

[資料 3]



中国石油化工总公司是1983年7月正式成立的部一级经济实体，具有企业法人地位，实行总经理负责制。总公司现有直属单位68个，包括39个特大型、大型的石油化工、炼油、化纤、化肥企业以及销售、科研、设计、施工、学校等单位，分布在全国各地。在纽约、东京、联邦德国、香港设有代表机构。总部设在北京。直属企业共有职工58万人，另有国内销售系统职工约20万人。注册资本人民币210亿元。固定资产218亿元。1987年销售额人民币461亿元。

根据国务院的规定，石化总公司的宗旨是，搞好我国石油资源的深度加工和综合利用，不断提高现代化管理水平和生产技术水平，取得更好的经济效益，为国家的四个现代化建设积累资金，为国民经济和人民生活提供日益丰富的石油化工产品。其主要任务和业务范围是：（一）根据中国政府的方针、政策管理直属企业，组织推进石化工业的改革、开放；（二）负责组织所属石油化工企业完成国家下达的石油化工生产、建设、国内销售和对外进出口计划；（三）负责组织国内大中型石油化工建设项目的设计、施工和管理；（四）负责石油化工的科技开发和人才开发；（五）管理所属企业的对外合作，包括产品、技术、设备、劳务等进出口事项，指导和管理中外合资企业；（六）上级主管部门委托的其它重要业务。

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China Petro-Chemical Corporation (SINOPEC in abbreviation) is a ministerial level economic entity. Established in July 1983, the Corporation has full qualifications for being a juridical body corporate. The President is in charge of the overall operation. SINOPEC, with its headquarters in Beijing, has 68 subordinate enterprises and institutes located in all the parts of China, and among which 39 are giant and large-sized refineries, works & plants of petrochemical products, fibre and fertilizer, while the rest are engaged in sales, scientific research, design, construction, education, etc. SINOPEC International Company established its representative offices in New York, Tokyo, the Federal Republic of Germany and Hong Kong. SINOPEC has approximately 580000 staff members and workers, and in addition, it has about 200,000 staff members and workers in the domestic sales system of petroleum products. Its registered capital is 21 billion yuan (R.M.B.), its net fixed assets are 21.8 billion yuan (R.M.B.), the total sales are 46.1 billion yuan (R.M.B.) in 1987.

The purposes of SINOPEC specified by the State Council comprise: making a good job upgrading and comprehensive utilization of crude oil, continuously raising the modernization managerial and technological level as well as the economic benefits, accumulating funds for China's four modernizations and meeting the ever-growing domestic demand for petrochemical products in the national economy and people's life. The main task and scope of business of SINOPEC comprise:

1. In accordance with the policies formulated by the Chinese government, to strengthen the administration of its subordinate enterprises, to be responsible for organizing and promoting the reform of the economic and management systems of the petrochemical industry;

2. To be responsible for organizing its subordinate enterprises to fulfil the plan assigned by the government for production, construction, domestic marketing, import & export business in petrochemical industry;

3. To be responsible for organizing the design, construction and management of the large and middle petrochemical construction projects;

4. To be responsible for the petrochemical R & D work and personnel training and education;

5. To manage technical and economic cooperation of subordinate enterprises with foreign countries, including import and export business of products, technologies, equipment and labour forces, to guide and manage joint venture enterprises with foreign firms;

6. Entrusted by the State Council, SINOPEC is responsible for overall planning of production and construction, as well as working out long-term development policies of China's petroleum refining and petrochemical industry, and putting them in effect upon the approval of the State Council.

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年度报告

ANNUAL REPORT

总经理 陈锦华

Chen Jinhua, President



石化工业在改革开放中再上新台阶

1987年是中国石油化工总公司在改革中全面发展、大步前进的一年。在党中央、国务院的领导下，在各部门、各地区的支持下，中国石油化工总公司围绕继续实施国务院批准的总公司改革方案，完善内部承包经营、加快重点工程建设和企业的技术改造，广泛、深入开展“双增双节”运动，全面超额完成了国家计划，全年销售额461亿元，比1986年增长11.2%；完成工业总产值354亿元，比1986年增长8.5%；实现利税158亿元（其中销售直属企业13.3亿元），比1986年增长4.6%。

一、生产稳定发展，经济效益持续上升。在继续搞好油、化、纤整体结合、合理利用资源的基础上，组织加工计划外原油530万吨，促进了企业搞活和增产增收。1987年加工原油9000万吨，比1986年增长5.1%；生产汽油、煤油、柴油、润滑油四大类石油产品4346万吨，比1986年增长3.8%；乙烯81.8万吨，比1986年增长39.6%；塑料72.6万吨，比1986年增长30.8%；合成纤维32.8万吨，比1986年增长4.9%；合成橡胶14.5万吨，比1986年增长12.5%；尿素468万吨，比1986年增长13.2%。各企业努力实现安全、稳定、长周期、满负荷生产，提高生产和经

PETROCHEMICAL INDUSTRY STEPS ON TO A NEW STAGE IN REFORM AND OPENING TO THE OUTSIDE WORLD

For China Petro-chemical Corporation 1987 was a year of all-round development and advances in big strides amid reforms. Under the leadership of the Central Party Committee and the State Council, and with the support of various departments and districts as well as with continuing implementation of corporate reform program approved by the State Council as the core, China Petrochemical Corporation perfected management by internal contract, accelerated construction of key engineering projects and technical transformation of enterprises, carried out extensively and profoundly the movement of "increasing production and practicing economy as well as increasing revenue and saving expenditure," resulting in general fulfilment of the state plan. The year's sales revenue reached 46.1 billion yuan, 11.2% over 1986, the total industrial output value amounted to 35.4 billion yuan, 8.5% over 1986; and the profit and tax realized was 15.8 billion yuan (of which 1.33 billion yuan were from sales enterprises directly under the Corporation), 4.6% over the previous year.

1. Steady development of production with persistent increasing in economic benefits.

On the basis of integration of petroleum products with chemicals and fibres and rational utilization of resources, 5.30 million tons of extra-plan crude oil were processed to help invigorating enterprises and increasing production and revenue as well. In 1987, 90 million tons of crude oil were processed and 43.46 million tons of gasoline, kerosene, diesel oil and lubricating oil were produced, 5.1% and 3.8% respectively over 1986. Ethylene produced amounted to 818 thousand tons, being 39.6% over 1986. Production of plastics, synthetic rubber and fibres reached 726,145 and 328 thousand tons respectively, 30.8%, 12.5% and

营管理水平。

二、基本建设和技术改造全面丰收。全年完成基本建设投资67.9亿元，有48套装置建成。齐鲁、扬子的30万吨乙烯一期工程，按预定目标全面完成，分别于“87.5”、“87.7”化工投料试车一次成功，连续创造了国内同类装置开车的最好水平。加上1986年投产的大庆30万吨乙烯，使我国在一年多的时间里，增加了90万吨乙烯生产能力。上海30万吨乙烯一阶段工程，作为投资和金融体制改革相结合的探索，采取国内外集资的办法，于5月份全面开工建设；宁夏化工厂、洛阳炼油厂、广州石化总厂、镇海石化总厂等新建、扩建工程都进展较快。全年完成技术改造投资13亿元，完成比较重大的技术改造项目35项。这些项目的建成投产，为石化工业新的崛起充实了新的基础。

三、科研开发和科技进步又取得新进展。在积极吸收、消化引进技术的同时，抓紧引进工艺技术和装备的国产化、抓好重点科研开发、攻关，推进技术进步。乙烯裂解以及以重油为原料的合成氨等一批项目的工艺、装备国产化有了进展。全系统有125项科技成果通过鉴定，其中有9项获国家科技进步奖，有3项获国家发明奖，有94项被评为总公司科技进步奖。一批科技成果进入科技市场。已申请专利196项，获准28项。

四、发展横向经济联合，经济实体的吸引力和辐射力进一步加强。总公司按照不同投资比例“分产品、分利润、分算产值、分计税额”的“四分”政策，同地方合资建设大型石油化工项目，先后同17个省、市、自治区及3个计划单列市共同集资建设石油化工项目，已经批准和正在商谈的联合建设项目共有26个，其中乙烯7套，能力约110万吨，大化肥5套，尿素能力约360万吨。总公司及所属企业同外部联营的企业已达700个，与外部科研单位组成科研联合体40多个，联合办学70多家。

4.9% respectively over the previous year. The production of urea was 4.68 million tons, 13.2% over 1986. All enterprises had been striving to realize safe, steady, full-load, and long cycle production and enhance the production and management level.

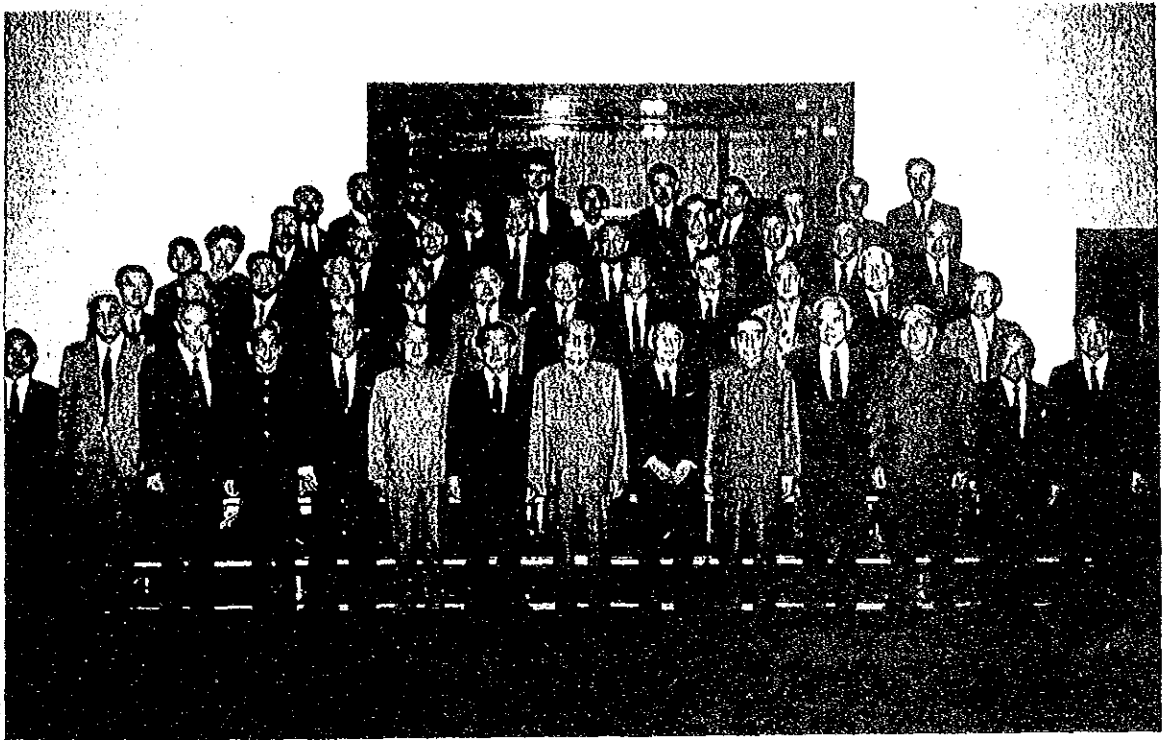
2. Overall good harvest in capital construction and technological transformation.

An annual investment of 6.79 billion yuan in capital construction was fulfilled in 1987 and 48 production units were built in the same period. The first-phase project of two 300,000 ton ethylene units in Qilu Petrochemical and Yangzi Petrochemical Corporation were completed on schedule and were successful in on stream production in May and July 1987, respectively creating successively the best results compared with similar cases in the country. These, together with the 300,000 ton ethylene unit of Daqing which was put into operation in 1986, have contributed to an increase of 900 thousand ton in the production capacity of ethylene within a period of one year and more. The first-phase project of Shanghai's 300,000 ton ethylene unit being an exploratory case of integrating reforms in investment and financing systems by collecting funds both in the country and abroad, started all-round in May. The grass-root and expansion projects of Ningxia Chemical Works, Luoyang Refinery, Guangzhou General Petrochemical Works, Zhenghai General Petrochemical Works and others all proceeded quite rapidly. An investment of 1.3 billion yuan in technical revamp was fulfilled and 35 projects of great importance completed. The completion and start-up of these projects contributed significantly to the foundation for a new upsurge of petrochemical industry.

3. New advances were recorded in research and development as well as in scientific and technological progress. While actively absorbing and digesting foreign technology imported from foreign countries, stresses were laid on domestication of imported process technology and equipment as well as on key research and development projects and on tackling key technical problems so as to promote technical improvement. The domestication of technology and equipment of a number of projects such as ethylene cracking and synthetic ammonia based on heavy oil as feedstock gained progress. 125 scientific and technological results of the industry passed technical appraisal, of which 9 were awarded the state prize for Progress in Science and Technology, 3 were awarded the state prize for Invention, and 94 obtained the Corporation prize for Progress in Science and Technology. A number of the results entered the scientific and technical market. The number of patent application was 196, of which 28 were approved.

4. The attraction and the radiation power of economic entity were further enhanced through horizontal economic coalition.

The Corporation, with the local enterprises was able to jointly finance large petrochemical projects according to the policy of "sharing of products and profits and separately counting of output



国家主席李先念会见参加齐鲁、扬子30万吨乙烯一期工程开工典礼的外国来宾。

President Li Xian-Nian interviewed the foreign visitors attended the opening ceremony of the first phase of Qilu and Yangzi 300,000 ton ethylene plants.

五、发挥产销结合的优势，产品销售兴旺。总公司通过充分发挥工贸结合的优势，千方百计安排好支农、交通、国家重点工程和救灾用油，努力开拓石油化工市场。全年供应四大类油品4035万吨，比1986年增长10%。到1987年底，全国已有加油站4400座，其中有2500座是产销合一后建设的。

六、努力发展外向型经济，开拓出口创汇、利用外资、引进技术和人才的新途径。总公司发挥经济实体的优势，利用企业地处特区和沿海开放区的有利条件，加快对外开放。全年出口各种石油产品515万吨，创汇8.08亿美元；引进技术、单机和化工原料3.2亿美元。总公司已建立中外合资企业16家，中国太阳油、中康、中加高桥—宝兰山等公司业务取得好进展。总公司同国外一些银行、银团建立资金融通关系。技术和劳务出口也有了好的开端，结束了我国石化工业技术引进而无出口的历史。

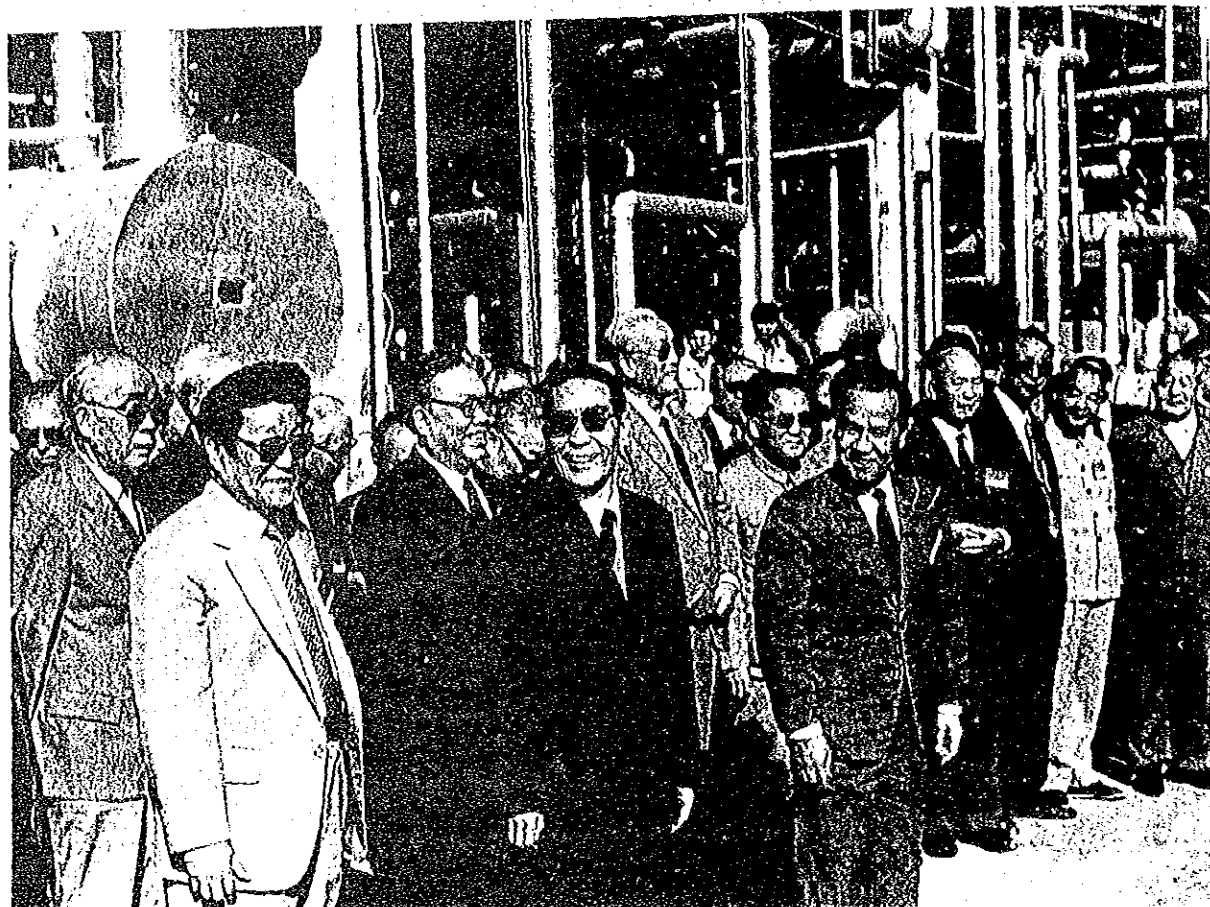
and tax." 17 provinces, municipalities and autonomous regions and 3 municipalities with separately drawn up plans successively join in with the Corporation to collect funds for constructing petrochemical projects. 26 such joint ventures have been approved or in the course of negotiation, among which were 7 ethylene units with a total capacity of approximately 1.1 million ton and 5 chemical fertilizer units with a urea capacity of 3.6 million ton. The number of joint ventures formed by enterprises directly under the Corporation and the Corporation itself with other enterprises has amounted to 700; more than 40 joint entities of scientific research were formed with research institutions outside the Corporation; more than 70 joint educational institutions were established.

5. The advantage of integrating production with marketing was brought into full play and sales of products were booming. By bringing into full play the advantage of integrating industrial production with trading, the Corporation did its best to arrange the oil supply to satisfy the needs of agriculture, transportation, the State key projects and relief of disaster, and to explore with great efforts the petrochemical market. In 1987, 40.35 million tons of the four major petroleum products were supplied, with an increase of 10% over 1986. By the end of the year there had been 4,400 gas stations all over the country, of which 2,500 were established by means of integration of production with marketing.

6. Striving for developing an outwardly oriented economy, ex-

1988年是国家“七五”计划的第三年，是总公司实施六年改革方案的第四年，这一年的工作起着承前启后的作用，1988年的主要任务是：坚决贯彻中央关于“经济要进一步稳定，改革要进一步深化”的指导方针，

深入开展“双增双节”运动，深化企业改革，完善承包经营，积极推进科技进步，全面完成和超额完成国家计划，在改革、开放中开拓加快发展石化工业的新路子。



国务委员康世恩参加齐鲁30万吨乙烯一期工程开工典礼

State Council member Kang Si-En attended the opening ceremony of the first phase of Qilu 300,000 ton ethylene plant.

ploring new ways of promoting export to generate foreign exchange, utilizing foreign capital and introducing technology and personnel from abroad.

6. The Corporation, making the most of the advantage inherent in an economic entity, utilized the unique conditions of those enterprises, located in the special economic zones and the coastal open areas to accelerate the process of opening to the outer world. Petroleum products amounting to 5.15 million tons were exported in the year, generating foreign exchange of US \$ 808 million, and technology, machinery and chemical raw materials worth of US \$ 320 million were imported in the same time. The Corporation has already established 16 joint ventures with foreign partners. The business of companies such as China Sun oil, Sinocon, Sino-Canadian polysar ran smoothly. Moreover, relationships of capital accommodation among the Corporation, foreign banks and

banking consortia were established. Export of technology and labor also had a good beginning, thus, bringing an end to the history of only importing without exporting technology.

1988 is the third year of the State's "Seventh Five Year Plan" and the fourth year of implementation of the corporate reform program as well as a year linking the past with the future. The major tasks of 1988 are: firm implementation of Party Central Committee's policy of "further stabilizing economy and deepening reform"; further carrying out of the movement of "increasing production and practicing economy and increasing revenue and saving expenditure"; deepening of reform in enterprises; perfection of management and contracting; active promotion of progress in science and technology; comprehensive fulfilment and over-fulfilment of the State plans, and exploration of new means to accelerate the development of the petrochemical industry.

总公司组织机构

CORPORATE ORGANIZATION



副总经理

Vice Presidents

技术经济顾问委员会

Technological and Economic
Advisory Commission

法律顾问组

An advisor group on legal affairs

总经理:

陈锦华

President:

Chen Jinhua

副总经理:

张万欣 总经理兼任
盛华仁
费志融
李毅中

Vice Presidents:

Zhang-Wanxin 副总(负责国际业务)
Sheng Huaren 副总(负责国内业务)
Fei Zhirong 副总(负责技术)
Li Yizhong 副总(负责管理)

单位名称

总公司机关

Headquarters

直属单位

Subsidiaries

	办公厅	Administrative Office	
	计划财务部	Planning & Financial Division	计划、财务
	生产管理部	Manufacturing & Management Division	生产管理
	发展部	Development Division	发展、计划
	工程建设部	Engineering & Construction Division	工程建设
	人事部	Personnel Division	
	审计室	Audit Office	
	经济信息中心	Economic Information Center	
	政治工作办公室	Political Affairs Office	
	安全生产监督委员会	Safety Production Supervision Committee	
	国际事业公司	China Petrochemical International Company	国际事业
	供应制造公司	Supplying & Fabricating Company	供应制造
	销售公司	Sales Company	
	石油化工规划院	Petrochemical Planning & Engineering Institute	
	科技情报研究所 (包括烃加工出版社)	Science & Technology Information Research Institute (Including: The Hydrocarbon Processing Press)	
	管理干部进修学院	Management Personnel Up-grading College	
	深圳及其它办事机构	Shenzhen & Other Offices	
	下属企事业单位	Subordinate Enterprises and Institutions	

国际贸易与合作

International Trade And Cooperation

几年来为了满足石油化工生产和建设发展的需要,在引进国外先进适用的技术、单项设备、化工原材料和出口石油及石油化工产品,开展经济技术合作、对外交流、筹措外资等方面做了大量的工作,取得了一些实质性的成果。

一、出口贸易

从1984年至1987年共计出口石油产品2374.55万吨,为国家创汇累计金额达45.89亿美元。其中1987年共出口各种石油产品515.13万吨,金额8.08亿美元。分项数字如下:

项 目	数量(万吨)	金额(百万美元)
汽 油	114.28	177.81
煤 油	46.65	80.17
柴 油	148.84	232.28
润滑油	2.89	9.03
其 它	202.47	308.55
合 计	515.13	807.84

此外,一九八七年还出口一些其他石油化工产品,金额达56.92百万美元。

在技术出口方面,继1986年签订SBS技术出口合同后,1987年又和外商在聚丙烯和催化裂化催化剂制造技术和延迟焦化生产技术等方面进行探讨,并参加了在香港举行的首届中国工业技术出口交易会,和外商签订了五项技术出口意向书和两项技术产品出口意向书,使石油化工技术的出口有了良好的开端。

二、进口贸易

四年来由中国石油化工总公司直接组织进口的技术和物资总金额达23.63亿美元。其中技术引进成交额累计达9.17亿美元,1987年为2.997亿美元;四年进口机械、设备、仪表、零配件和金属材料累计达8.47亿美元,1987年为2.13亿美元;四年进口化工原材料和辅助材料累计5.99亿美元,

SINOPEC has been working effectively on importing advanced foreign and appropriate technologies and complete sets of equipment, special equipment and chemical raw materials, exporting petroleum and petrochemical products, carrying out economic and technical cooperation and exchange, collecting foreign capital, etc, so as to satisfy the demands of petrochemical production and project construction, fruitful results have been achieved.

1. Export Business

SINOPEC exported various petroleum products in the amount of 2374 million tons which valued at 4589 million U.S. dollars from 1984 to 1987. Among them in 1987 exported products were 515 million tons at a value of 808 million U.S. dollars. Details are listed below:

Item	Quantity (10,000 tons)	Value (million U.S.\$)
Gasoline	114.28	177.81
Kerosene	46.65	80.17
Diesel fuel	148.84	232.28
Lube oil	2.89	9.03
Others	202.47	308.55
Total	515.13	807.84

In 1987 SINOPEC also exported some petrochemical products which valued at 56.92 million U.S. dollars.

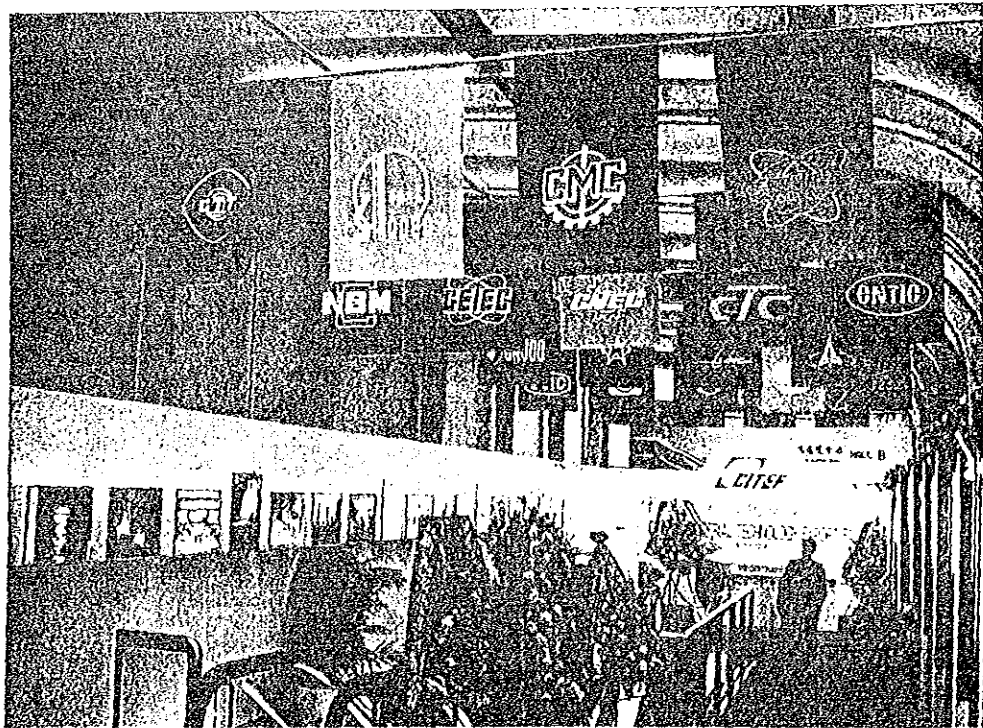
In regard to technical exporting, after signing a licence agreement for SBS technology in 1986, in 1987 SINOPEC entered into negotiations with foreign companies on catalysts manufacturing technology for polypropylene and catalytic cracking as well as the Technology for delayed coking. SINOPEC Int'l attended "China Industrial technology Export Fair" in Hong Kong and signed 5 letters of intent for technology transfer and 2 for products manufacturing technique. This made a good beginning for petrochemical technology export.

2. Import Business

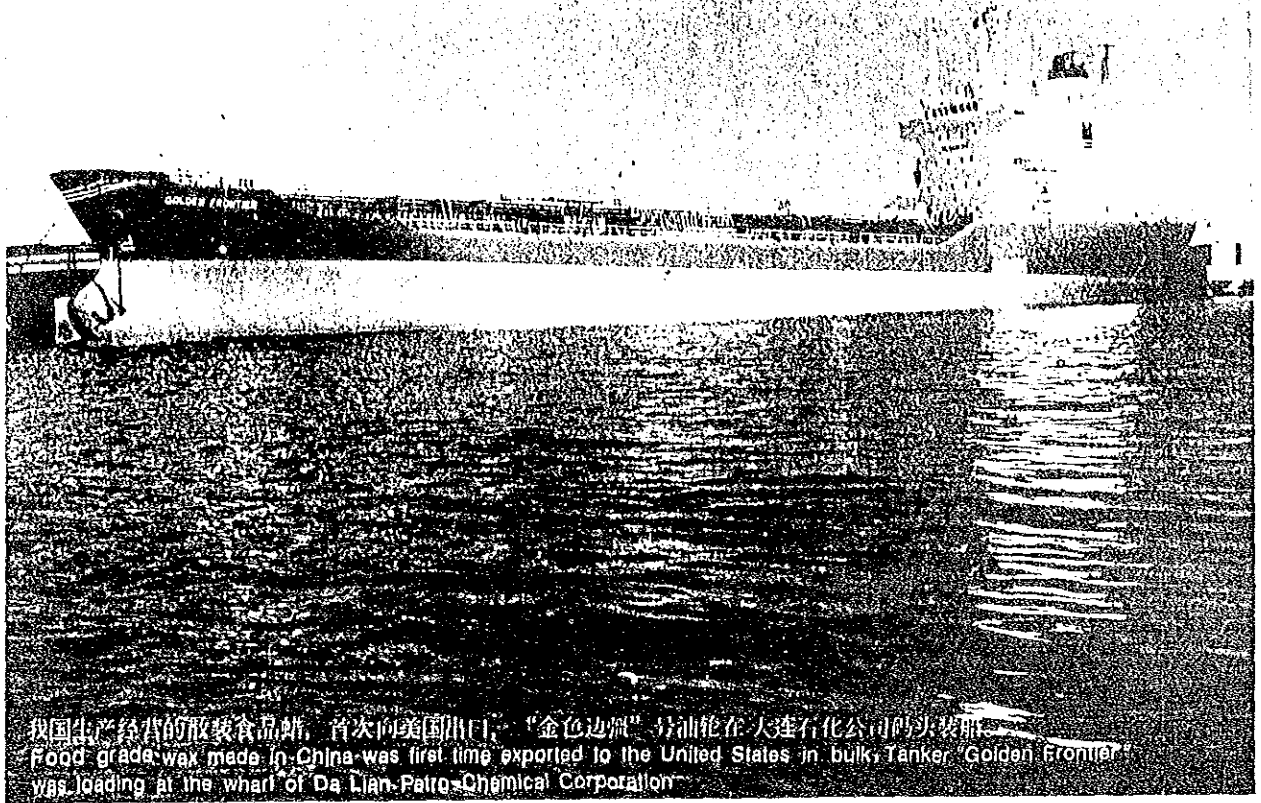
The technology and material which were directly imported by SINOPEC from 1984 to 1987 valued at 2.363 billion U.S. dollars. Among them, the total amount for technology import was 917 million U.S. dollars and that of 1987 was 299.7 million U.S. dollars. The total value for machine, equipment, instrument, spare parts and materials imported was 847 million U.S. dollars and that of 1987 was 213.32 million U.S. dollars, the accumulated value for chemical raw material import in the last four years was 599 million U.S. dollars. These imported technologies and materials played an important role in production and construction successively, for example, the first phase of 300,000 tons



总经理陈锦华参加香港来华国际化工设备展览开幕式
President Chen Jinhua attended the opening ceremony of International Chemical Equipment Exhibition from Hong Kong.



总公司参加在香港举办的首届中国工业技术出口交易会
Sinopec took part in the China Industrial Technology Export Fair in Hong Kong



1987年为1.44亿美元。引进的这些技术和器材物资已陆续在生产和建设中发挥作用，例如大庆、齐鲁、扬子三个30万吨乙烯工程的第一期建设工程已分别建成并正式投入使用，一些重点炼油厂技术改造项目——重油催化裂化、烷基化和催化裂化烟气能量回收系统也先后建成投产，从而推动了我国石油化工工业向前发展和技术进步。

三、技术交流和科技合作

总公司成立后，就派出代表团到美国、日本、加拿大、英国、法国、联邦德国等国访问，与这些国家的重要石油化工公司的高层领导进行直接对话，讨论加强双方的进一步合作问题，同时总公司每年除派出各种贸易团、组赴国外洽谈贸易业务，进行贸易考察，参加项目设计、采购、检验和技术培训外，还派出科技考察团、组出国考察，参加国际会议，并邀请外国专家来华交流、讲学或短期工作，仅1987年就派出各种考察团组

ethylene projects in Daqing, Qilu and Yangzi have been completed and put into operation. Some key projects for refinery revamping, such as heavy oil catalytic cracking, alkylation, and the energy recovery in the flue gas system for catalytic cracking have been set up and put into operation. These should bring China's petrochemical industry development forward and speed up the technical progress.

3. Technical Exchange and Cooperation

After the establishment of China Petrochemical Corporation, on the one hand, SINOPEC's delegations visited Japan, the United States, Canada, the United Kingdom, France and F.R. Germany, etc., and communicated with top management people of the major petrochemical corporations, discussing the ways of strengthening further mutual cooperation; on the other hand, we also dispatched various trade groups and teams to make business and technical survey, to take part in project procurement work, to inspect equipment and to carry out operation training abroad, in addition, we sent out a lot of technical groups outside for technical survey and attending international conferences. Foreign specialists were invited to exchange technology, deliver technical lectures and work for short period in China. In 1987 we sent out 57 different technical investigation groups and 335 persons, attended 27 international conferences and

57个共335人，参加国际会议27次，邀请来华进行科技交流113项，聘请国外专家来华工作13人，有550名工程技术人员来华到建设工厂的现场进行技术服务和技术指导。此外，总公司还先后在苏联、加拿大等国举办了经济贸易展览会，介绍了总公司生产的产品和成就，现在总公司已经同世界上46个国家和地区的800多家企业、银行建立了广泛的贸易和业务联系。

四、技术经济合作、工程承包和劳务合作

几年来总公司系统和外商先后开办了合资经营的项目有18项，它们包括设置在美国休斯敦市销售石蜡及蜡制品的中康石油公司、北也门伊兹市生产和销售洗衣粉的红海洗衣粉厂和香港地区经销液化气的金润石化有限公司，其他15项则分别设置在国内各地。此外，还办理了补偿贸易7项，来料加工2项，合作生产2项，国际租赁1项。以上这些合作项目，涉及到工艺生产技术、产品制造和销售、工程设计、咨询和技术服务等方面。投资规模最大的超过1亿元人民币，最小的不到10万元人民币。

1987年派遣了13名专家和技术工人去国外执行技术和劳务服务合同。

113 experts were invited to China to exchange technology and 13 foreign specialists for works. 550 foreign engineers and technicians went to job site to work and provide technical service. SINOPEC also attended "China Economic and Trade Exhibition" both held in the Soviet Union and Canada. We have already established business contacts with over 800 foreign enterprises and banks in 46 foreign countries and regions.

4. Technical and Economic Cooperation, Project Contracting and Labour Service.

Since the establishment of China Petrochemical Corporation, it has set up 18 joint ventures projects with foreign companies, including Sinocon Petroleum Company Inc., selling wax and its products in Houston, U.S.A., Red Sea Washing Powder Plant to produce and sell washing powder in the Arab Republic of Yemen and Golden Resources Petrochemical Company Inc. to sell liquefied gas in Hong Kong, other 15 projects are located at home. SINOPEC also handled 7 projects for compensation trade, 2 for processing imported materials, 2 for cooperative production and 1 for international lease.

The projects listed above are concerned with the process technology, product manufacturing, marketing, engineering design, consultation and technical service, etc. The maximum size for the investment of the above projects is more than RMB 100 million yuan, and the minimum is less than RMB 400 thousand yuan. In 1987, SINOPEC dispatched 43 specialists and technicians to perform technical and labour service contracts outside.



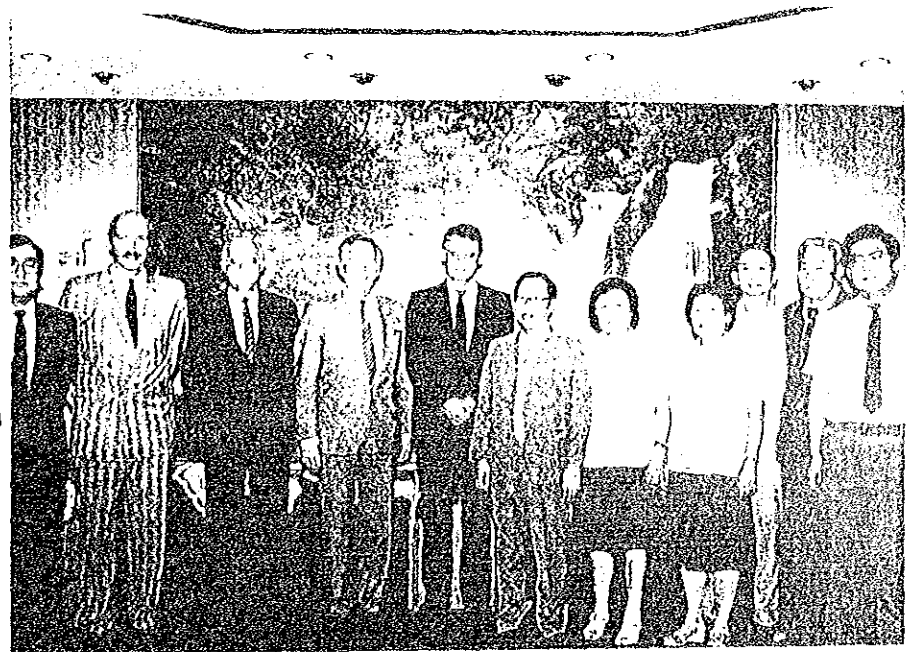
总经理陈德华、副总经理张万欣与委内瑞拉石油化工代表团签订合同协议

President Chen Jinhua and Vice President Zhan Wanxin signed cooperation agreement with Venezuelan Petrochemical Delegation



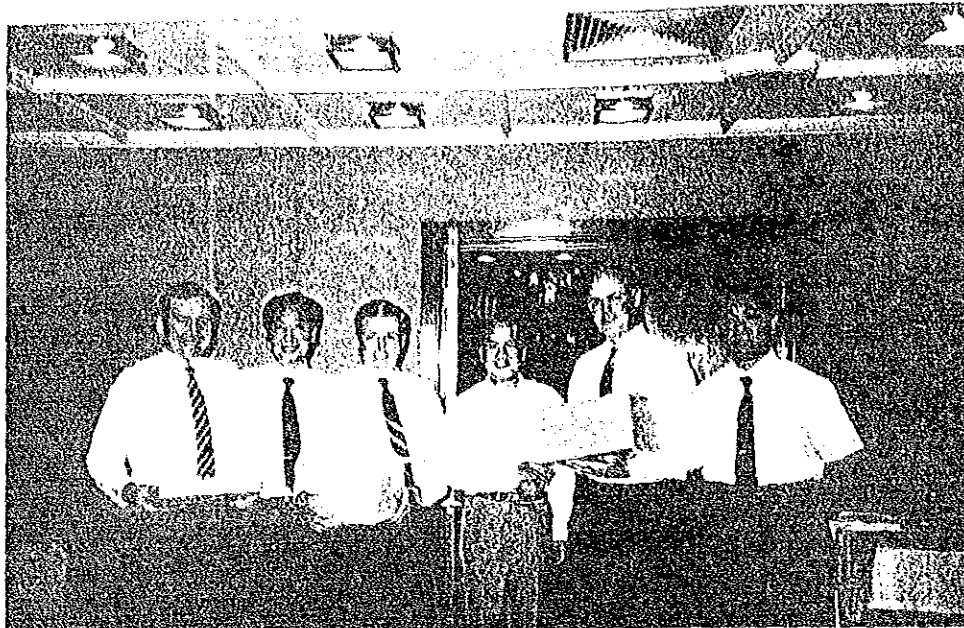
总经理陈锦华、副总经理张万欣、李毅中与参加齐鲁30万吨乙烯工程开工典礼的外宾合影

A photo of president Chen Jinhua and Vice Presidents Zhang Wanxin, Li Yizhong together with foreign visitors attended the opening ceremony of Qilu 300,000ton ethylene project



费志融副总经理会见西德巴斯夫(BASF)公司副董事长 Hans Detzer 博士。

Vice President Fei Zhirong interviewed Vice Chairman Dr Hans Detzer of BASF Co. West Germany



总经理：陈锦华 副总经理：张万欣、盛华仁与加拿大帝国银行董事合影
 President Chen Jinhua, Vice Presidents Zhan Wanxin and Sheng Huaren meeting with Director of Canadian Imperial Bank.



总公司参加在加拿大举办的贸易展览会
 Sinopec took part in the trade exhibition in Canada.

国内贸易

Business in Domestic Market



蜡制产品
Wax products

中国石油化工总公司实行产销合一的体制，设有中国石化销售公司专门负责产品的分配和销售业务。

中国石油化工总公司在各大经济区设有华北、西北、华东、中南、哈尔滨和沈阳6个销售分公司，还在集中产地设有13个分公司，负责产品的收购、调运和供应业务；在上海市和湖南省株洲分别设立了石油商品应用研究所和石油商品储运技术研究所；有四所专业学校和一个培训中心，为销售系统培养专业干部。在各省、自治区、直辖市设有29个省一级公司，负责本地区成品油的销售业务；省以下设有近3000个分支机构，具体组织成品油的经营活。这样，销售公司的经营机构已遍布全国各地，在全国范围构成一个比较完整的销售网络。销售公司系统拥有比较完备的储运设施和经营设施。全系统有3000座油库，近千个铁路接卸点，450多座码头，数千个水上和陆上的加油站，固定资产总值达40多亿元。

产销合一。自1985年总公司完成国内销售业务交接以来，发挥了产销结合的优势。三年来国内成品油供应量逐年增加，1987年国内供应量达到4071万吨，比1984年的3140万吨增加931万吨，加上生产企业直接售给社会上用油单位的80万吨，共增加1011万吨。

三年来销售系统用于储运设施建设(新建扩建油库，购置储罐车、油轮)和技术改造的投资达11.2亿元，其中1987年达到5.4亿元，比1984年的1.57亿元增加了2.4倍，三年建设加油站投资4.3亿元，新建加油站2500座，超过了1984年以前全国所建加油站的总和，目前已拥有加油站4400座。

1987年全系统实现利税42.4亿元，比1984年的27.55亿元增加近15亿元。

1987年分配供应燃料、沥青、液化气、石蜡等产品3464万吨，聚乙烯、聚丙烯、聚苯乙烯、ABS树脂等化工产品150万吨。

China Petrochemical Corporation practising a system of combining production and sales, has set up the China Petrochemical Sales Company in charge of the distribution and marketing of its products.

Under China Petrochemical Sales Company, there are six subsidiaries located in the following six major economic regions: North China, Northwest China, East China, Middle-South China, Harbin and Shenyang. It has thirteen subsidiaries to be responsible for purchase, transport, supply of products in those areas. Petroleum Commodity Application Research Institute and Petroleum Storage and Transportation Technology Research Institute have been set up respectively in Shanghai and Zhuzhou, Hunan province. In addition, there are four professional schools and a training center for personnel training for the marketing system. There are twenty-nine companies of provincial level in each province, autonomous region and municipality in charge of sales of finished products for the respective regions. Besides, there are nearly 3,000 branches under the companies in charge of specific management of finished oil products transactions. Thus, its business establishments are located in all parts of China, forming a relatively complete nation-wide network. SINOPEC's Sales Company is equipped with advanced facilities of storage, transportation and management. There are 3,000 oil terminals, nearly 1,000 railway transport cen-

ters, over 450 docks and thousands of land and marine service stations in the system. The total value of its fixed assets amounts to more than four billion yuan.

SINOPEC has enjoyed the advantages of the combination of production and marketing since the domestic sales system was established in 1985. In the last three years, the domestic supply of refined products increased gradually; in 1987 reached 40,71 million tons as compared with 31.4 million tons in 1984. The production enterprises sold extra 800,000 tons directly to consumers, the increase turned out to be 10.11 million tons totally.

Some 11.2 billion yuan has been invested over the past three years in expanding the oil terminals, purchasing tank trucks and oil tankers as well as technical revamping. 1987 alone saw the investment of up to 540 million yuan, 2.4 times as much as 157 million yuan of 1984. An investment of 430 million yuan was made in the 3 years to set up 2,500 service stations, more than the total number of service stations made before 1984. Now there are 4,400 service stations.

In the year 1987, the profit plus tax turned over the state was 4.24 billion yuan, an increase of 1.5 billion yuan over the 2.755 billion yuan of 1984. In 1987, the company sold 34.64 million tons of fuel oil, bitumen, LPG, and wax and 1.50 million tons of PE, PP, PS, ABS, and other chemical products.



油品库
Oil product tank
park



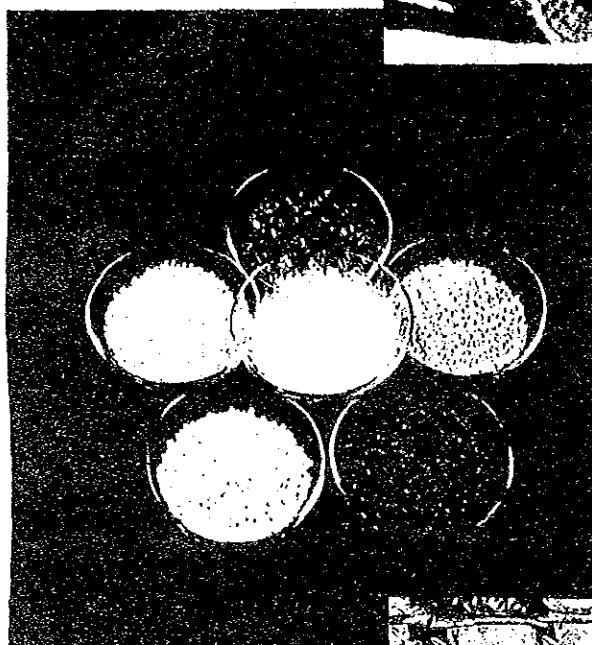
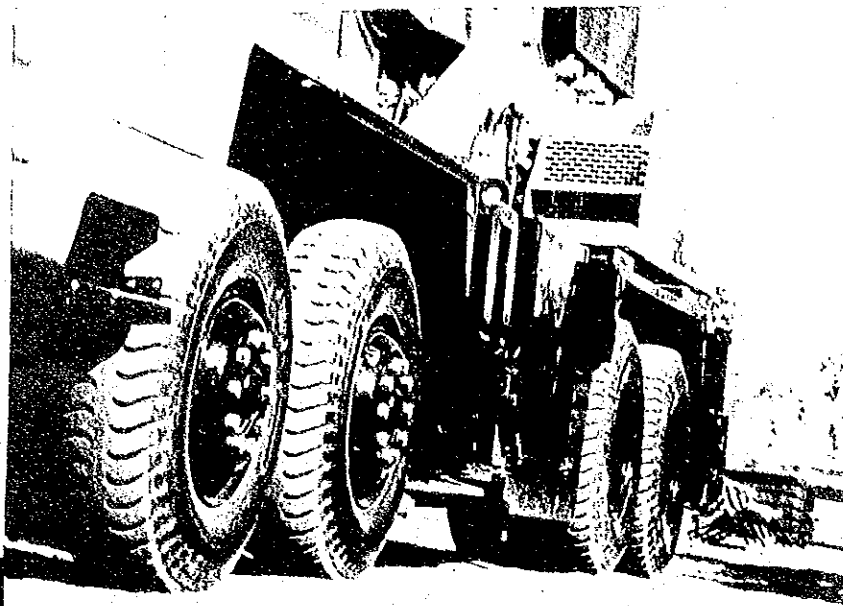
帶有石化銷售公司標志的加油站

Gas station with the brand of Petrochemical Sales Co

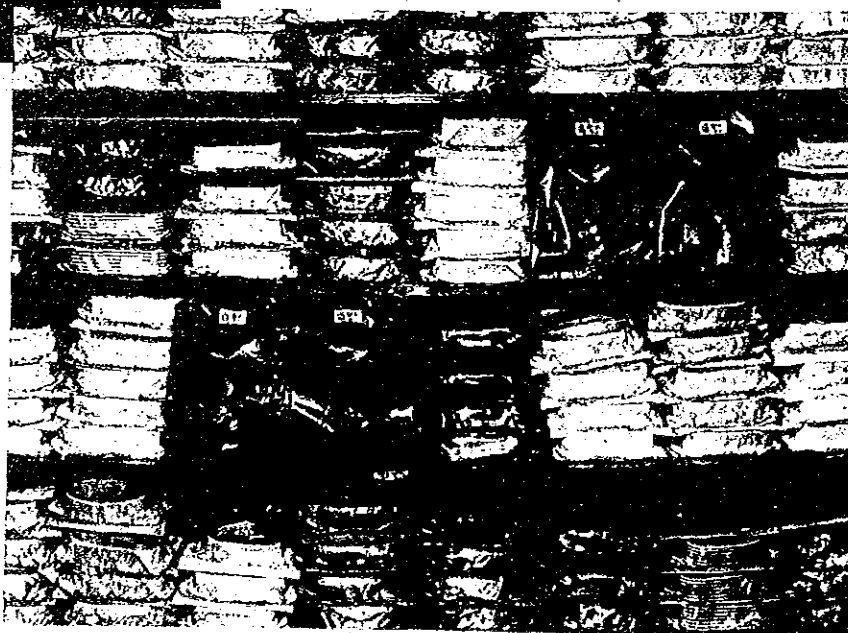


各種潤滑油
Lubricants

橡胶制品
Rubber products.



聚苯乙烯颗粒
polystyrene grain.



合纤制品
Synthetic textiles

年度统计

ANNUAL STATISTICS

资产负债

Consolidated Balance Sheet

		百万元 Millions of Yuan		
资产:	Assets	1985 Dec. 31	1986 Dec. 31	1987 Dec. 31
流动资金	Current assets			
现金	Cash	0.37	0.75	1.08
银行存款	Deposit at bank	829.75	900.50	1,638.27
应收票据	Notes receivable	306.00	333.05	434.07
应收帐款	Accounts receivable	1,181.70	1,522.86	2,596.32
存货	Inventories	10,057.28	10,980.78	9,948.13
材料	Materials	8,711.91	9,100.80	7,799.57
在产品	Work in process	261.75	282.77	328.42
自制半成品	Self-made semiproducts	523.51	765.55	856.84
产成品	Finished products	560.11	831.66	963.30
待摊费用	Unamortized charges	84.75	114.90	171.24
流动资产合计	Total current assets	12,459.85	13,852.84	14,789.11
投资	Investment			
长期投资	Long-term investment	239.59	242.16	365.00
固定资产	Fixed assets			
固定资产原价	Fixed assets at cost	25,585.70	28,599.45	32,507.55
减: 折旧	Deduct: Depreciation	7,810.62	9,275.42	10,705.55
固定资产净值	Net fixed assets	17,775.08	19,324.03	21,802.00
在建工程支出	Construction work-in-process expenditure	8,064.51	10,983.92	14,455.69
资产合计	Total assets	38,539.03	44,402.95	51,411.80

债 表

Balance Sheet

		百万元 Millions of Yuan		
负债及资本	Liabilities and Capital	1985 (Dec. 31)	1986 Dec. 31	1987 Dec. 31
流动负债	Current liabilities			
应付票据	Notes payable	0.45	0.51	0.03
银行借款	Bank loans	736.32	1,166.85	1,780.87
应付帐款	Accounts payable	1,111.70	1,271.10	1,839.60
其它应付款	Accrued liabilities	682.19	815.19	898.50
预提费用	Advance payments	1,265.31	586.95	2,341.69
职工奖励及福利基金	Employee stimulation and welfare funds	644.11	993.24	1,328.10
流动负债合计	Total current liabilities	4,440.14	4,833.84	7,782.59
长期负债	Long-term debt			
长期银行借款	Long-term bank loans	3,407.08	6,950.05	10,522.65
其它长期借款	Other long-term loans	214.41	37.68	78.75
负债合计	Total liabilities	8,061.63	11,821.57	18,788.99
资本	Capital			
资本	Capital	21,290.28	24,786.75	24,976.62
储备基金	Reserve funds	6,004.37	4,133.24	3,074.02
企业发展基金	Enterprise development funds	3,182.75	3,661.39	4,071.68
资本合计	Total capital	30,477.40	32,581.38	32,622.32
负债及资本合计	Total liabilities and capital	38,539.03	44,402.95	51,411.31

主要产品产量

MAIN PRODUCT ANNUAL PRODUCTION

产品名称	Product Name	百万吨 Millions of Tons		
		1985	1986	1987
汽油	Gasoline	13.46	15.39	15.82
煤油	Kerosene	3.94	4.05	4.07
柴油	Diesel fuel	18.90	20.92	21.94
润滑油	Lubricating oil	1.43	1.50	1.60
溶剂油	Hydrocarbon solvents	0.27	0.35	0.36
燃料油	Fuel oil	26.41	27.43	28.80
石蜡	Petroleum wax	0.54	0.57	0.61
石油焦	Petroleum coke	0.89	1.01	1.13
石油沥青	Petroleum asphalt	2.14	2.24	2.27
洗涤剂原料油	Feedstock of detergent	0.04	0.04	0.04
化工轻油	Light oil for chemical industry	5.29	6.21	6.20
其中: 石脑油	Naphtha	1.60	1.14	0.73
乙烯	Ethylene	0.55	0.59	0.32
塑料	Plastics	0.50	0.56	0.73
合成橡胶	Synthetic rubber	0.13	0.13	0.15
合成纤维单体	Synthetic fibre monomer	0.49	0.50	0.52
合成纤维聚合物	Polymer for synthetic fibre	0.45	0.46	0.48
合成纤维	Synthetic fibre	0.31	0.31	0.33
合成氨	Synthetic ammonia	2.58	2.72	3.03
氮肥(折合氮100%)	Nitrogen fertilizer (100% N base)	1.89	1.98	2.19
尿素	Urea	3.90	4.14	4.68

主要产品销售量

SALES BY MAIN PRODUCTS

商品名称	Commodity Name	百万吨 Millions of Tons		
		1985	1986	1987
汽油	Gasoline	14.69	15.62	17.33
煤油	Kerosene	4.06	4.00	4.05
柴油	Diesel fuel	19.48	21.00	22.91
石脑油	Naphtha	1.576	1.16	1.13
液化气	LPG	0.73	1.20	1.41
润滑油	Lubricating oil	1.65	1.64	1.77
燃料油	Fuel oil	26.24	23.30	27.09
石油沥青	Petroleum asphalt	2.00	2.48	2.48
石油焦	Petroleum coke	0.86	1.01	1.13
石蜡	Petroleum wax	0.54	0.60	0.62
液体石蜡	Liquid paraffin	0.04	0.04	0.04
聚乙烯①	Polyethylene	0.33	0.31	0.51
聚苯乙烯①	Polystyrene	0.03	0.02	0.03
聚丙烯①	Polypropylene	0.14	0.10	0.17
丙烯腈②	Acrylonitrile	0.07	0.07	0.08
ABS③	ABS	0.01	0.01	0.01
乙苯①	Ethylbenzene	0.07	0.07	0.07
苯乙烯②	Styrene	0.07	0.07	0.08
乙二醇③	Ethylene glycol	0.16	0.16	0.13
对苯二甲酸③	Terephthalic acid	0.21	0.15	0.21
DMT③	DMT	0.22	0.21	0.18
尼龙66盐	Nylon-66 salt	0.03	0.03	0.04

注: ①包括化工部生产的

②包括化工部生产的和进口的

③包括进口的

损益表

Profit and Loss Account

		百万元 Millions of Yuan		
		1985	1986	1987
产品销售收入	Product sales income	35,933.70	41,483.93	46,128.95
减: 产品销售税金	Deduct: Product sales taxes	10,265.21	10,742.69	10,921.92
产品销售成本	Product sales costs	21,697.09	26,171.74	29,920.92
产品销售毛利	Product sales gross profit	3,971.40	4,569.50	5,286.11
减: 销售费用	Deduct: Selling expenses	66.08	117.70	124.41
管理费用	Administrative expenses	1.11	1.15	2.38
产品销售利润	Product sales profit	3,904.21	4,450.65	5,159.32
加: 其它业务利润	Add: Other business profit	51.50	57.81	66.27
营业外利润	Non-operating profit	-114.30	-154.90	-202.38
加: 营业外收入	Add: Non-operating income	14.44	19.03	48.91
减: 营业外支出	Deduct: Non-operating expenses	128.74	173.93	251.29
利润总额	Total profit	3,841.41	4,353.56	5,427.97

研究与开发

Research and Development

中国石油化工总公司目前共拥有61个研究所，直属院所为4个；公司（总厂）所属院所为57个。院所职工总数有16000余人，其中科技人员约7000余人，而高、中级研究人员约占4400余人。

近年来，总公司较注意发挥行业优势，例如组建了“聚酰胺”、合成橡胶与胶乳”等中心。以行业为核心，开展了各部门各系统的科技横向联合，形成了多层次的行业网状结构，使行业信息更为灵通，技术交流更趋广泛。

此外，总公司与国内科技力量雄厚的大学和科学院等组成联合研究所，使某些学科和领域，如精细化工、化学工程及生物工程等方面得到了充实、加强与提高。

一九八七年总公司获奖的科技项目计103项，其中30多项达到或接近国际先进水平，50多项达国内先进水平。这些成果运用在工业生产上已取得较大的经济效益和社会效益。

此外，1987年也鉴定了一批重大科技成果，这些成果大部分已经过工业试用并取得了很好的效益。现将重大科技成果举例说明如下：

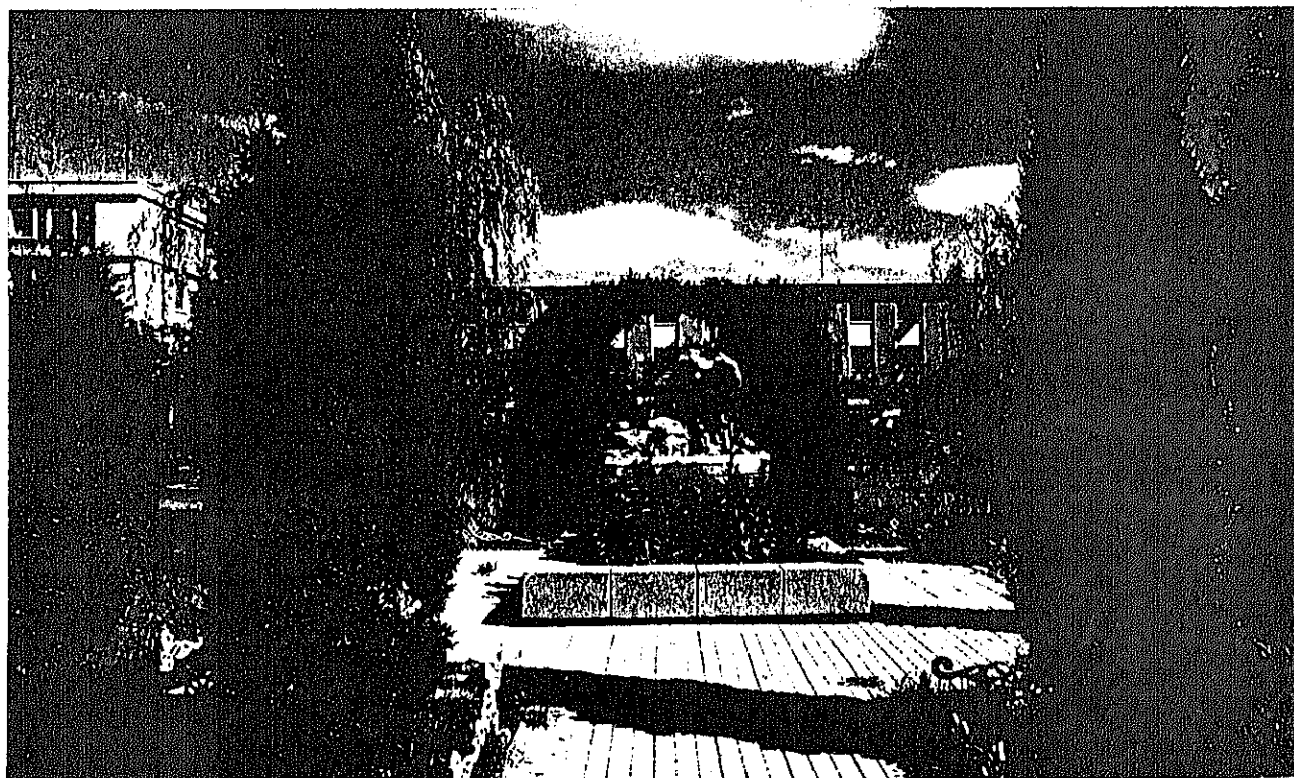
China Petro-chemical Corporation now has 61 research institutes, among which 4 institutes are under direct control of SINOPEC, 57 are attached to the subsidiaries or complexes. There are 16000 employees, among which 7000 are technical personnel (4400 of them are of high or middle level).

In recent years, SINOPEC paid much attention to the development of the advantage of its own trade, e.g., establishing polyamides centre and the synthetic rubber and latex centre, etc. Based on its trade, SINOPEC has formed a network of multilayers which is featured by the exercising of the horizontal associations among all departments and all systems so that the business information becomes more up to date and the technical exchange more extensive.

Moreover, SINOPEC has established many joint research institutions with some famous colleges and academies at home, thus enabling SINOPEC to strengthen, replenish and improve its research ability in some of the fields, such as the field of fine chemistry, chemical engineering and biological engineering, etc.

In the year of 1987, as many as 103 scientific research items were awarded, out of which more than 30 items have reached or are approaching the advanced international levels, more than 50 have reached the advanced levels at home. The utilization of these scientific achievements in industrial production has brought about remarkable economic and social results.

Moreover, in the year of 1987, many important scientific and technical research achievements were appraised, and most of them have successfully passed the industrial probation and brought about very good results. Some of the examples of the important scientific research achievements are as follows:



石油化工研究院外景 General view of Research Institute of Petroleum Processing

*应用助剂提高催化裂化汽油辛烷值技术。采用某种助剂，不仅提高了催化裂化汽油的辛烷值2~3单位(RON)，而且多产30~50%富含C₃、C₄烯烃的液化气。

*不同品种的新润滑油品试生产成功。近几年，共研制成高档润滑油品种45种。有QC、QD级汽油机油、CC、CD级柴油机油，GL-3、GL-5车辆齿轮油、优质抗磨液压油及HL通用机床工业润滑油等。

*NDE临氢降凝催化剂。这种催化剂能使柴油收率达80%，汽油收率>10%。所用原料与催化裂化的差不多，柴油比却大大高于催化裂化。

*计算机技术应用在催化裂化装置上。解决了掺炼渣油数学模型，实现了反应系统闭环优化自动控制。该计算机系统配制简单可靠，技术经济效果显著。

*甲苯歧化催化剂(EA-3)研制成功。使副产的轻重组份都减少，苯收率提高。

*维尼纶/纸复合水泥袋试制成功。年产为1000万条生产装置已投入生产。这种水泥袋

使水泥包装破损率大大降低，有一定的防水性，能保证水泥三个月以上的贮存期。

*不停车带压密封堵漏技术。适用于压力从真空到200大气压和温度从-150℃~+500℃的范围。

除此之外，总公司为了振兴石化工业，非常注意成套技术的开发。把研究、设计、制造、生产四者很好的组织和协调。如在工厂或企业建设中试或工业装置，把四部分力量集中统一使用，收到很好的效果。

为了与世界科技发展同步，总公司不失时机地抓住了高技术的发展。如在生物工程及功能性高分子方面，投入了一定的人力、财力、物力，已初步取得成功。

为了跻身于世界石油化工先进行列，总公司积极开展国际之间的合作与交流。取各国之长，补己之短，以求得石油化工的高速发展。

为了对世界石油化工发展多作贡献，总公司还致力于开拓国际市场，我们愿与更多的国家进行技术贸易交流。

1. The application of catalyst promoter to* improve the octane number of the catcracked gasoline. The utilization of certain promoters can improve the octane number of catcracked gasoline by 2-3 units or increase production of LPG rich in C₃ and C₄ olefines, by 30-50% in cat cracking process.

2. A variety of new lubricating oils have been successfully trial-produced. In recent years, 45 types of high-grade lubricating oils have been developed, including QC, QD lubricating oils for gasoline engines, CC, CD lubricating oils for diesel engines, GL-3, GL-5 lubricating oils for gears in vehicles, high-quality anti-frictional hydraulic oil and the industrial lubricating oils for HL universal machines, etc.

3. The catalytic dewaxing catalyst NDE can bring about a diesel yield of 80% and a gasoline yield of more than 10%, and enables the raw materials used to be almost the same as that of the catalytic cracking, while the ratio of diesel and gasoline to be much higher than that of catalytic cracking.

4. Computer technology has been utilized in catalytic cracking installations. Therefore, the problem in the mathematical modelling of mixed residues has been solved and the close-cycle automatic optimization control of the reaction system has also been realized. The disposition of the said computer system is simple, but reliable and with distinguishing technical and economic results.

5. The toluene disproportionation catalyst (ZA-3) has been successfully developed, enabling the heavy and light fractions of the by-product to be lowered and the benzene yield to be raised.

6. The vinylon-paper compounded cement package has been successfully manufactured, and a plant of 10 million packages of

this kind has been put into production. This kind of package remarkably reduces the damage possibility of cement packing, and has a good capacity of water-resistance, enabling a storage time to be more than 3-months.

7. The technique of on-stream sealing under pressure has been applied under vacuum and up to 200 atmospheres and at the temperature of -150~+500℃.

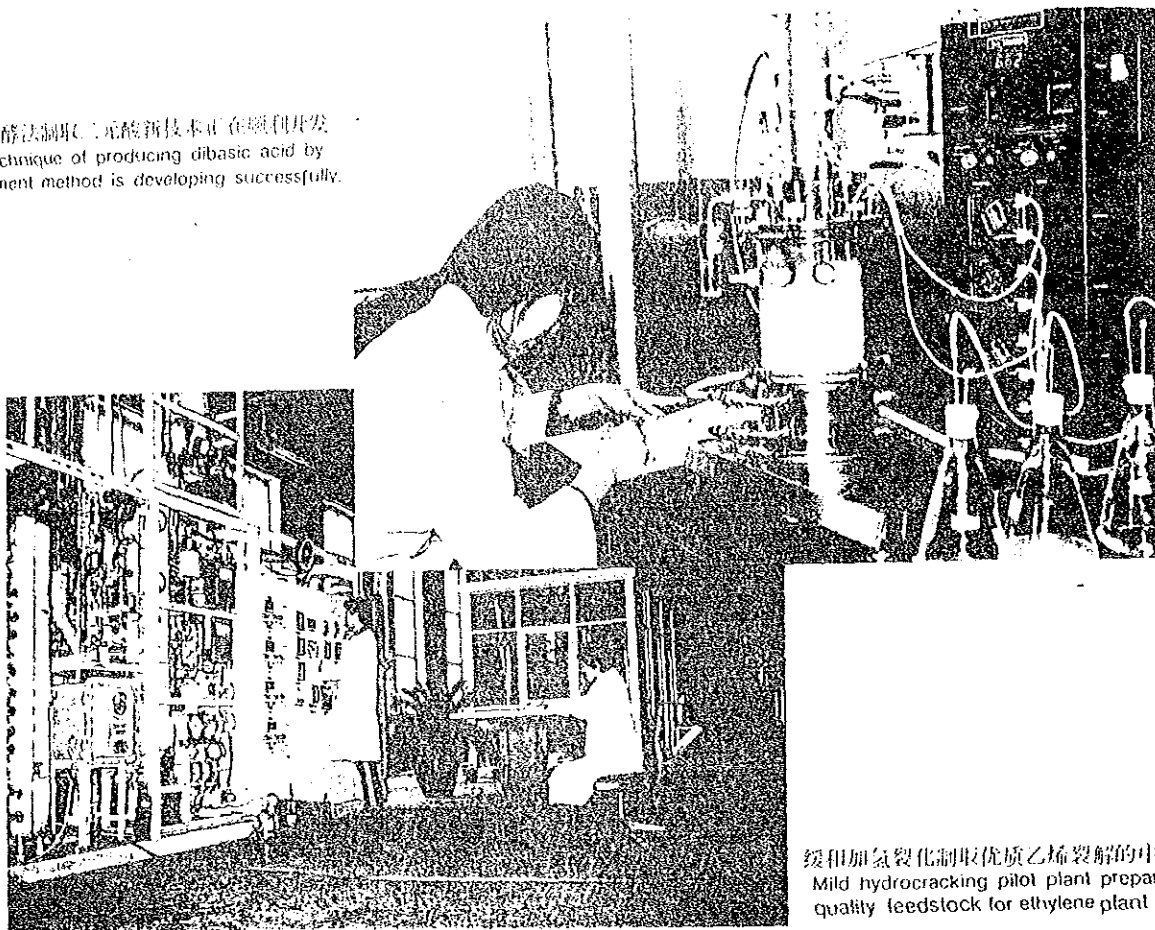
Moreover, in order to vigorously develop the petrochemical industry, SINOPEC has been always paying attention to the development of whole sets of technology. Research, design, manufacture and production have been well organized and coordinated. For example, construction of pilot plants and industrial facilities in the enterprises enables us to concentrate and utilize the above 4 forces, which would bring about a quite good result.

In order to synchronize with the international scientific and technical development, SINOPEC promptly seized every critical moment to develop the advanced technology. For example, considerable manpower, financial resources and materials have been thrown into the biological engineering and functional macromolecule research, and initial successes have been achieved.

In order to catch with the advanced international petrochemical level, SINOPEC has always been active in international cooperation and technical exchange. We are for learning from other countries' merits to offset our demerits so as to speed up the development of the petrochemical industry.

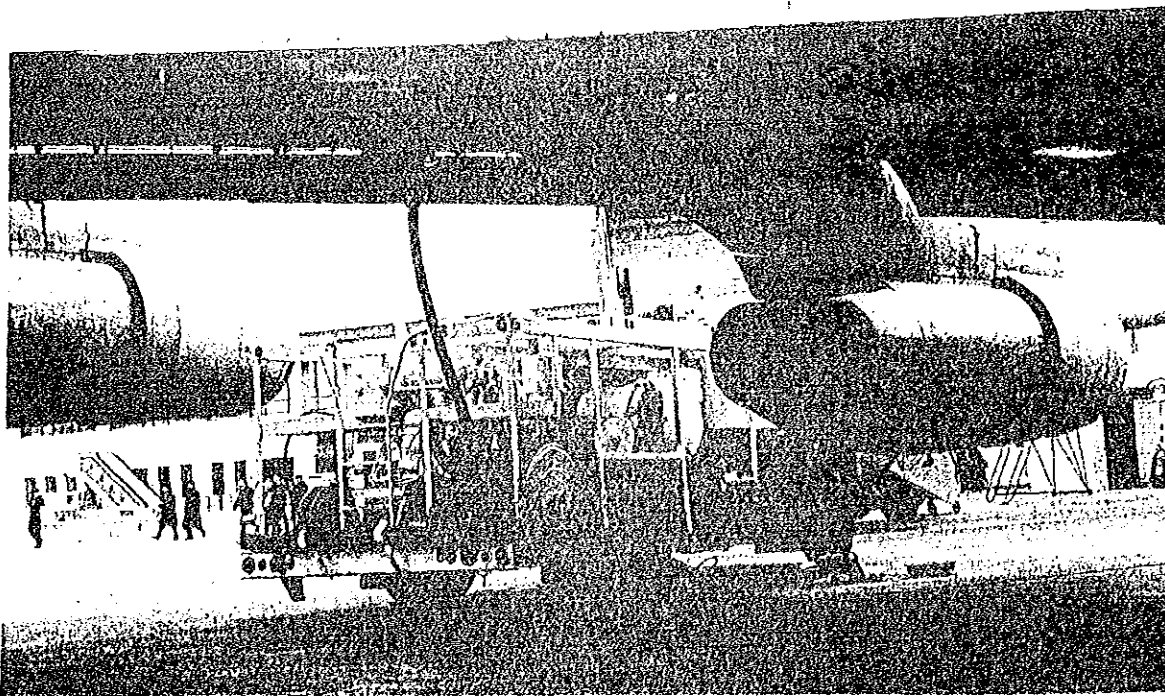
For the sake of further contribution to the development of the international petrochemical industry, SINOPEC is now making every endeavour to develop the international market of technology. We are looking forward to more technical trade and exchange with more countries.

生物发酵法制取二元酸新技术正在顺利开发
New technique of producing dibasic acid by
bioferment method is developing successfully.



缓和加氢裂化制取优质乙烯裂解的中型试验
Mild hydrocracking pilot plant preparing the
quality feedstock for ethylene plant

达到国际水平的3号喷气燃料已投入使用
Mark 3 jet fuel of advanced world level has begun to be used



技术改造

Technical Revamping

中国石油化工总公司在建设新的石油化工基地的同时，对老企业加速进行改造，1987年总公司投资15亿，进行了141项重点技术改造，当年已竣工42项。这些项目采用了国内外先进技术使现有装置提高了产品质量，扩大了能力，增加了品种，降低能耗，减少对环境的污染。

燕山石油化工公司投资4941万元，对年产30万吨乙烯的裂解装置进行了以节能为中心的技术改造，改造采用了新的裂解炉型，高效填料塔和烟气余热回收等一系列国内外的先进技术，改造后每年可增加乙烯产量二万吨，节约轻柴油32490吨，节约燃料油34000吨，装置能耗下降19%。

天津石油化工公司投资2565万元，改造了对苯二甲酸二甲酯装置，增设了预酯化器；对粗酯蒸酸塔再沸器系统、残渣醇解系统、废水系统进行了改造。解决了装置长期没有解决的粗酯酸值高，再沸器运行周期短、残渣量大、污水排放超过标准等四大难题，原材料消耗大幅度下降，装置能力提高了20%以上，获得较好的经济效益，一年就回收全部投资。

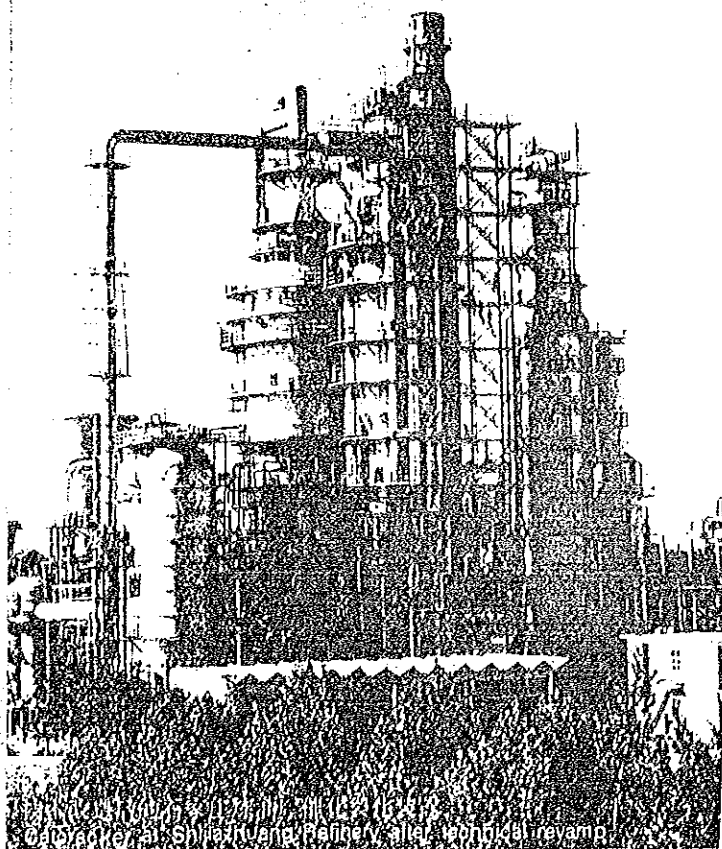
洞庭氮肥厂综合利用本厂的氢氧资源，配套建成了一套4000吨/年双氧水装置，这套装置全部采用国内自己开发的葱醌法新工艺，生产稳定，产品质量好，现大量出口到东南亚各国，受到国外用户欢迎。

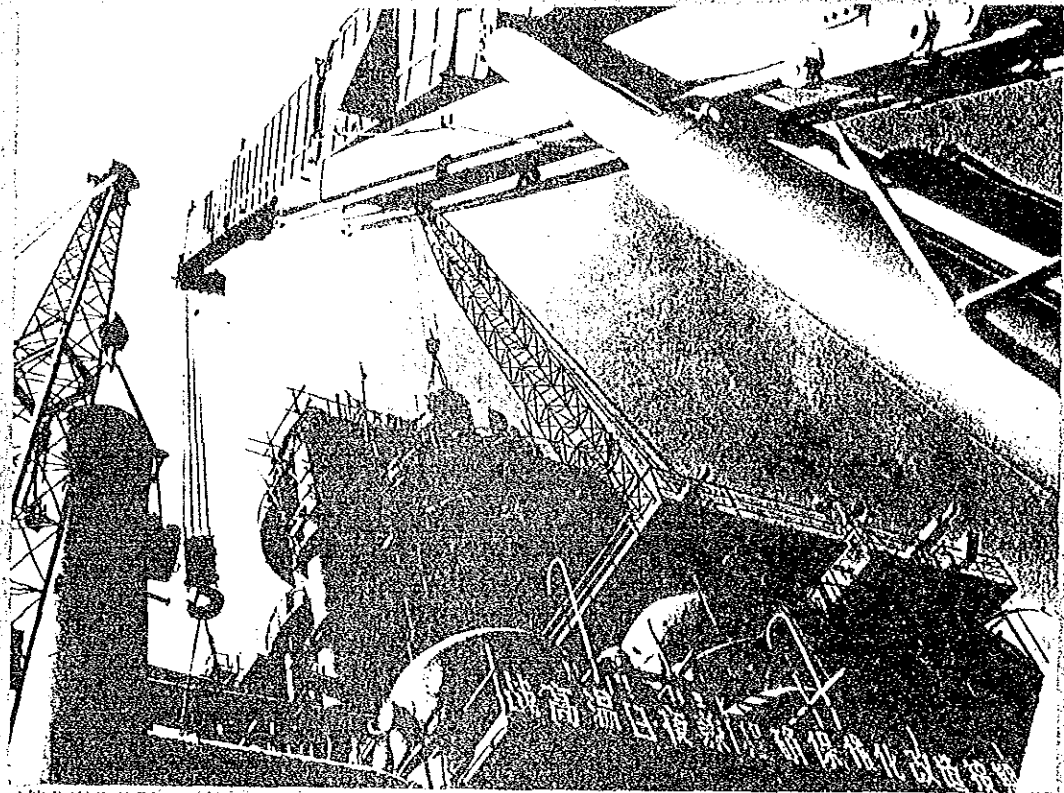
石家庄炼油厂对现有的60万吨/年渣油催化装置进行了改造，采用国内开发的器外两段再生技术，并增加了烟机发电装置，使生产能力达到了90万吨/年以上，提高了轻油收率2%，并使电耗大幅度下降。

China Petrochemical Corporation (SINOPEC in abbreviation) is stepping up the technical revamping of its existing enterprises while constructing its new petrochemical bases. The Corporation made investment of 1.5 billion yuan to conduct 141 important technical revamping items in the year of 1987, among which 42 items were completed in one year. With the application of advanced technologies both at home and from abroad, these items enable the existing installations to improve product qualities, enlarge capacities, extend varieties, save energy and reduce environmental pollution.

Yanshan Petrochemical Company, concentrating its attention on energy saving, made an investment of 49.41 million yuan to launch technical revamping of its 300,000 tons ethylene cracking unit, during which new pyrolysis furnace, high efficiency packing column, heat recovery of flue gases and a series of advanced technologies both at home and abroad have been applied. After the accomplishment of the revamping, there will be an increase of 20,000 tons of ethylene products, a saving of 32,490 tons of light gas oil and 34,000 tons of fuel oil, and the energy consumption will be reduced by 19%.

Tianjin Petrochemical Company made an investment of 25.65 million yuan to retrofit its dimethyl terephthalate unit by adding a preesterification ves-





对催化裂化装置进行技术改造
Catalytic cracking installation under technical revamp

sel and modifying its reboiler system of the raw ester to acid distillation tower, its residue alcoholysis system, and its waste water system. By doing these, the 4 long lasting problems namely, acid value of raw ester being too high, running period of reboilers being too short, residues and the drainage of waste water surpassing the fixed standard have been solved. And the consumption of raw materials has been greatly lowered and the capacity of the installations has been risen by over 20%, bringing about a good economic result. All the investment was recovered in the year.

Utilizing comprehensively its hydrogen and oxygen resources, Douting Nitrogenous Fertilizer Plant has built a hydrogen peroxide plant with capacity of 4,000 tons annually, during which the

self-developed anthraquinone technique was completely adopted. The production remains stable and the products are well qualified as to be exported to Southeast Asian countries in a large scale and are received by consumers at home and abroad with great satisfaction.

Shijiazhuang Refinery, by employing the home-made two-step outside regeneration technique and adding a flue gases power recovery turbine has retrofitted its 600,000 tons residue catalytic cracking unit so that the production capacity comes up to more than 900,000 tons annually and the light oil yield is increased by 2% and the power consumption is greatly reduced.

教育与培训

Education and Training

1987年中国石油化工教育与职工培训工作又取得了较大进展。

1987年，总公司系统共招收研究生16名，毕业11人，在学研究生65人。直属5所高等学校，共开设70多个专业，拥有教职工3009人，其中专职教师1207人，全年招生1697人，当年毕业706人，在校学生总数已达4519人。13所中等专业学校开设专业15个，全年招生2132人，毕业1230人，在校学生共4778人，有教职工2406人。此外，石化总公司还与一些高等学校联合办学，1987年共招新生1989人，毕业专科生163人，在校学生达6376人。

总公司系统各企事业单位举办的基础教育也已达到相当规模，共拥有中学72所、小学108所、职业高中12所，在校学生14万多人，教职工12000余人，其中专职教师近1万人。

在职工教育方面，开始走上有计划、分层次、实行全员培训的正常轨道，初步形成了在规模上大、中、小结合，在层次上高、中、初配套的职工教育体系。

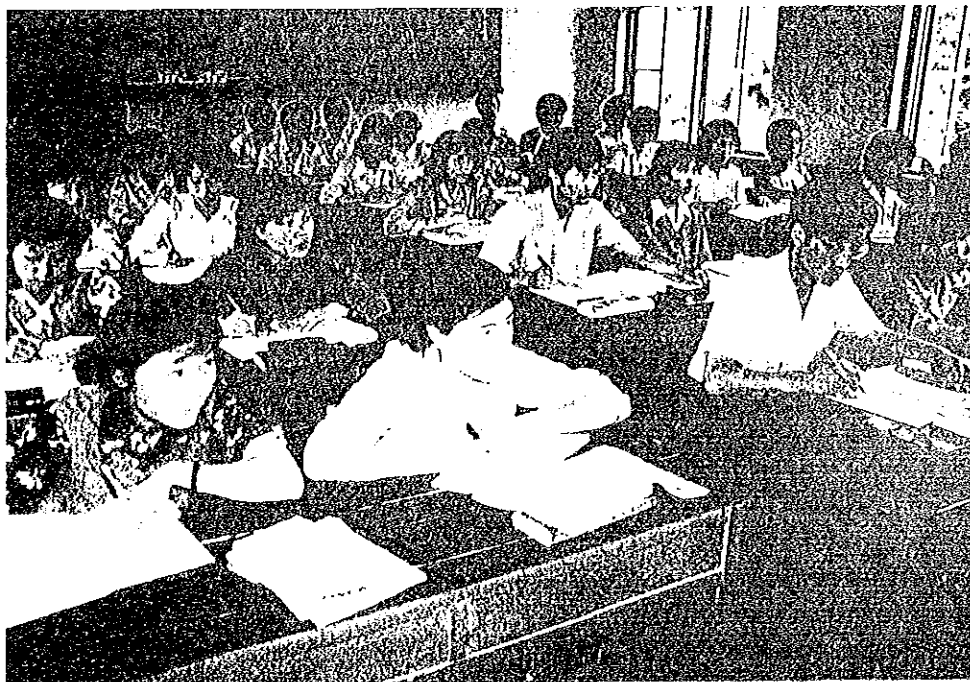
干部教育取得了好成绩。迄今石化总公司

所属42个企业的548名厂长（经理）已参加国家统考，及格率达99%。对大、中型企业的115名领导干部（厂长、党委书记、总工程师、总经济师、总会计师）开展了岗位培训。此外，广泛开展对政工、计划、财务、人事、供销等专业干部的培训，一年内累计培训达25590人次。为适应干部培训的需要，石化总公司正式成立了石化管理干部进修学院。

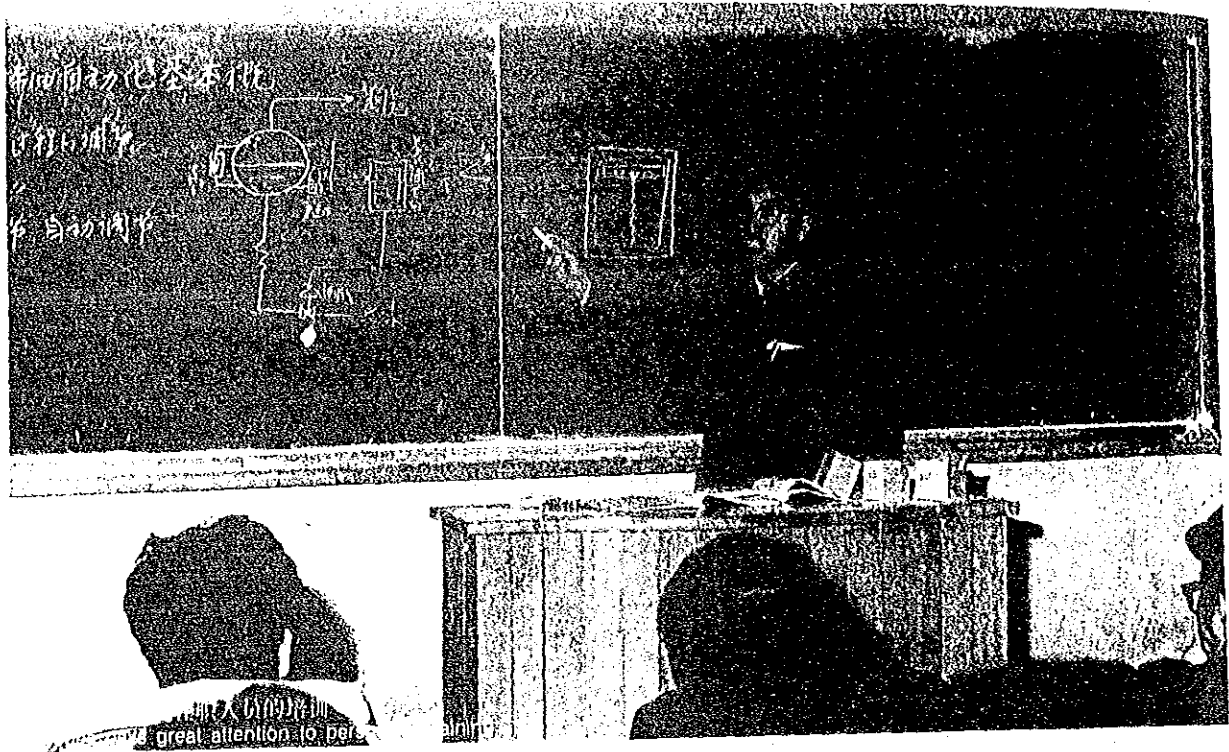
在继续工程教育方面也有了良好开端。制定了《中国石化总公司继续工程教育暂行规定》，计划开办几十个专题，已开办了“催化裂化”技术培训班。此外还选派青年专业技术人员出国深造。

总公司系统已有职工大学18所，年内毕业生1295人，职工中专30所，毕业生1019人，技工学校58所，全年毕业生25273人。

在工人培训方面初步形成了初、中、高的培训体系，决定建立5个高级技工培训中心和电子计算机仿真培训中心。至1987年底，已培训中级技工5200名、高级技工近400名，并从中聘任工人技师176名。



聚精会神学习专业知识
Concentrated upon studying



SINOPEC made much further progress in its petrochemical education and training of personnel in 1987.

In the past year, there were 16 postgraduates who were admitted to SINOPEC and among them 11 postgraduates graduated already, and there is still an enrollment of 65 postgraduates now. There are 3009 teaching staff, among which 1207 are teachers of 70 different disciplines in 5 colleges of higher learning which are under direct control of SINOPEC. 1697 new students were admitted and 706 graduated, and the total enrollment of students now amounts to 4519. There are 2406 teaching staff and 4778 students now working and studying in 13 schools of professional training at middle level which consists of 15 disciplines. In the year of 1987, 2132 students were enrolled and 1230 graduated. Moreover, SINOPEC also runs joint learning institutions in close collaboration with some colleges, and these institutions now has an enrollment of 6376 students. In the year of 1987, 1989 new students were enrolled and 163 high level specialized students graduated.

The basic education held by the subsidiary enterprises and institutions has also reached a remarkable scope. There are 72 middle schools, 108 primary schools, 12 senior middle schools of professional training, with an enrollment of 140,000 students and more than 12 thousand teaching staff, among which 10,000 are teachers.

The training of personnel has got onto the right track as to proceed the training of all personnel according to the plan and level. An education system featured in the combination of the large, medium and small sizes, the high, middle and elementary levels has initially taken shape.

Great achievement has been made in educating cadres. So far, 548 directors (or managers) of 42 subordinate enterprises of SINOPEC have taken part in the national examination, among which 99% have passed. A responsibility training has also been launched among 115 leading cadres including directors, secretaries of the Party Committee, chief engineers, chief economists and chief accountants of the large and medium-sized enterprises. Moreover, in the year, as many as 25590 cadres who were in charge of administration, personnel planning, financial management, supply and marketing were widely trained. In order to meet the demands of cadres training, the China Petrochemical Corporation formally established Petrochemical Management Personnel Training College.

There is also a good beginning in the continuous engineering education. The Regulations for continuing the engineering education by China Petrochemical Corporation has been formulated. It has been planned to set up dozens of subjects, and the catalytic cracking technical training course has been started. Some young technicians have been sent to go abroad for further training. Now SINOPEC has 18 colleges for workers and staff members with 1295 graduates in 1987, 30 professional training schools for workers and staff members with 1019 graduates, 58 technical schools for workers and staff members with 25,273 graduates.

A training system which is featured by the combination of the elementary, middle and high levels has been formed in worker training. A decision has been made to set up 5 training centers with computerized simulator for training skilled workers. Up to present, 5200 workers of middle level and 400 workers of high level have been trained, and among them 176 workers were appointed master-workman.

勘察、设计与施工

Survey, Design and Construction

中国石油化工总公司所属各勘察、设计和施工单位的广大职工，以“用户至上、信誉第一、为生产服务、对社会负责”的基本宗旨，发扬艰苦奋斗、顽强拼搏的精神，在石化基本建设工作中做出了重要贡献。

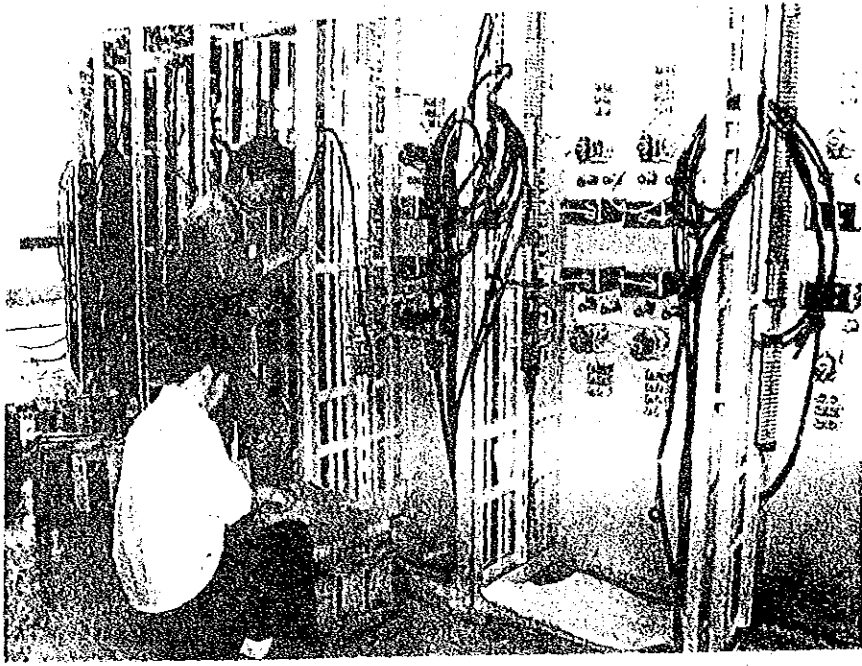
总公司共有勘察设计单位57个，职工12000多人。其中直属的勘察、设计单位五个：北京设计院、北京石油化工工程公司、洛阳石油化工工程公司、兰州石油化工设计院和徐水勘察公司，有职工5000多人，其中包括高、中级技术干部1800人。这支队伍承担着石化基本建设的勘察、设计任务，曾先后设计了大中型炼油厂、石油化工厂、化肥厂和石油化工联合企业80余个，共完成70余种1000多套生产装置的设计，其中有140个项目荣获国家级或部（省）级优秀设计奖和科技进步奖。1987年完成前期工作167项，初步设计263项，施工图设计2937项；全年完成工程设计投资42.6亿元，比1986年提高了26.7%，其中直属单位完成20.1亿元，比1986年提

Aiming at "putting the consumers and credit all in all, serving for production and bearing the responsibility for the whole society," the staff members and workers of the surveying, designing and construction units affiliated to the China Petrochemical Corporation (SINOPEC in abbreviation), by carrying forward the spirit of tenacious struggle and plain living, have made remarkable contributions to the construction of petrochemical projects.

SINOPEC has 57 surveying and designing units, with a total workforce of 12000 employees, among which 5 surveying and designing units are under the direct control of SINOPEC: Beijing Design Institute, Beijing Petrochemical Engineering Company, Luoyang Petrochemical Engineering Company, Lanzhou Petrochemical Design Institute and Xushui General Survey Company, with a total number of 5000 employees, among which 1800 are of high and middle technical level. This work-force is undertaking the tasks of designing and surveying for the capital construction of the petrochemical projects. They have designed more than 80 large and medium-sized refineries, petrochemical plants, chemical fertilizer plants and petrochemical complexes. They also have accomplished the designing of more than 1000 refining and petrochemical units of more than 70 types, among which 140 were awarded excellent designing prize or scientific and technical advancement prize at national or ministerial level. In the year of 1987, they completed the earlier work of 167 construction items, basic designs of 263 projects and 2937 working drawings. In the year, they accomplished an investment of 4.26 billion yuan for projects engineering an increase by 26.7% over the previous year, among which 2.01 billion yuan were accomplished by those that are under the direct control of SINOPEC, a 34.8% increase over the previous year. 2 items were

工程设计
Engineering design





安装控制室
Erection of instruments in the control room

高了34.8%。在全国第三次优秀工程设计奖评选中，有2个项目荣获金质奖，3个项目荣获银质奖。

各勘察、设计单位都有自己的专业技术特长，并与国内许多高等院校、科研单位、生产厂和设备制造厂建立了广泛的联系和合作关系，不断开发、研制出新工艺、新技术、新设备，取得了可喜的成果。同时，各单位积极开展对外技术合作，四个直属设计单位于1985年和1986年加入了美国分馏学会和英国传热学会，并通过开办合营公司、组织技术交流、开展合作设计等方式，同国外许多著名石油化工公司和厂商建立了联系。在消化吸收引进技术的基础上，经过长期设计和生产实践，在加氢裂化、重油催化、合成氨、尿素、聚丙烯、丁二烯、乙烯裂解等技术的国产化方面取得重大进展。

各单位已拥有完备的专业技术标准规范和先进的勘察设计装备。如IBM4381中型计算机，IBM5550、IBMPC-XT等微型计算机，CDS4101、CVDESIGNER-VX等计算机辅助设计系统，缩微检索系统，各种类型复印机、晒图机，ASPEN PLUS、PROCESS、SAP-5等先进的计算机应

awarded gold medals and 3 were awarded silver medals in the third nation-wide appraisal for excellent engineering designs.

Every surveying and designing unit has its own technical speciality. They have established extensive associations and cooperative relationships with many colleges, scientific research institutions, productive works and equipment-building plants at home and achieved a lot in the further exploration and development of new techniques, new technologies and new equipments. Meanwhile, all units have been active in the technical cooperations with foreign countries and all 4 directly controlled engineering units, for example, were respectively admitted to the US Distillation Association and the British Heat Transfer Association in 1985 and in 1986. They have set up cooperative links with many famous petrochemical companies and manufacturers abroad by ways of running joint companies, developing technical exchanges and launching joint engineering, etc. On the bases of putting all imported technologies into full practice, after a long time of engineering and productive practice, they have achieved remarkably in the nationalization of such technologies like hydrocracking, heavy oil catalytic cracking, of ammonia, urea, polypropylene, butadiene and ethylene, production etc.

Every unit possesses perfect technological standards and advanced surveying and designing equipment, such as, IBM 4381 medium-sized computer, microcomputers like IBM 5550, IBM PC-XT, computer auxiliary system for designing such as CDS 4101, CVDESIGNER-VX, microfilm retrieval system, various sorts of copiers, blueprint machine, applied software for advanced computers such as ASPEN PLUS, PROCESS, SAP-5 and advanced surveying devices like photo-electro-ranger, large puncher, Cambridge Transverse Instrument, etc.

SINOPEC owns a petrochemical construction force consisting of four directly subordinate enterprises. Further implementing the

用软件, 以及英国剑桥式横压仪、光电测距仪、大型打桩机等先进的勘察设备。

总公司有一支包括四个直属企业在内的石油化工施工队伍。随着国家基本建设体制改革的不断深化, 各施工企业坚持改革、开放、搞活的方针, 积极推行多形式、多层次的经营承包制, 改革用工制度及分配制度, 实行经理负责制, 大大增强了企业的活力, 全面提高企业的素质, 以优良的工程质量确保了国家重点建设项目按期建成投产。

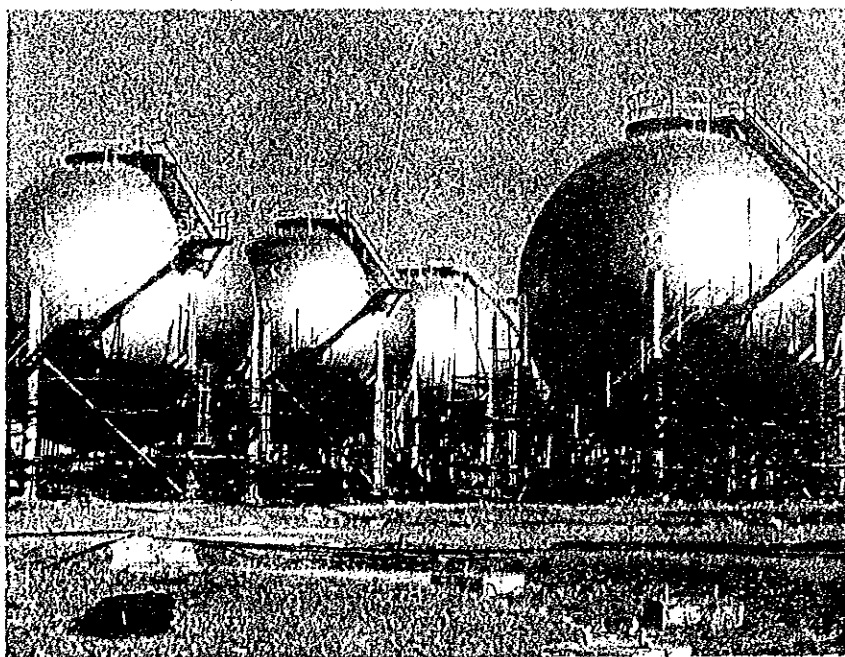
1987年, 第二、第三、第四、第十等四个直属施工企业和兰化化建公司都承担了大庆、齐鲁、扬子三套乙烯工程和宁夏大化肥工程等一批国家重点建设项目的施工任务。继1986年大庆乙烯一期工程建成试生产之后, 齐鲁、扬子两套乙烯一期工程也于1987年先后建成投料试车成功; 大庆、齐鲁乙烯二期工程和宁夏大化肥工程已基本建成, 扬子乙烯二期工程正在进行安装。此外, 天津、镇海两套烷基化装置已建成并投料试车成功; 高桥常减压等装置、广州二期扩建工程、兰化毫秒炉工程等也正在加快施工。

四个直属施工企业和兰化化建公司在确保国家重点建设的前提下, 在生产经营活动中, 也取得了很好的经济效益。

State's structural reform on capital construction, the enterprises actively adopted multiple and multilayered management contracting systems in light of the policies of reforming, opening to the outside world and activating the economy. They also improved systems of labour-arrangement and distribution, and applied the manager-responsibility system. The measures have rejuvenated the enterprises, raised the capabilities of them and enabled them to complete those key State's projects on time.

In 1987, No. 2, No. 3, No. 4 and No. 10 construction companies under SINOPEC, and the Lanzhou Chemical Construction Company undertook the erection of several key State's projects, including Daqing, Qilu and Yangzi ethylene projects and Ningxia fertilizer project. The first phase of Daqing, Qilu and Yangzi ethylene projects were completed and put into operation respectively in 1986 and 1987. The second phase of Daqing, Qilu ethylene projects and Ningxia fertilizer project are almost completed. The second phase of Yangzi ethylene project has entered the stage of installation. In addition, Tianjin and Zhenhai alkylation units have successfully come into operation. Gaoqiao vacuum and atmospheric distillation unit, the second phase of Guangzhou expansion project and the millisecond furnace project of the Lanzhou Chemical Industry Company are right under construction at full speed.

The four directly subordinate construction companies and the Lanzhou Chemical Construction Company have made good economic results in building key State's projects. Their output value in 1987 stood at RMB401.57 million yuan, a 17% increase over 1986. The labour productivity reached RMB13,050 yuan, a 9% increase over 1986. All together 570 projects were completed by these companies in 1987. The above figures are at the highest level since SINOPEC was founded.



正在施工的油罐群
Tank area under construction

1987年五个公司共完成总产值40157万元,比1986年提高了17%;劳动生产率达到了13050元,比1986年提高了9%;全年交工验收单位工程570个。上述指标都创出总公司建立以来的最好水平。

在企业经营机制改革方面,积极推广了天津涤纶长丝工程的建设、设计、施工单位三方联合对项目进行承包的经验,在企业内部开展了项目经理负责制的试点和多种形式的经营承包责任制,这些都对缩短建设周期、提高工程质量、控制项目投资、调动企业内部积极性和获得较好的经济效益起到了积极的作用。

各施工企业拥有一批先进的建筑安装施工设备,如从国外引进的最大起重能力为150吨(RT-1610)越野型全液压起重机的、400吨可组式大型平板拖车,先进的焊接设备及无损探测设备。各企业在非标设备制造方面,1987年有了进一步的提高,直属施工企业的加工厂已成为总公司制造系统的一支重要力量,年设备加工制造能力可达15000吨。

各施工企业在土建和安装施工中,十分重视工程质量,广泛开展了全面质量管理小组活动。1987年,总公司有五个QC小组荣获国家工程建设质量管理小组活动成果奖,其中有一个QC小组出席了全国第九次质量管理小组代表会议。兰化化建公司施工的兰化公司ABS树脂工程,被评为国家优质工程。

总公司可为国内外客户提供大中型炼油厂、石油化工厂及单项生产装置的技术咨询、可行性研究、总体规划、工程勘察、岩土工程、工程设计、设备材料采购、工程建设、开工试运转和现场技术服务、技术培训、计算机应用等业务工作。根据用户需要,可单项承包,也可工程总承包,热忱欢迎国内外客户来洽谈业务。

In terms of structural reform, the companies summed up and popularized the experiences in building Tianjin polyester fibre plant, which was jointly undertaken by building, designing and construction firms. They set up manager-responsibility system in their experimental units and also adopted other kinds of responsibility systems. These systems helped to shorten construction period, improve project quality, control investments, set in motion the enthusiasm of the employees and gain good economic results.

The companies are equipped with state-of-the-art construction and installation facilities, including the imported 150-ton hydraulic cross-country cranes, large sized platform trailers of packaged design, and welding and nondestructive inspection devices. 1987 witnessed the progress the companies made in manufacturing non-standard equipment. The companies' fabricating factories, as SINOPEC'S important manufacture force, can manufacture and produce 15,000 tons of equipment annually.

The companies always emphasize project quality in civil engineering and erection. They widely develop over-all quality control activities. In 1987, five QC groups from SINOPEC were awarded as by the State, and one of which attended the 9th National QC Groups Congress. Additionally, the ABS resin project of the Lanzhou Chemical Industry Company, undertaken by Lanzhou Chemical Construction Company was elected to be State's excellent quality project.

SINOPEC is capable of providing the following services for domestic and foreign clients: technical consultation, feasibility study, overall planning, project general survey, civil engineering, engineering design, purchasing of equipment and materials, project construction, commissioning and start-up, field technical services, technical training, and application of computer systems. According to the need of the clients, the above-mentioned services can be either single item subcontract, or turn-key project contract. Business discussions are welcome.