" copper smelting technology, is the copper smelting project using the world's seventh "double flash" process with the processing capacity of 900,000 t/a copper concentrate, an annual output of 230,000 tons of cathode copper, and 815,000 tons of sulfuric acid by-product.

近年典型工程业绩

Typical Project Cases in Recent Years

序号 No.	项目名称 Project Name	规模 Scale	项目地点 Project Location	竣工时间 Completion Date
1	铜陵有色绿色智能铜基新材料项目 Green Intelligent Copper-Based New Material Project of Tongling Nonferrous Metals Group Co., Ltd.	50万吨 500, 000 tons	安徽省铜陵市 Huangshi City, Hubei Province	2024年
2	阳新弘盛40万吨高纯阴极铜清洁生产项目 The 400,000 tons High-Purity Cathode Copper Clean Production Project of Huangshi Yangxin Hongsheng Copper Industry Co., Ltd.	40万吨 400, 000 tons	湖北省黄石市 Huangshi City, Hubei Province	2023年
3	山东阳谷祥光铜业有限公司年产40万吨阴极铜 Annual Output of 400,000 Tons of Cathode Copper of Shandong Yanggu Xiangguang Copper Co., Ltd.	40万吨 400, 000 tons	山东省聊城市 Liaocheng City, Shandong Province	2011年
4	中铝东南铜业有限公司铜冶炼基地项目工程总承包建筑及安装工程 Chinalco Southeast Copper Industry Co., Ltd. -- Copper Smelting Base Project -- General Contracting Construction and Installation Project	40万吨 400,000 tons	福建省宁德市 Ningde City, Fujian Province	2018年
5	赤峰金剑铜业铜冶炼工艺升级搬迁改造项目 Copper Smelting Process Upgrade and Relocation Reconstruction Project of Chifeng Jinjian Copper Co., Ltd.	40万吨 400, 000 tons	内蒙古赤峰市 Chifeng City, Inner Mongolia	2020年
6	铜陵有色铜冶炼工艺技术升级改造项目 Copper Smelting Technological Upgrade and Reconstruction Project of Tongling Nonferrous Metals Group Co., Ltd.	40万吨 400, 000 tons	安徽省铜陵市 Tongling City, Anhui Province	2012年
7	广西南国铜业有限责任公司400kt/a铜冶炼综合回收及节能环保升级改造程 The 400,000 t/a Copper Smelting Comprehensive Recovery and Energy-Saving Environmental Protection Upgrading and Reconstruction Project of Guangxi Nanko Copper Company Limited	40万吨 400, 000 tons	广西崇左市 Chongzuo City, Guangxi Province	2023年
8	刚果金LCS年处理400kt铜精矿（干）粗铜冶炼项目建筑及安装工程施工 Construction and Installation Engineering Construction Project of LCS Crude Copper Smelting Project with Annual Processing Capacity of 400,000 t Copper Concentrate (Dry), Democratic Republic of the Congo	40万吨 400, 000 tons	刚果(金) Democratic Republic of the Congo	2020年
9	铜陵金隆冶炼厂35万吨挖潜技改项目 The 350,000 Tons Potential Tapping and Technological Transformation Project of Tongling Jinlong Smelter	35万吨 350, 000 tons	安徽省铜陵市 Tongling City, Anhui Province	2011年
10	贵溪冶炼厂江铜30万吨铜冶炼安装项目 Jiangtong Jiangxi Copper Corporation-- 300,000 Tons Copper Smelting Installation Project in Guixi Smelter	30万吨 300, 000 tons	江西省鹰潭市 Yingtian City, Jiangxi Province	2009年
11	广西梧州年产30万吨再生铜冶炼项目 Wuzhou 300,000 tons/ year Recycled Copper Smelting Project, Guangxi	30万吨 300, 000 tons	广西梧州市 Wuzhou City, Guangxi Province	2012年
12	贵溪冶炼厂两炉一机项目 "Two Furnaces and One Casting System" Project of Guixi Smelter	30万吨 300, 000 tons	江西省鹰潭市 Yingtian City, Jiangxi Province	1995年 
13	印尼阿曼年产23万吨铜冶炼项目 Annual Output of 230,000 Tons Copper Smelting Project in Oman, Indonesia	23万吨 230, 000 tons	印度尼西亚 Indonesia	2024年
14	金隆21万吨扩建改造项目 The210,000 Tons Expansion and Renovation Project of Tongling Jinlong Smelter	21万吨 210, 000 tons	安徽省铜陵市 Tongling City, Anhui Province	2005年

近年典型工程业绩

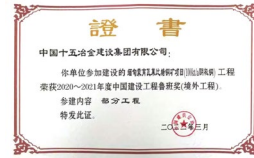
Typical Project Performance in Recent Years

序号 S/N	项目名称 Project name	年产量/处理量 Annual production processing capacity	项目地点 Project location	竣工时间 Completion date
15	大冶有色铜冶炼节能减排改造项目 Copper Smelting Energy-Saving and Emission Reduction Renovation Project of China Daye Non-Ferrous Metals Mining Limited	20万吨 200, 000 tons	湖北省黄石市 Huangshi City, Hubei Province	2010年
16	紫金铜业有限公司20万吨/年铜冶炼项目 The 200000 tons/year Copper Smelting Project of Zijin Copper Smelter	20万吨 200, 000 tons	福建省龙岩市 Longyan City, Fujian Province	2013年
17	赞比亚谦比希15万吨/年粗铜冶炼厂项目 The 150,000 Tons Crude Copper Smelter Project in Chambishi, Zambia	15万吨 200, 000 tons	赞比亚 Zambia 	2009年
18	富邦铜业节能减排技术升级项目 Energy-Saving and Emission Reduction Technical Renovation Project of Fubang Copper Industry	10万吨 100, 000 tons	内蒙古赤峰市 Chifeng City, Inner Mongolia	2024年
19	云南驰宏锌锗股份有限公司会泽16万t/a铅锌技改工程 The 160,000 t/a Lead and Zinc Technological Transformation Project and Slag Comprehensive Utilization Project of Huize Branch, Yunnan Chihong Zinc & Germanium Co., Ltd.	16万吨 160, 000 tons	云南省曲靖市 Qujing City, Yunnan Province	2012年
20	江西铜业集团公司100kt/a铅冶炼项目建安工程 Jiangxi Copper Corporation -- The 100, 000 t/a Lead Smelting Project-- Construction and Installation Project	10万吨 100, 000 tons	江西省九江市 Jiujiang City, Jiangxi Province	2011年
21	内蒙古赤峰中色锌业10万t/a锌项目 The 100,000 t/a Zinc Project of Chifeng CNMC Zinc Industry Co., Ltd. in Inner Mongolia	10万吨 100, 000 tons	内蒙古赤峰市 Chifeng City, Inner Mongolia	2011年
22	河南省灵宝市华宝产业有限责任公司年产10万吨粗铅富氧闪速铅冶炼项目 The 100,000 tons/ year Crude Lead Enriched Oxygen Flash Lead Smelting Project of Henan Lingbao City Huabao Industry Co., Ltd.	10万吨 100, 000 tons	河南省灵宝市 Lingbao City, Henan Province	2008年
23	云南会泽16万t/a铅锌技改项目 The 160,000 t/a Lead and Zinc Technical Transformation Project of Huize Branch, Yunnan Chihong Zinc & Germanium Co., Ltd.	16万吨 160, 000 tons	云南省曲靖市 Qujing City, Yunnan Province	2012年
24	缅甸达贡山镍矿项目 Tagaung Taung Nickel Mine in Myanmar	8.5万吨 85, 000 tons	缅甸 Myanmar	2010年
25	印尼纬达贝青山钢铁年产30万吨镍铁火法线项目 The 300,000 tons/year Nickel-Iron Pyrometallurgy Production Line Project of Indonesia PT Weda Bay Iron and Steel Co., Ltd.	30万吨 300, 000 tons	印度尼西亚 Indonesia	2020年
26	中宝滨海镍业年产8万吨镍铁项目 The 80,000 tons/ year Nickel-Iron Project of Zhongbao Binhai Ferro-Nickel Co., Ltd.	8万吨 800, 000 tons	河北省沧州市 Cangzhou City, Heibei Province	2012年
27	吉恩镍业15Kt/a技术改造工程 The 15, 000 t/a Technical Transformation Project of Jilin JIEN Nickel Industry Co., Ltd.	1.5万吨 15, 000 tons	吉林省磐石市 Panshi City, Jilin Province	2008年
28	广西金源镍业有限公司5.2万吨金属镍项目建筑工程及电炉相关设备制安工程 Guangxi Jinyuan Nickel Industry Co., Ltd.--The 52,000 Tons Metal Nickel Project -- Construction Engineering and Electric Furnace Related Equipment Production and Installation Works	5.2万吨 52,000 tons	广西省佛山市 Foshan City, Guangxi Province	2012年
29	兰州连城铝厂扩建项目 Expansion Project of Lanzhou Liancheng Aluminum Industry Co., Ltd.	23万吨 230,000 tons	甘肃省兰州市 Lanzhou City, Gansu Province	2003年
30	内蒙古大唐国际再生资源铝硅钛工程项目 Aluminum-Silica-Titanium Project of Inner Mongolia Datang International Regenerative Resources Development Co., Ltd.	10万吨 100,000 tons	内蒙古鄂尔多斯 Ordos, Inner Mongolia	2009年
31	河南中原黄金冶炼厂升级搬迁改造项目 Upgrade and Relocation Reconstruction Project of Henan Zhongyuan Gold Smelter	年产出36t/a Annual output of 36 tons of gold	河南三门峡市 Sanmenxia City, Henan Province	2015年
32	甘肃难处理金精矿冶炼项目 Gansu Refractory Gold Concentrate Smelting Project	日处理1000吨金精矿 Routine processing capacity of 1, 000 tons of gold concentrate	甘肃省兰州市 Lanzhou City, Gansu Province	2014年
33	国投金城冶金有限责任公司日处理2000吨复杂难处理金精矿多金属综合回收项目 The 2000 t/d Refractory Gold Concentrate Polymetallic Comprehensive Recovery Project of SDIC Jincheng Metallurgical Co., Ltd.	日处理2000吨 Routine processing capacity of 2, 000 tons	河南省灵宝市 Lingbao City, Henan Province	2018年
34	池州冠华黄金冶炼1000t/d难处理金精矿综合回收项目 The 1000 t/d Refractory Gold Concentrate Comprehensive Recovery Project of Chizhou Guanhua Gold Smelting Co., Ltd.	日处理1000吨 Routine processing capacity of 1, 000 tons	安徽省池州市 Chizhou City, Anhui Province	2014年
35	威海恒邦合金多金属矿有价元素综合回收技术改造一期项目 Weihai Humon Chemical Co., Ltd.-- Comprehensive Recovery Technology Project of Valuable Elements in Gold Polymetallic Deposits (Phase I)	年产黄金11.5吨 Annual output of 115 tons of gold	山东省威海市 Weihai City, Shandong Province	2024年
36	印尼德信一期扩产高炉、烧结、竖炉、石灰窑建安项目 PT Dexin Steel Indonesia--Expansion Project (Phase I) -- Blast Furnace, Sintering Furnace, Shaft Furnace, Lime Kiln Construction and Installation Project	扩建至600万吨 Expanded to 6 million tons	印度尼西亚 Indonesia	2024年
37	重庆环保搬迁工程烧结和炼钢项目工程 Relocation Project-- Sintering and Steelmaking Project of Chongqing Environmental Protection Investment Group Co., Ltd., Chongqing Iron & Steel Co., Ltd.	年产铁580万吨 Annual output of 5.8 million tons of iron	重庆市 Chongqing	2012年
38	山钢集团新疆喀什钢铁业结构调整产业升级项目原料烧结工程 Shandong Iron and Steel Group Co., Ltd.-- Kashgar Steel Industry --Structural Adjustment and Industrial Upgrading Project -- Raw Material Sintering Project	100万吨铁 1 million tons of iron	新疆喀什 Kashgar, Xinjiang	2013年
39	广西钢铁集团有限公司防城港钢铁基地项目（一期）焦化系统干熄焦及发电工程 Guangxi Iron and Steel Group Co., Ltd.-- Fangchenggang Iron and Steel Base Project (Phase I) -- Coke System Dry Quenching and Power Generation Project	年产铁850万吨 Annual output of 8.5 million tons of iron	广西防城港市 Fangchenggang City, Guangxi	2020年

湿法冶炼 HYDROMETALLURGY

缅甸蒙育瓦莱比塘10万吨阴极铜铜矿项目

The 10,000 Tons Cathode Copper and Copper Mine Project of Myanmar Wanbao Mining Copper Ltd.



- 中缅合作的大型项目
- 国家“一带一路”样板工程。
- 设计年产阴极铜10万吨。

- A major Sino-Myanmar cooperative project
- National "The Belt and Road" model project.
- Designed annual output: 100,000 tons of cathode copper.

刚果(金)希图鲁铜矿项目

Shituru Copper Mine Project, Democratic Republic of the Congo



- 中国企业在刚果（金）投资额最大的工业项目，也是我国当时设计的最大湿法铜冶炼项目。
- 从规模性设计、开发、施工到试生产、出铜仅用了18个月的时间，创造了中国企业海外矿业投资项目建设的最快纪录。
- 年产阴极铜4万吨

- It is the largest industrial project invested by Chinese enterprises in the Democratic Republic of the Congo, was also the largest hydrometallurgy copper smelting project designed by China at that time.
- The whole process from large-scale design, development, construction to trial production and copper production only took 18 months, creating the record for the fastest construction of Chinese enterprises' overseas mining investment projects.
- Annual output of cathode copper: 40,000 tons

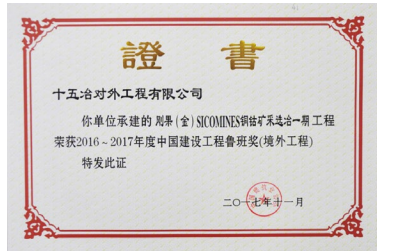
刚果（金）华刚铜钴矿项目

Huagang Copper-Cobalt Mine in Democratic Republic of the Congo



- 中刚政府重点合作项目
- 单矿阴极铜产能位居世界前列，年产阴极铜25万吨、钴金属5万吨
- 荣获“中国建设工程鲁班奖”

- Key cooperation projects of Sino-Congo governments
- Cathode copper production capacity of single mine ranks among the top in the world: An annual output of 250,000 tons of cathode copper and 50,000 tons of cobalt metal
- Won the "China Construction Project Luban Prize"



刚果（金）洛钼TFM铜钴矿项目

TFM Copper- Cobalt Deposit Project in Luoyang Molybdenum Industry, Democratic Republic of the Congo



- TFM铜钴矿项目位于刚果（金）境内卢阿拉巴省，距离卢本巴希市西北方向约175公里，矿区矿权面积超过1500平方公里，项目规模为年处理矿石450万吨，阴极铜8万吨，9300吨钴。
- 业务范围覆盖铜、钴矿石的勘探、开采、提炼、加工和销售，拥有从开采到加工的全套工艺和流程，主要产品为阴极铜和氢氧化钴。

- The TFM copper- cobalt deposit project, located in Lualaba Province, Democratic Republic of the Congo, about 175 kilometers northwest of Lubumbashi city: the mining right area of the deposit is more than 1,500 m2; the project scale is the annual processing capacity of 4.5 million tons of ore, 80,000 tons of cathode copper and 9,300 tons of cobalt.
- The business covers the exploration, mining, refining, processing and sales of copper and cobalt ores; the company has a full set of technologies and processes from mining to processing, and our main products are cathode copper and cobalt hydroxide.

印尼华越镍钴项目

PT. Huayue Nickel Cobalt Project



- 国际最先进第三代高压酸浸HAPL工艺
- 年产6万吨镍金属量氢氧化镍钴
- It adopts the international most advanced third generation high-pressure acid leaching HAPL process
- Annual output of 60,000 tons of nickel metallic nickel cobalt hydroxide

哈萨克斯坦巴甫洛达尔电解铝二期项目

Pavlodar Electrolytic Aluminum Project (Phase II), Kazakhstan



- 冬季施工周期长达半年，平均气温零下20度，最低气温零下40度以下，对施工进度影响较大，我方仍按期完成工程施工。
- 工程质量合格率100%，一次性验收投产

- The construction period in winter was as long as half a year, and the average temperature was - 20 °C, and the minimum temperature was below - 40 °C, such condition had a great impact on the construction progress, however, we still completed the construction on schedule.
- The pass rate of project was 100%, and it passes acceptance one time and put into operation



山东恒邦复杂精金矿综合回收项目

Refractory Gold Concentrate Comprehensive Recovery Project of Shandong Humon Smelting Co., Ltd.

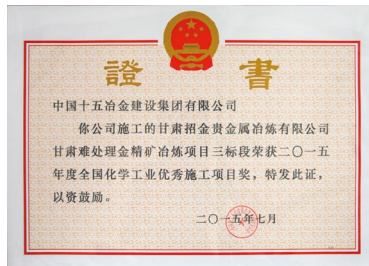


- 项目年处理原料包括135万t复杂金精矿，搭配处理 10万t黄金湿法冶炼废渣、25000t含铜废物、25000t有色冶炼废物。
- 该项目包括1套火法熔炼系统、年产20万t永久不锈钢电解系统及配套建设环保及公辅工程等。
- 提取贵金属金、银，同时年产 A 级铜20万t。

- Project's annual processing capacity of raw materials: including 1.35 million tons of refractory gold concentrate, mixed processing 100,000 tons of gold hydrometallurgy slag, 25,000 tons of copper-containing waste, and 25,000 tons of non-ferrous smelting waste.
- The project includes a set of hydrometallurgy system, a permanent stainless steel electrolytic system with an annual output of 200,000 tons and supporting environmental protection construction and public auxiliary projects.
- It can extract precious metals gold and silver, and can produce 200,000 tons of Grade A copper every year.

甘肃招金难处理金精矿冶炼项目

Refractory Gold Concentrate Smelting Project of Gansu Zhaojin Mining Industry Co., Ltd.



- 日处理1千吨金精矿，采用“湿法浸锐，两段焙烧，尾气制酸，化学提金”工艺，具有适应性高、安全、环保等优势。实现金、银、锦、铜、硫多元素综合回收工。

- The project can process 1000 tons of gold concentrate every day, adopts the process of " hydrometallurgy, two-stage roasting, tail gas acid-making, gold extraction by chemical method", characterized by high adaptability, safety, environmental protection and other advantages. It can multi-element comprehensive recovery of gold, silver, brocade, copper and sulfur.

四川凉山漫水湾江铜稀土精矿8000吨冶炼分离复产项目

Sichuan Jiangxi Copper Rare Earth Co. Ltd.-- The 8000 Tons Copper Concentrate Smelting and Separation Project in Manshuiwan, Liangshan



- 属改造工程，需兼顾原有厂房和被拆除设备的保护工作。
- 多数为钢筋混凝土结构，施工模板、木方及周材投入量较大，需保证工期内材料周转。

- It is a renovation project and also undertakes the protection of the original plants and the dismantled equipment.
- Mainly involving in reinforced concrete structures, and the large demand of construction formwork, wood and turnover materials, so it is necessary to ensure enough turnover materials during construction period.

广东中色南方稀土(新丰)7000吨稀土分离项目

The 7000 Tons Rare Earth Separation Project of CNMC Southern Rare Earth (Xinfeng) Co., Ltd.



- 该项目非传统意义上的冶炼工程，产品的分离过程中原料采用盐酸溶解，设备均以槽、罐为主，材料主要采用聚乙烯塑料及玻璃钢。

- The project is a non-traditional smelting project, and adopts hydrochloric acid to dissolve raw materials in the product separation process; its main devices are sinks and tanks, and the main materials are polyethylene plastic and fiber reinforced polymer.

近年典型工程业绩

Typical Project Cases in Recent Years

序号 No.	项目名称 Project name	年产量/处理量 Annual production processing capacity	项目地点 Project location	竣工时间 Completion date
1	刚果（金）华刚铜钴矿项目 SICO Mines Copper and Cobalt Mine Project of e Copper Hydrometallurgy Project, Democratic Republic of the Congo	25万吨 250,000 tons	刚果金 Democratic Republic of the Congo	2015年 
2	刚果(金)欧亚RTR尾矿回收项目 Roan Tailings Reclamation (RTR) Project, Democratic Republic of the Congo	14万吨 140,000 tons	刚果金 Democratic Republic of the Congo	2018年
3	缅甸蒙育瓦莱比塘铜矿项目 Monywa Letpadaung Copper Mine in Myanmar	10万吨 100,000 tons	缅甸 Myanmar	2017年 
4	刚果（金）TFM铜钴矿项目 TFM Copper- Cobalt Deposit Project, Democratic Republic of the Congo	10万吨 100,000 tons	刚果金 Democratic Republic of the Congo	2022年
5	刚果（金）迪兹瓦铜钴矿项目 Deziwa Copper- Cobalt Deposit Project, Democratic Republic of the Congo	8万吨阴极铜 80,000 tons of cathode copper	刚果金 Democratic Republic of the Congo	2019年
6	刚果（金）庞比铜钴矿项目 Pumpi Copper- Cobalt Deposit Project, Democratic Republic of the Congo	年产阴极铜4.5万吨 Annual output of 45,000 tons of cathode copper	刚果金 Democratic Republic of the Congo	2021年
7	刚果（金）希图鲁铜矿工程 Shituru Copper Deposit Project, Democratic Republic of the Congo	4万吨 40,000 tons	刚果金 Democratic Republic of the Congo	2012年 
8	刚果（金）绿纱铜钴矿 Luishia Copper- Cobalt Deposit Project, Democratic Republic of the Congo	3.5万吨 35,000 tons	刚果金 Democratic Republic of the Congo	2014年
9	刚果（金）盛屯矿业CCR3万吨/年阴极铜扩建项目 CCM 30,000 t/a Cathode Copper Expansion Project, Democratic Republic of the Congo	3万吨 30,000 tons	刚果金 Democratic Republic of the Congo	2021年
10	刚果（金）刚波夫主矿体湿法炼铜项目 Main Ore Body Hydrometallurgy Project of Kambove Mining SAS, Democratic Republic of the Congo	2.8万/年吨 28,000 tons per year	刚果金 Democratic Republic of the Congo	2022年
11	刚果（金）卡莫亚铜钴矿二期项目 Kamoya Copper- Cobalt Deposit Project (Phase II), Democratic Republic of the Congo	2.5万吨 25,000 tons	刚果金 Democratic Republic of the Congo	2021年
12	刚果（金）盛屯年产1万吨电铜及3500吨粗制氢氧化钴湿法厂 CCM's 10,000 t/a Electrolytic Copper and 3,500 tons/a Crude Cobalt Hydroxide Hydrometallurgy Plant, Democratic Republic of the Congo	1万吨 10,000 tons	刚果金 Democratic Republic of the Congo	2018年
13	刚果（金）卡松波年产4000吨氢氧化钴及1万吨电铜项目 MIKAS' 10,000 t/a Electrolytic Copper and 4,000 tons/a Cobalt Hydroxide Project, Democratic Republic of the Congo	1万吨 10,000 tons	刚果金 Democratic Republic of the Congo	2012年
14	印尼华越镍钴项目主体工程 Main Body Project of PT. Huayue Nickel Cobalt Project	6万吨 60,000 tons	印度尼西亚 Indonesia	2021年
15	哈萨克斯坦巴甫洛达尔电解铝二期工程 Pavlodar Electrolytic Aluminum Project (Phase II), Kazakhstan	12.5万吨 125,000 tons	哈萨克斯坦 Kazakhstan	2011年
16	哈萨克斯坦铝业公司巴甫洛达尔电解铝厂焙烧炉安装工程 Roasting Furnace Installation Project of Pavlodar Electrolytic Aluminum Plant, Kazakhstan	12.5万吨 125,000 tons	哈萨克斯坦 Kazakhstan	2010年
17	恒邦冶炼湿法黄金冶炼及稀贵金属回收技改项目 Humon Hydrometallurgy Gold Smelting and Rare and Precious Metal Recovery and Technological Upgrading Project	贵金属合金2420吨 2420 previous metal alloy tons	山东省烟台市 Yantai City, Shandong Province	2018年
18	甘肃招金难处理金精矿冶炼项目 Refractory Gold Concentrate Smelting Project of Gansu Zhaojin Precious Metal Smelting Co., Ltd.	黄金5吨，白银4吨 5 tons of gold, 4 tons of silver	甘肃省定西市 Dingxi City, Gansu Province	2013年
19	含砷难处理金银精矿催化氧化酸浸湿法冶金新工艺体系及工业开发项目 New Arsenic-Containing Refractory Gold and Silver Concentrate Catalytic Oxidation Acid Leaching Hydrometallurgy Process System and Industrial Development Project	黄金5吨，白银200吨 5 tons of gold, 200 tons of silver	山东省招远市 Zhaoyuan City, Shandong Province	2015年
20	珲春多金属有限公司复杂金精矿综合回收项目 Complex Gold Concentrate Comprehensive Recovery Project of Hunchun Polymetal Co., Ltd.	黄金8吨，白银50吨 8 tons of gold, 50 tons of silver	吉林省珲春市 Hunchun City, Jilin Province	2015年
21	山东恒邦复杂金精矿综合回收项目 Complex Gold Concentrate Comprehensive Recovery Project of Shandong Humon Smelting Co., Ltd.	年处理135万吨复杂金精矿 Annual processing capacity of 135 million tons of complex gold concentrate	山东省烟台市 Yantai City, Shandong Province	2023年
22	中色南方稀土（新丰）有限公司7000吨/年稀土分离项目 The 7000 Tons Rare Earth Separation Project of CNMC Southern Rare Earth (Xinfeng) Co., Ltd.	0.7吨/年稀土分离 0.7 ton/ year rare earth separation	广东省韶关市 Shaoguan City, Guangdong Province	2015年
23	江铜稀土公司漫水湾年产稀土精矿~8000t/a冶炼分离复产项目 Sichuan Jiangxi Copper Rare Earth Co. Ltd.-- The 8000 Tons Copper Concentrate Smelting and Separation Project in Manshuiwan, Liangshan	0.8万吨 8000 tons	四川省凉山州 Liangshan Prefecture, Sichuan Province	2012年

维保 MAINTENANCE

江西铜业股份有限公司 Jiangxi Copper Corporation



半自磨机减速机检修
Maintenance of semi-autogenous mill reducer



卡尔多炉炉体检修
Kaldor furnace body maintenance



熔炼转炉回转烟罩改对开烟罩
Transformation of revolving fume hood for smelting converter to open fume hood



铜包焊接检修
Copper cladding welding maintenance



阳极炉托轮更换
Replacement of riding wheel for anode furnace



制氧空分塔检修
Oxygen air separator tower maintenance

山东恒邦股份有限公司 Shandong Humon Smelting Co., Ltd.



精炼车间洗涤塔出口管更换
Replacement of outlet pipe for scrubber in refining workshop



硫酸车间二氧化硫风机检修
Sulfur dioxide fan maintenance in sulfuric acid workshop



熔炼车间侧吹炉检修
Side-blown furnace maintenance in meltshop



熔炼车间底吹炉余热锅炉整体更换
Overall replacement of waste heat boiler for bottom-blown furnace in meltshop



熔炼车间环保风机检修
Maintenance of environmental protection fan in meltshop

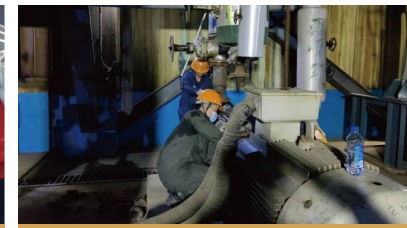
山东中金岭南有限责任公司 Shandong Zhongjin Lingnan Copper Co., Ltd.



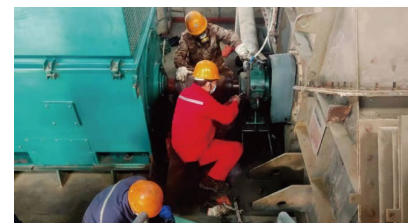
3k风机检查保养
3k Fan check and maintenance



大修渣选4#球磨机大齿圈外观检查
Appearance inspection of big tooth ring for overhaul slag 4# ball mill



二期余热多元炉循环泵维修
Maintenance of circulating pump for multi-component waste heat boiler (Phase II)



底吹环保风机轴承维修
Maintenance of environmental protection fan bearing for bottom-blown furnace



一期鼓风机房止推轴承维修
Maintenance of thrust bearing shell for air blower room (Phase I)

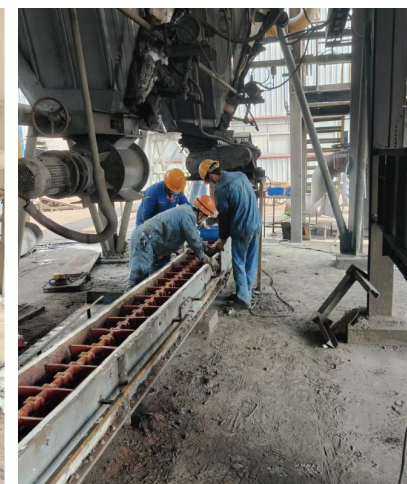
阳新弘盛铜业有限公司 Yangxin Hongsheng Copper Industry Co., Ltd



冰铜磨机检修
Matte mill repair



电收尘膨胀节更换
Expansion joint replacement of electric dust collector



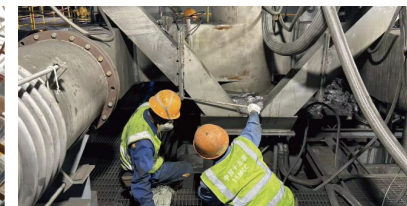
刮板检修
Scraper repair



锅炉灰斗更换
Boiler ash hopper replacement



破碎机检修
Crusher maintenance



精矿喷嘴更换
Concentrate nozzle replacement

大冶有色金属有限责任公司

China Daye Non-Ferrous Metals Mining Limited

综合管网钢构及管道

Steel structure and pipeline of integrated pipe network



综合管网烟风管道

Smoke and air pipeline of integrated pipe network



球形烟道

Spherical flue



转炉余热锅炉

CF smelting waster heat boiler



转炉

Converter



- 管网部分。在拆除和部分保护原有老旧设施的基础上对综合管网的立柱、桁架，管网上各类介质管道、烟管，以及转炉区域球形烟道的重新制作和安装。
- 1号转炉余热锅炉的本体拆除和安装。
- 熔炼、吹炼收尘的烟气管道的制造和安装。
- 1#、2#转炉水套、水冷烟罩及冷却水管安装。

- Pipe network: In addition to dismantling and partially protecting the original old facilities, the project will fabricate and install the columns and trusses of the integrated pipe network, all kinds of medium pipes and smoke pipes on the pipe network, as well as the spherical flue in the converter area again.
- Removal and installation of the body of 1# CF smelting waster heat boiler.
- Manufacture and installation of flue gas pipes for smelting and blowing and dust collecting device.
- Installation of water jacket, water cooling hood and cooling water pipe for 1# and 2# converters.

近年典型工程业绩

Typical Project Cases in Recent Years

序号 No.	项目名称 Project Name	工作内容 Maintenance Description	项目地点 Project Location	竣工时间 Completion Date
江西铜业集团有限公司 Jiangxi Copper Corporation				
1	贵溪冶炼厂熔炼二系统闪速炉余热锅炉年修项目 Annual Overhaul Project of Waste Heat Boiler for Flash Furnace of System 2 in Smelting Workshop in Guixi Smelter	年修 Annual overhaul	江西省贵溪市 Guixi City, Jiangxi Province	2021年
2	贵溪冶炼厂2021年日常维修、定修、年修 Routine Maintenance, Periodical Maintenance and Annual Overhaul of Guixi Smelter in 2021	日常维修、定修、年修 Routine maintenance, periodical maintenance and annual overhaul	江西省贵溪市 Guixi City, Jiangxi Province	2021年
3	江西铜业集团铜板带有限公司2023年区域承包检修项目 Regional Contracting Maintenance Project Jiangxi Copper Group Copper Strip Co., Ltd. in 2023	主工艺设备、辅助设备、水泵房、污水站、公司管网、各低压配电室 Main process equipment, auxiliary equipment, water pump room, sewage station, company pipe network, low-voltage distribution rooms	江西省南昌市 Nanchang City, Jiangxi Province	2023年
4	贵溪冶炼厂熔炼车间一系统转炉区域 2023-2026三年度承包检修项目 Maintenance Project of Converter Area of System 1 in Smelting Workshop in Guixi Smelter in 2023-2026	贵溪冶炼厂 2023-2026 年转炉区域检修 Maintenance of converter area in Guixi Smelter in 2023-2026	江西省贵溪市 Guixi City, Jiangxi Province	2023年
5	贵溪冶炼厂 2023-2026 年熔炼车间一、二系统闪速炉区域承包检修项目（二标段） Maintenance Project of Flash Furnace Area of System 1 and 2 in Smelting Workshop in Guixi Smelter in 2023-2026	贵溪冶炼厂 2023-2026 年熔炼车间一、二系统闪速炉区域检修 Maintenance of flash furnace area of System 1 and 2 in Smelting Workshop in Guixi Smelter in 2023-2026	江西省贵溪市 Guixi City, Jiangxi Province	2023年
6	江铜铅锌2021年年修基夫赛特炉、CDF炉本体、混合烟道大修检修项目 Annual Overhaul Project of Kivcet Furnace, CDF Furnace Body, Mixing Flue in Jiangxi Copper Lead & Zinc Metal Co., Ltd. in 2021	2021年年修基夫赛特炉、CDF炉本体、混合烟道大修 Annual overhaul of Kivcet furnace, CDF furnace body, mixing flue in 2021	江西省九江市 Jiujiang City, Jiangxi Province	2021年
7	江铜铅锌年度维修外包协议（2021-2022） Annual Maintenance Outsourcing Agreement (2021-2022) of Jiangxi Copper Lead & Zinc Metal Co., Ltd.	新增主工艺设备 Adding main process equipment	江西省南昌市 Nanchang City, Jiangxi Province	2022年
山东恒邦冶炼股份有限公司 Shandong Humon Smelting Co., Ltd.				
1	山东恒邦冶炼股份有限公司土建零星维修工程 Piecemeal Repair Project for Civil Works of Shandong Humon Smelting Co., Ltd.	土建零星维修 Piecemeal repair for civil works	山东省烟台市 Yantai City, Shandong Province	2020年
2	山东恒邦冶炼股份有限公司零星工程及技术改造项目基本建设工程 Sporadic engineering and technological transformation project -- capital construction project of Shandong Humon Smelting Co., Ltd.	2021年度基本建设项目、技术改造项目和技术研发项目 Capital construction projects, technological transformation projects and technological research and development projects in 2021	山东省烟台市 Yantai City, Shandong Province	2021年
3	山东恒邦冶炼股份有限公司零星工程及技术改造项目基本建设施工单位选定 Selection of construction units for capital construction of sporadic engineering and technological transformation project of Shandong Humon Smelting Co., Ltd.	基本建设项目、技术改造项目和 技术研发项目等项目，以及土建零星维修工程项目 Capital construction projects, technological transformation projects and technological research and development projects, as well as piecemeal repair project for civil works	山东省烟台市 Yantai City, Shandong Province	2022年
4	山东恒邦冶炼股份有限公司厂内设备、设施维修维护工程 Maintenance and repair project of equipment and facilities of Shandong Humon Smelting Co., Ltd.	厂内设备、设施维修维护工程 Plant-in maintenance and repair project of equipment and facilities	山东省烟台市 Yantai City, Shandong Province	2023年
5	威海恒邦化工有限公司厂区日常检修保温(防腐)安装工程 Insulation (anti-corrosion) layer installation project in plant-in routine inspection and maintenance of Weihai Humon Chemical Co., Ltd.	日常检维修中的设备及管道保温(防腐)安装 Equipment and pipe insulation (anti-corrosion) layer installation in routine inspection and maintenance	山东省威海市 Weihai City, Shandong Province	2020年
6	威海恒邦化工有限公司2021年日常维修及零星工程施工项目 Routine maintenance and sporadic construction project of Weihai Humon Chemical Co., Ltd. in 2021	各生产系统的大中修、日常维修、非标制作等 Overhaul, medium maintenance, routine maintenance, non-standard production of production systems, etc.	山东省威海市 Weihai City, Shandong Province	2021年
山东中金岭南有限责任公司 Shandong Zhongjin Lingnan Copper Co., Ltd.				
1	东营鲁方金属材料有限公司二期项目保驾维修工程(2020年度) Safety maintenance project (Phase II) of Shandong Zhongjin Lingnan Copper Co., Ltd.	二期项目保驾维修 Safety maintenance of Phase II project	山东省东营市 Dongying City, Shandong Province	2019年
2	东营鲁方金属材料有限公司一二期系统大修工程 System overhaul project (Phase I and II) of Shandong Zhongjin Lingnan Copper Co., Ltd.	一二期系统大修 System overhaul (Phase I and II)	山东省东营市 Dongying City, Shandong Province	2020年
3	东营鲁方金属材料有限公司厂区保驾维修工程(2021年度) Plant safety maintenance project (in 2021) of Shandong Zhongjin Lingnan Copper Co., Ltd.	2021年度维保工作 Maintenance in 2021	山东省东营市 Dongying City, Shandong Province	2021年
4	东营鲁方金属材料有限公司 厂区保驾维修工程(2022年度) Plant safety maintenance project (in 2022) of Shandong Zhongjin Lingnan Copper Co., Ltd.	东营鲁方金属材料有限公司厂区维保 Plant maintenance of Shandong Zhongjin Lingnan Copper Co., Ltd.	山东省东营市 Dongying City, Shandong Province	2022年

近年典型工程业绩

Typical Project Cases in Recent Years

序号 No.	项目名称 Project Name	工作内容 Maintenance Description	项目地点 Project Location	竣工时间 Completion Date
山东中金岭南有限责任公司 Shandong Zhongjin Lingnan Copper Co., Ltd.				
5	2022年度鲁方厂区生产系统日常维修及大修工程 Routine maintenance and overhaul project of production system in Shandong Zhongjin Lingnan Copper Co., Ltd. in 2022	厂房、设备、管道、钢结构等检维修、防腐、保温、升级改造等工作。 Inspection and maintenance, anti-corrosion, heat preservation, upgrading and other works of plant, equipment, pipeline, steel structures.	山东省东营市 Dongying City, Shandong Province	2022年
6	东营鲁方金属材料有限公司2023年度捕金一厂、捕金二厂、脱硫分厂生产区域内设备、设施维修维保 Maintenance and repair of equipment and facilities in production areas of Precious Metal Recycling Plant 1 and 2 and desulfurization branch in Shandong Zhongjin Lingnan Copper Co., Ltd. in 2023	捕金一厂、捕金二厂、脱硫分厂生产区域内设备、设施维修维保 Maintenance and repair of equipment and facilities in production areas of Precious Metal Recycling Plant 1 and 2 and desulfurization branch	山东省东营市 Dongying City, Shandong Province	2023年
7	2022年度鲁方厂区生产系统日常维修及大修工程 Routine maintenance and overhaul project of production system in Shandong Zhongjin Lingnan Copper Co., Ltd. in 2023	生产系统日常维修及大修工程 Routine maintenance and overhaul of production system	山东省东营市 Dongying City, Shandong Province	2023年
中色镍业（缅甸）有限公司 CNMC Nickel Co., Ltd. (CNICO)				
1	中色镍业(缅甸)有限公司2#线大修炉窑修砌工程施工 CNMC Nickel Co., Ltd.-- 2# production line overhaul--furnace repair project	2#线大修炉窑 2# production line overhaul--furnace repair	缅甸 Myanmar	2021年
2	中色镍业(缅甸)有限公司1#炉维修工程 1# Furnace maintenance project of CNMC Nickel Co., Ltd.	1#炉维修工程 1# Furnace maintenance	缅甸 Myanmar	2022年
3	中色镍业(缅甸)有限公司1#炉维修工程施工 1# Furnace maintenance construction project of CNMC Nickel Co., Ltd.	1#炉维修 1# Furnace maintenance	缅甸 Myanmar	2023年
大冶有色金属有限责任公司 China Daye Non-Ferrous Metals Mining Limited				
1	大冶有色金属有限责任公司冶炼厂4#转炉余热锅炉检修项目 Maintenance project of 4# CF smelting waste heat boiler in the smelter of China Daye Non-Ferrous Metals Mining Limited	4#转炉余热锅炉检修 Maintenance of 4# CF smelting waste heat boiler	湖北省黄石市 Huangshi City, Hubei Province	2020年
2	大冶有色金属有限责任公司冶炼厂5#转炉余热锅炉检修项目 Maintenance project of 5# CF smelting waste heat boiler in the smelter of China Daye Non-Ferrous Metals Mining Limited	5#转炉余热锅炉检修 Maintenance of 5# CF smelting waste heat boiler	湖北省黄石市 Huangshi City, Hubei Province	2020年
铜陵有色金属集团股份有限公司 Tongling Nonferrous Metals Group Co., Ltd.				
1	金冠铜业闪速炉等筑炉年度维保项目 Annual maintenance project of flash furnace and other furnaces in Jinguan Copper Industry Branch	两台闪速炉、一台保温炉、两台阳极炉、一台竖炉、圆盘浇铸系统 Two flash furnaces, one holding furnace, two anode furnaces, one shaft furnace, disc casting system	安徽省铜陵市 Tongling City, Anhui Province	2022年
2	铜陵有色股份工程技术分公司负责的生产单位日常维保、月修、年修 Routine maintenance, monthly maintenance, annual maintenance of production units undertaken by Engineering Technical Branch of Tongling Nonferrous Metals Group Co., Ltd.	机电仪类、建筑类、炉窑砌筑类维修工程或经业主委托的技改 Maintenance works of mechanical and electrical equipment, buildings, furnace masonry or technological transformation entrusted by the owner	安徽省铜陵市 Tongling City, Anhui Province	2022年
3	铜冠池州公司2021年度日常土建维修施工工程A标段 Section A of routine civil repair and construction project of Tongling Nonferrous Metals (Chizhou) Co., Ltd. in 2021	零星工程，为铜陵有色铜冠铅分厂日常土建维修 Sporadic works, routine civil repair of Jinguan Lead Industry Branch, Tongling Nonferrous Metals Group Co., Ltd.	安徽省池州市 Chizhou City, Anhui Province	2021年
4	铜冠池州公司2022年度土建维修及零星工程 Civil repair and sporadic project of Tongling Nonferrous Metals (Chizhou) Co., Ltd. in 2022	日常零星维修工程 Daily sporadic repair works	安徽省池州市 Chizhou City, Anhui Province	2022年
5	铜冠池州公司2023年度土建维修及零星工程A标段 Civil repair and sporadic project (Section A) of Tongling Nonferrous Metals (Chizhou) Co., Ltd. in 2023	日常零星维修工程 Daily sporadic repair works	安徽省池州市 Chizhou City, Anhui Province	2023年
阳新弘盛铜业有限公司 Yangxin Hongsheng Copper Industry Co., Ltd.				
1	阳新弘盛铜业有限公司2023年度火冶片区设备设施维保项目 Maintenance project of equipment and facilities in pyrometallurgy areas of Yangxin Hongsheng Copper Industry Co., Ltd. in 2023	阳新弘盛铜业有限公司火冶片区2023年度设备设施维保项目 Maintenance of equipment and facilities in pyrometallurgy areas of Yangxin Hongsheng Copper Industry Co., Ltd. in 2023	湖北省黄石市 Huangshi City, Hubei Province	2023年
烟台利马水业有限公司 Yantai Lima Water Industry Co., Ltd.				
1	烟台利马水业有限公司山东省烟台市牟平区维修零星项目工程 Sporadic maintenance project of Yantai Lima water Industry Co., Ltd. in Muping District, Yantai City, Shandong Province	维修零星项目工程范围内的所有建设项目 Construction within the scope of sporadic maintenance project	山东省烟台市 Yantai City, Shandong Province	2021年

金属加工工程 METAL WORKING ENGINEERING

江铜广州增城40万吨铜杆冶炼项目一期

The 400,000 Tons Copper Rod Smelting Project (Phase I) of Guangzhou JCC Copper Products Co., Ltd.



- 成套引进目前世界上最先进的德国SMS Meer CONTIROD Type CR3700(60mt/h)铜杆连铸连轧生产线。
- 成套引进意大利FRIGECO的TS45双头无滑动卧式连续拉丝退火生产线。
- 年设计产能为40万吨，主要产品为低氧铜杆和电工圆铜线。

- It introduces the whole set of the world's most advanced SMS Meer CONTIROD Type CR3700 (60mt/h) copper rod continuous casting and rolling production line from German.
- It introduces the whole set of TS45 double-head non-sliding horizontal continuous wire drawing and annealing production line from FRIGECO in Italy.
- Annual design production capacity is 400,000 tons, and the main products are low-oxygen copper rods and round copper wire for electrical purposes.

江铜10万吨高性能高精度铜及铜合金板带材项目一期

JCC 100,000 Tons High-Performance and High-Precision Copper and Copper Alloy Plate and Strip Project (Phase I)



- 水平连铸及冷轧车间、纵剪包装机基础、气垫炉基础采用沉井方法施工，对施工工艺要求高。
- 为江铜集团实现铜加工战略规划，延伸铜产业链，提高产品附加值的重要举措。

- Open caisson construction is applied to horizontal continuous casting and cold rolling workshop, foundation of slitting and packing machine and air cushion furnace foundation, and there are high construction technical requirements.
- It is an important measure for Jiangxi Copper Corporation to realize the strategic planning of copper processing, extend the copper industrial chain and improve the added values of products.

浙江花园新能源项目

New Energy Project of Zhejiang Huayua Group



- 投产后可达到1万吨锂电池用铜箔和1万吨电子电路用铜箔的生产能力。
- After putting into operation, the project can reach the production capacity of 10,000 tons of copper foil for lithium batteries and 10,000 tons of copper foil for electronic circuits.



中色正元年产6万吨锂电正极材料前驱体项目

The 60,000 tons/year Lithium-Ion Battery Cathode Material Precursor Project of CNMC Zhengyuan (Anhui) New Energy Technology Co., Ltd.



- 年产6万吨锂电正极材料
- 有色集团在国内投资的第一个重大新能源材料项目
- 主要包括前驱体车间、四氧化三钴车间、产品库、氨水库、双氧水库、前驱体原料和单盐配置6个子项建设和设备材料采购。

- An annual output of 60,000 tons of lithium-ion battery cathode material
- It is the first major new energy material project invested by China Nonferrous Metal Mining (Group) Co., Ltd. (CNMC) in China
- The project mainly includes the construction and equipment/ material procurement of 6 subprojects such as precursor workshop, cobalt tetroxide workshop, product warehouse, ammonia reservoir, hydrogen peroxide reservoir, precursor raw materials and single salt configuration.

中色天津新材料产业园项目

CNMC Tianjin New Material Industrial Park Project

- 该项目规模：年产铝挤压材40000t，铜材20000t。
- 承建了包括熔铸车间、铝挤压车间、铝深加工车间、铜材车间、镍材车间（厂房）及配套设施等建筑与安装工程施工

- Project scale: Annual output of 40000 t aluminum extrusion and 20000 t copper.
- Building construction and installation works of casting workshop, aluminum extrusion workshop, aluminum deep processing workshop, copper workshop, nickel workshop (plant) and supporting facilities



近年典型工程业绩

Typical Project Cases in Recent Years

序号 No.	项目名称 Project name	年产量/处理量 Annual Output/ Processing Capacity	项目地点 Project Location	竣工时间 Completion Date
1	江铜广州增城40t/α铜杆冶炼项目一期 The 400,000 Tons Copper Rod Smelting Project (Phase I) of Guangzhou JCC Copper Products Co., Ltd.	40万吨 400,000 tons	广东省广州市 Guangzhou City, Guangdong Province	2012年
2	中色天津新材料产业园项目 CMNC Tianjin New Material Industrial Park Project	铝挤压材40万吨，铜材20万吨 CMNC Tianjin New Material Industrial Park Project	广东省广州市 Guangzhou City, Guangdong Province	2012年
3	江铜10万吨高性能高精度铜及铜合金板带材项目一期 JCC 100,000 Tons High-Performance and High-Precision Copper and Copper Alloy Plate and Strip Project (Phase I)	10万吨 100,000 tons	江西省南昌市 Nanchang City, Jiangxi Province	2010年
4	江西华创新材有限公司年产10万吨超薄锂电铜箔项目-1#主厂房设备及工艺管道安装工程 The Project of Jiangxi Huachuang New Materials Co., Ltd. with Annual Output of 100,000 Tons of Ultra-Thin Copper Foil for Lithium Batteries -- Equipment and Process Pipeline Installation Project of 1# Main Plant	10万吨 100,000 tons	江西省南昌市 Nanchang City, Jiangxi Province	2023年
5	芜湖鑫科新材料8万吨铜板带项目 The 80,000 Tons Copper Plate and Strip Project of Wuhu Xinke New Material Co., Ltd.	8万吨 80,000 tons	安徽省芜湖市 Wuhu City, Anhui Province	2014年
6	中色奥博特年产6万吨内螺纹空调铜管生产线项目 The 60,000 tons/year Internal Ribbed Air Conditioner Copper Pipe Production Line Project of CNMC Albetter Albronze Co., Ltd.	6万吨 60,000 tons	山东省聊城市 Liaocheng City, Shandong Province	2012年
7	奥博特铜板带厂4万吨高精度铜合金板带技改项目 The 40,000 Tons High-Precision Copper Alloy Plate and Strip Technological Transformation Project of Albetter Copper Plate and Strip Plant	4万吨 40,000 tons	山东省聊城市 Liaocheng City, Shandong Province	2011年
8	铜陵有色铜箔（一期）主厂房项目 Copper Foil Main Plant Project (Phase I) of Tongling Nonferrous Metals Group Co., Ltd.	1.5万吨 15,000 tons	安徽省铜陵市 Tongling City, Anhui Province	2018年
9	柳钢绿色锰系新材料产业基地升级改造项目（一期）卸料棚及皮带通廊建设工程 Guangxi Liuzhou Iron and Steel Group Company Limited -- Upgrading Project (Phase I) of Green Manganese New Material Industrial Base -- Unloading Shed and Belt Corridor Construction Project	铁合金30万吨 300, 000 tons of iron alloy	广西壮族自治区柳州市 Liuzhou City, Guangxi Zhuang autonomous region	2024年
10	重庆钢铁股份有限公司线棒生产线搬迁建设工程 Wire Rod Production Line Relocation Construction Project of Chongqing Iron and Steel Co., Ltd.	650万吨 6500,000 tons	重庆市 Chongqing Municipality	2016年
11	江西新余钢铁有限公司厚板工程 Wire Rod Production Line Relocation Construction Project of Chongqing Iron and Steel Co., Ltd.	300万吨 3000,000 tons	江西省新余市 Xinyu City, Jiangxi Province	2005年
12	山钢集团新疆喀什钢铁业结构调整产业升级项目棒材、高速线材轧钢工程 ShanSteel Xinjiang Kashgar Steel Industry -- Structural Adjustment and Industrial Upgrading Project - Rod and High-Speed Wire Rolling Project	年产300万吨铁、钢、材配套产能 Annual production capacity of 3 million tons of iron, steel and wire materials	新疆喀什 Kashgar, Xinjiang	2013年
13	山东恒邦冶炼股份有限公司高纯新材料研制及产业化项目 High-Purity New Material R&D and Industrialization Project of Shandong Humon Smelting Co., Ltd.	年产高纯砷50吨、高纯铋50吨 高纯铋50吨、高纯碲20吨 Annual output of 50 tons of high-purity arsenic, 50 tons of high-purity antimony, 50 tons of high-purity bismuth and 20 tons of high-purity tellurium	山东省烟台市 Tongling City, Anhui Province	2023年
14	中色正元年产6万吨锂电正极材料前驱体项目 The 60,000 tons/year Lithium-Ion Battery Cathode Material Precursor Project of CNMC Zhengyuan (Anhui) New Energy Technology Co., Ltd.	6万吨 60,000 tons	安徽省铜陵市 Tongling City, Anhui Province	2023年
15	铜陵有色年产2万吨高精度储能用超薄电子铜箔项目(二期)设备及工艺管道安装工程 Project of Tongling Nonferrous Metals Group Co., Ltd. with Annual Output of 20,000 Tons of Ultra-Thin Electronic Copper Foil for High-Precision Energy Storage Products (Phase II) -- Equipment and Process Pipeline Installation Project	2万吨 20,000 tons	安徽省铜陵市 Tongling City, Anhui Province	2023年
16	锂电新能源一体化智能制造基地项目(二期)一年产2万吨高精度电子铜项目(铜箔二期)设备及工艺管道安装工程 Lithium Battery New Energy Integrated Intelligent Manufacturing Base Project (Phase II) -- An Annual Output of 20,000 Tons of High-Precision Electronic Copper Foil (copper foil Phase II) -- Equipment and Process Pipeline Installation Project	2万吨 20,000 tons	广西壮族自治区博白县 Bobai County, Guangxi Zhuang Autonomous region	2023年
17	中色（宁夏）东方集团年产12000吨太阳能硅片用切割线项目 Project of CNMC (Ningxia) Eastern Group with Annual Output of 12,000 Tons of Solar Silicon Wafer Cutting Line	1.2万吨 12,000 tons	宁夏自治区石嘴山市 Shizuishan City, Ningxia Autonomous Region	2012年
18	江苏瑞兆科电子材料有限公司连云港高纯二期(一阶段)电镀液添加剂项目 Jiangsu Sinopure Electronic Materials Co., Ltd.-- Phase 2 (Phase 1) Lianyungang High-Purity Project--Electroplating Solution Additive Project	2000吨/年电镀液添加剂 5000吨/年电子级双氧水 2000 tons/year electroplating solution additive, 5000 tons/year electronic grade hydrogen peroxide	江苏省连云港市 Lianyungang City, Jiangsu Province	2023年

Scientific and Technological Innovation

科技创新

实力篇

Strength



公司高度重视科技工作及科技队伍建设，抽调10余人的精干力量成立冶炼专项课题组，开展冶炼领域的科研攻关，并大力引进高层次科研人才，2024年入职80余名硕博毕业生，面向社会公开招聘设计、科研等高层次人才30余人，公司专职科研力量将不断充实壮大。

2024年1月份公司与昆明理工大学合作成立冶金化工节能环保技术国家地方联合工程研究中心十五冶分中心，在成立企业工程研究中心的同时，已申报湖北省工程研究中心。

公司在阳新弘盛40万吨清洁铜项目采用BIM技术应用，得到了十分良好的效果。尤其对管线综合优化，设备安装和基础定位等，均达到预期的质量目标。同时通过详细的施工工艺模拟与三维工艺交底等，提升了工程施工质量。

The company attaches great importance to the scientific and technological research and the construction of scientific and technological team, and allocates more than 10 talents to set up a special smelting research group to carry out smelting scientific research and tackle the key research projects, and vigorously introduces high-level scientific research talents; In 2024, more than 80 master and doctor graduates are recruited, and more than 30 high-level talents in design and scientific research are openly recruited, therefore, the full-time scientific research force of the company will continue to enrich and grow.

In January 2024, the company cooperated with Kunming University of Science and Technology to establish the National and Local Joint Engineering Research Center of Energy Conservation and Environmental Protection Technology in the metallurgy and chemical industry, a branch of 15MCC Center; During the establishment of the engineering research center, we have applied for Hubei Engineering Research Center.

The application of BIM technology in "The 400,000 Tons High-Purity Cathode Copper Clean Production EPC Project of Huangshi Yangxin Hongsheng Copper Industry Co., Ltd." achieves excellent results, in particular, the comprehensive optimization of pipeline, equipment installation and foundation positioning have reached expected quality objectives. At the same time, the construction quality is improved through detailed construction process simulation and three-dimensional process disclosure.

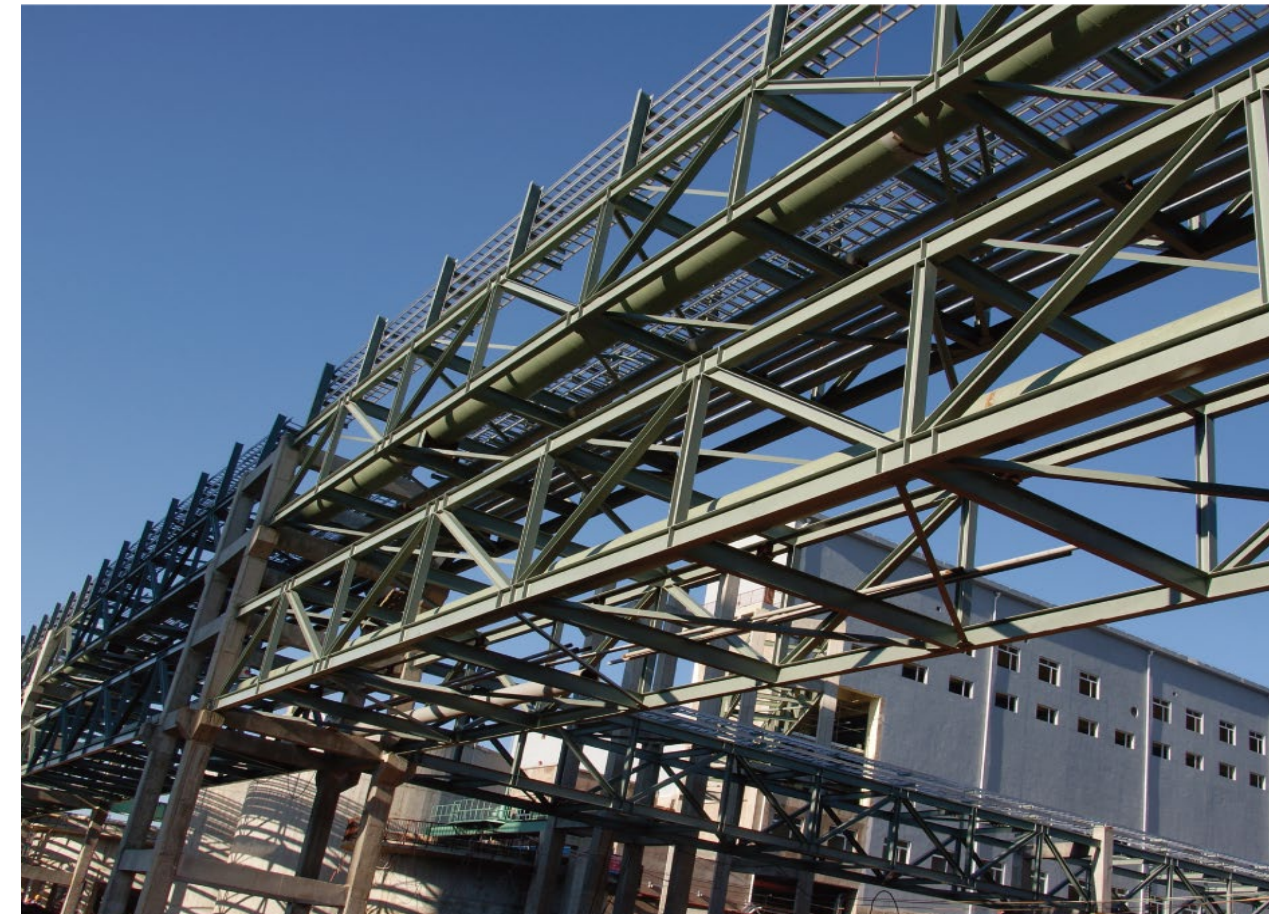
Manufacturing of Furnace Body

炉体制造



公司在冶炼厂冶金炉核心部件，尤其闪速炉制造安装业绩显著，先后承接了贵溪冶炼厂、白银冶炼厂、中原冶炼厂、中铝中南铜业冶炼厂、阳新弘盛40万吨铜冶炼厂、印尼阿曼铜冶炼厂等国内外大型项目闪速炉制造，积累了丰富的闪速炉制造安装经验。

The company has made remarkable achievements in the manufacturing and installation of the core components of smelting furnaces in smelters, especially flash furnaces. Our company has successively undertaken the manufacturing of flash furnaces in other large projects at home and abroad, such as Guixi Smelter, Baiyin Smelter, Zhongyuan Smelter, smelter of Chinalco Southeast Copper Industry Co., Ltd., 400,000-ton copper smelter of Huangshi Yangxin Hongsheng Copper Industry Co., Ltd. and Oman copper smelter, and has accumulated rich experiences in manufacturing and installation of flash furnaces.



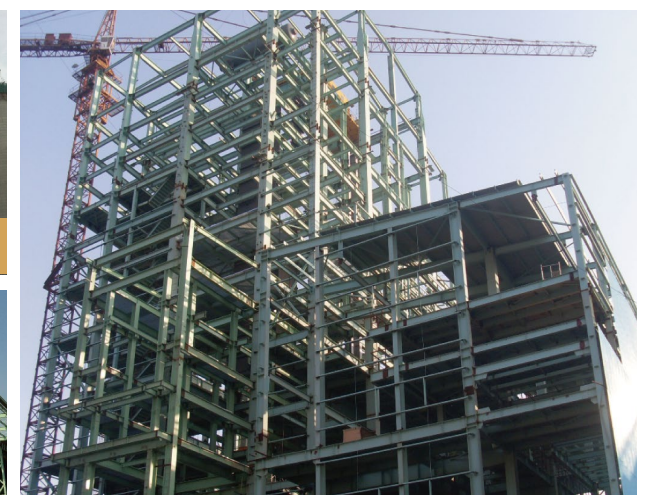
管网架桥
Pipe network bridging



成品库钢屋架
Steel roof truss of finished product warehouse



锅炉房
Boiler room



熔炼工段高跨厂房主体
Main body of smelting section high-span plant



干吸工段
Drying and adsorption section



熔炼车间
Meltshop

中国十五冶拥有3家钢结构厂，总占地面积22.7万m²，厂房建筑面积6.6万m²，已建成品H型钢、板拼H型钢、非标设备等10条生产线，年产能4.6万吨；拥有大型设备520余台套。

15MCC has three steel structure plants, covering a total area of 227,000 m², plant construction area of 66,000 m², with 10 production lines for finished H-shaped steel, plate-split H-shaped steel, non-standard equipment and so on, an annual capacity of 46,000 tons; more than 520 sets of large-scale equipment.

Skilled Staff

技工队伍

公司拥有一支年富力强、技术精湛的自有技工队伍，核心技工队伍人数稳定在650人左右，满足企业现有资质及公司发展规模对各职业（工种）技术工人的需求，公司拥有产业工人12189人，主要涉及工业建筑、钢结构制安、机电管安装、仪表调试等，工种涵盖电工、钳工、柳工、管道工、起重工等。

公司大力开展技术工人队伍建设工作，多次组织了多个职业（工种）的职业技能等级认定及外聘（劳务派遣）技术工人择优招聘面试工作，壮大了技工队伍。

公司根据技工队伍实际情况，以企业合法合规经营为前提，着力提高劳动生产率，积极探索企业用工转型和优化公司技工队伍结构，培育公司核心竞争力和科技创新能力，为实现企业高质量发展做好技能人才支撑。

The company has a young and skilled technician team, including about 650 core technicians, to meet the existing qualifications of the enterprise and the development scale of the company's needs for technical workers of various specialties (types of work); at present, the company has 12189 industrial workers, mainly involved in industrial construction, manufacturing and installation of steel structures, mechanical and electrical pipe installation and instrument commissioning, etc., and the types of work include electricians, fitters, welders, riveters, plumbers, lifting workers and so on.

The company has vigorously promoted the construction of the skilled worker team, and has organized the identification of the vocational skill levels of various specialties (types of work) and the preferential recruitment and interview of external (labor dispatch) skilled workers for several times to expand the technician team.

Based on the actual situation of the skilled workers and the premise of legal and compliant operation of the enterprise, the company strives to improve labor productivity, and actively discusses the transformation of enterprise employment and the optimization of the technician team structure to develop the company's core competitiveness and scientific and technological innovation capabilities, and provide skilled talent support for achieving the high-quality development of the enterprise.

