

节能

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ENERGY CONSERVATION

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Research on Guangdong universities of energy-saving emission reduction measures

XIAN Can-biao, QI Shui-bing, LI Lian-he, et al
(Guangdong Vocational College of Environmental Protection Engineering, Foshan 528216, China)

Abstract: The energy conservation and emission reduction in colleges and universities is the inevitable choice of constructing economical campus. Low carbon and resource recycling in solving the bottleneck problem of management and technology for energy conservation and emissions reduction is a beneficial attempt and to achieve energy conservation and emission reduction in colleges and universities of technology breakthrough and innovation. Combined with energy-saving lamps, college campus trash classification, eat hutch garbage recycling three aspects, this paper expounds the Guangdong Vocational College of Environmental Protection Engineering in recent years in energy conservation and emissions reduction methods of concrete measures and innovation of practice, analysis of social and economic benefits generated by the energy conservation and emissions reduction, tries to use it as a boot mode, energy saving and emission reduction in colleges and universities in more play a demonstrative role in colleges and universities.

Key words: energy conservation and emissions reduction; low carbon campus; campus trash classification; eat hutch garbage recycling; energy saving lamp

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The effect on the strength of U-tube with axial crack

WEI Ming-ye, LIU Jing-xin, LIU Nai-jiang, et al
(Tangshan Special Equipment Supervise and Inspection Institute, Tangshan 063000, China)

Abstract: U-tube is widely used in chemical equipment. Under high temperature and pressure it is easy to emerge crack at the elbow of the U-tube, the cracks seriously affected the stress distribution on the U-tube and it seriously reduced the carrying capacity of the U-tube. By using ABAQUS software analysis the U-tube which exists axial crack, it can get the influence on the strength U-tube which own different length, depth and the interaction between several different locations on the U-tube crack. The results show that the ratio of the crack length and depth is smaller, the effect on the strength of the U-tube is smaller, the greater on the contrary; the influence of cracks longitudinally aligned on the strength of the U-tube is much greater than the cracks horizontally aligned; as the increases of depth on crack the stress concentration at the bottom and the end will gradually stabilize or even decrease; the influence on strength of the crack inside the U-tube is much larger than the cracks located elsewhere.

Key words: U-tube; crack; finite element analysis; stress concentration; strength

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Optimum control for thermal engineering parameters of the organic heat carrier in the waste heat recovery

MA Hai-bo, SUN Hao, LI Xiao-jie, et al
(School of Energy Science and Engineering, Central South University, Changsha 410083, China)

Abstract: The most vital factor in the waste heat recovery-coking of the organic heat carrier is present. Thus, we take the advantages of the applications of the principles in heat transfer and numerical simulation to study how the thickness of the coking matters the performance of heat transfer and how the temperature on the heat exchangers distributed. As a result, we have put forward a optimal strategy to adjust the thermal engineering parameters of the organic heat carrier during the process of waste heat recovery. With the application of this method, large quantities of energy would be saved. A promising future of this method is just around the corner.

Key words: waste heat recovery; coking; temperature distribution; optimal strategies; energy-saving

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Research on energy-saving evaluation system for heat-supply and the establishment of energy-saving quantity evaluation model

WANG Si-yuan, YIN Bing-yu, WANG Wen-biao
(College of information science and technology, Dalian Maritime University, Dalian 116026, China)

Abstract: There exists a universal phenomenon in the field of heat-supply, that is high consumption with low efficiency and poor thermal environment. As an effective means to promote and achieve energy saving, research on the establishment of evaluation index system and evaluation methods has become an important issue to be solved. According to the problem that currently studies of energy-saving assessment mostly focus on qualitative analysis rather than quantitative analysis, resulting in the lack of scientific and feasible quantitative evaluation theory, with the aid of the Internet of things, based on the benchmark model of energy consumption, under the constraint of energy consumption correction, a energy-saving quantitative evaluation model of buildings heat-supply system was proposed. Combined with energy consumption data of a university, the conclusions showed the reliability and superiority of the revised model, which finally provided a powerful theoretical support for the scientific evaluation of energy-saving effect and Energy Management Contracting.

Key words: heating system; energy-saving assessment; correction coefficient; energy-saving quantitative model; Energy Management Contracting (EMC)

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Study on the utilization of organic Rankine cycle power generation system

LIU Guang-lin
(Beijing Key Laboratory of Multi-Phase Flow and Heat Transfer of Low-Grade Energy, North China Electric Power University, Beijing 102206, China)

Abstract: The system performance of an ideal power generation system is normally closely related to the temperatures of the heat and cold sources; however, in reality, except for the heat and cold sources temperature, the factors such as the working fluids and the forms of the systems all can affect the system performance. Because of the influences of the heat source temperature and optimization targets, the suitable formula and system forms are still unavailable. So, based on the various properties of the different heat sources, to explore proper system forms and working fluids to provide scientific basis for the application of ORC power generation systems is the key to effectively use of the ORC power generation systems.

Key words: Organic Rankine Cycle; low-grade energy; energy-saving

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Load analysis and air-conditioning system design for underground commercial buildings

YAN Wei-lin, YE Yu-cheng
(Hangzhou Energy Monitoring Center,
Hangzhou 310004, China)

Abstract: With the development of underground commercial buildings, the suitable air-conditioning system can create comfortable environment for people. On the basis of the load analysis of underground commercial buildings, the suitable air conditioning system is designed in the paper. The design can achieve the purpose of comfort and energy-saving.

Key words: underground commercial buildings; load; air-conditioning system; energy-saving; design

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Coal low temperature drying and upgrading technology research and application

ZHENG Ru, WU Wei-wei
(Shandong Tianyuan Energy-saving Environmental Engineering Co. Ltd., Xintai 271221, China)

Abstract: In order to improve the profits of the coal mine, to reduce production costs, improving quality of low temperature dryingslime coal washing system. The results show that the slurry is dried in a low temperature, not only improve the coal combustionvalue, put an end to the coal slurry pat phenomenon. At the same time, improving efficiency achieves the purpose of environmental protection.

Key words: slime drying; upgrading; energy conservation and environment protection

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Discussion on the energy efficiency and safety control of ammonium nitrate solution container

HU Zeng-bin, YAO Jian
(Yunnan Institute of Special Equipment Inspection Test, Kunming 650028, China)

Abstract: By presenting and analyzing the application of ANS in energy saving and environment-friendly production process, and considering the fact that ANS is categorized into dangerous chemicals that are highly flammable and combustable, this article thoroughly illustrated potential safety weak points that hide in the production, transportation and usage of ANS. We also proposed specific safety rules for regulating the design, production, safety inspection of ANS tank container, which will more or less benefit personnels of this field while they are designing, producing and mananging the tank container.

Key words: Ammonium Nitrate Solution; tank container; energy efficiency; quality control

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Automatic control and self-regulation system of adding pressure station with the mixed coal gas based on PLC

LU He-chuan, SUN Yan-jie, XIE Zhi-ying
(Tang shan steel weier Automation Co. Ltd.,
Tangshan 063000, China)

Abstract: In order to solve the difficulty that the mixed gas's pressure and calorific values fluctuate greatly in process control, an automatic control method of adjustment heat value and pressure based on the

PLC was proposed. And the way how to realize was introduced in detail. The system has got a good effect in the application. The fluctuations in heat value and pressure of mixed gas can be kept at a low level, and has strong anti-disturbance ability against the external interference.

Key words: adding pressure with the mixed coal gas; calorific value adjustment; pressure regulation; control model; PLC

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Application of multifunctional pump control valve in the pump station

FENG De-hua
(Xuanhua iron and steel Co. power plant,
Zhangjiakou 075100, China)

Abstract: The sturcture of multifunctional water pum control valve and the using feature are proposed. The advantage of multifunctional water pump control valve is put forward. The result shows that multifunctional water pum control valve is wrothy of promoting.

Key words: multifunctional pump control valve; water hammer; pump station

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Exploration and practice on new way of sphalt waste-water reuse

ZHANG Zhi-yong, ZHANG Hai-ying, LIU Shu-wen, et al
(Anyang Iron and Steel Stoup Co. Ltd.,
Anyang 455004, China)

Abstract: Asphalt warehouse for coking plant wastewater into the sewage treatment system can not be analyzed, the transformation program. Through the addition of filtration and set the buffer pool elevation openings, install filtration screens, and use of the original collection pond will be sent back to the asphalt cooling pond wastewater reuse, reduce the burden of biological treatment to reduce coking wastewater emissions, reduce environmental pollution.

Key words: wastewater; make use of again; filter mesh

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The efficiency improvemens reform of unit one cooling tower spray device in Huaneng Chaohu power plant

ZHANG Shi-hong, SUN Li-chun, FAN Yan
(Huaneng power generation Co. Ltd.,
Chaohu 238015, China)

Abstract: Based on the theory of improving the condenser vacuum by lowering the temperature of the cooling tower water, by the comparative study of splashing device of XPH swirling type and JNX-031 rotating type in water spray, combined with the application effect of JNX-031 type rotating spray device in the unit one, we found it can make the condenser vacuum of unit one to increase 0.78 kPa before reform, the temperature of cooling tower water to decrease 1.51 ℃, can save more than 3750 tons standard coal each year. The results show that there are popularization and application value of JNX-031 type rotating spray device in cooling tower of the large sets.

Key words: cooling tower; spitting device; reform; benefst analysis

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企业名录

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