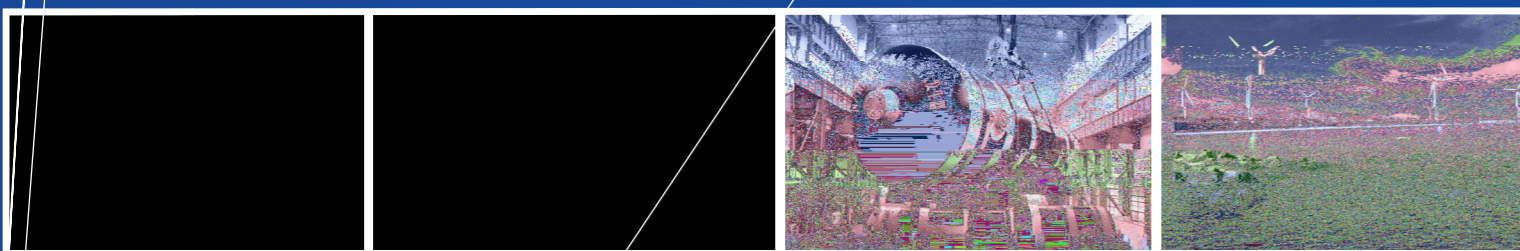


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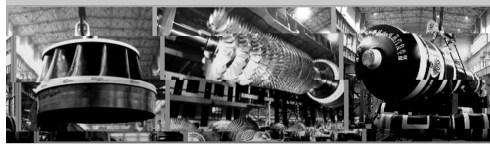
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2026

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东方电气评论



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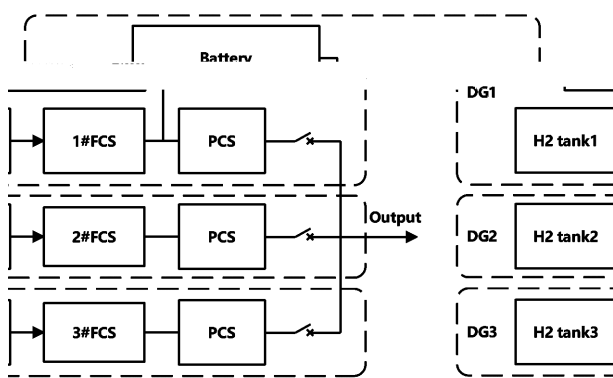
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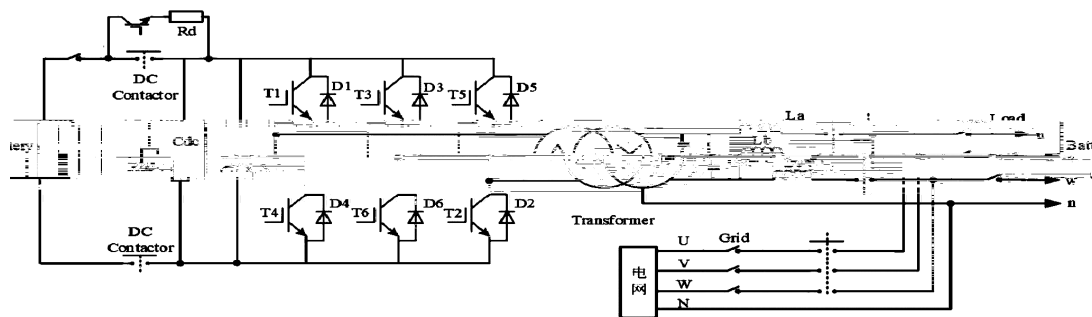
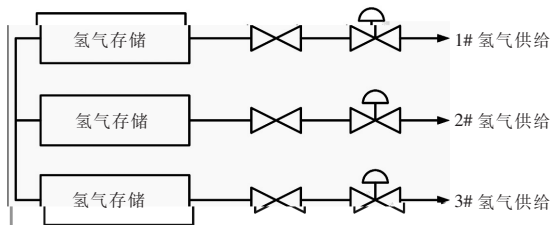
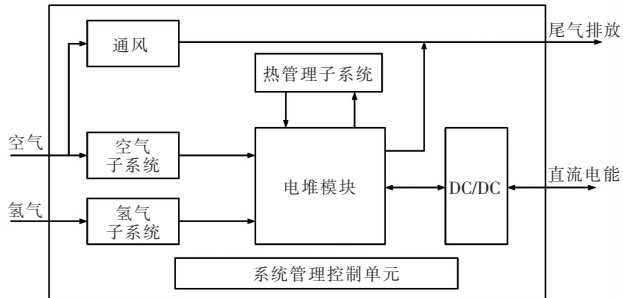
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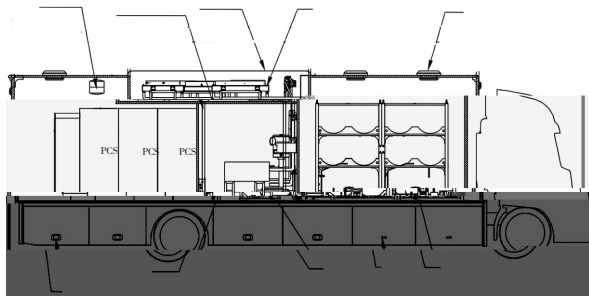
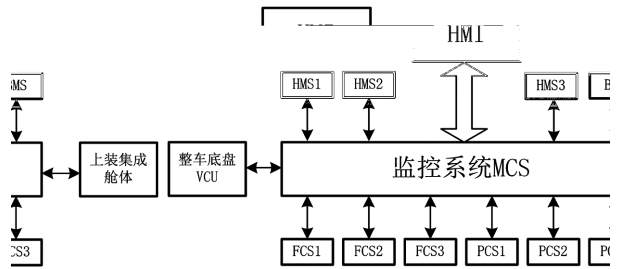
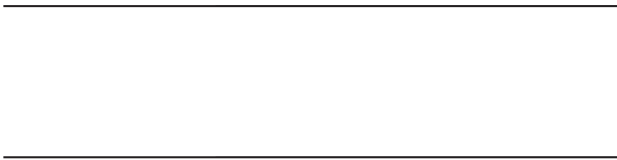
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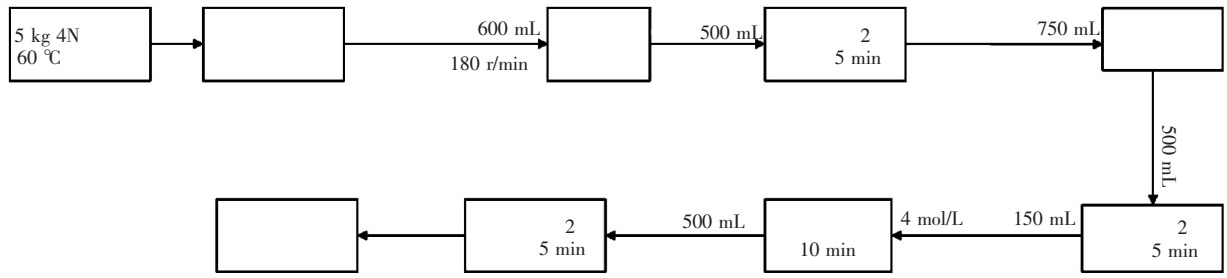
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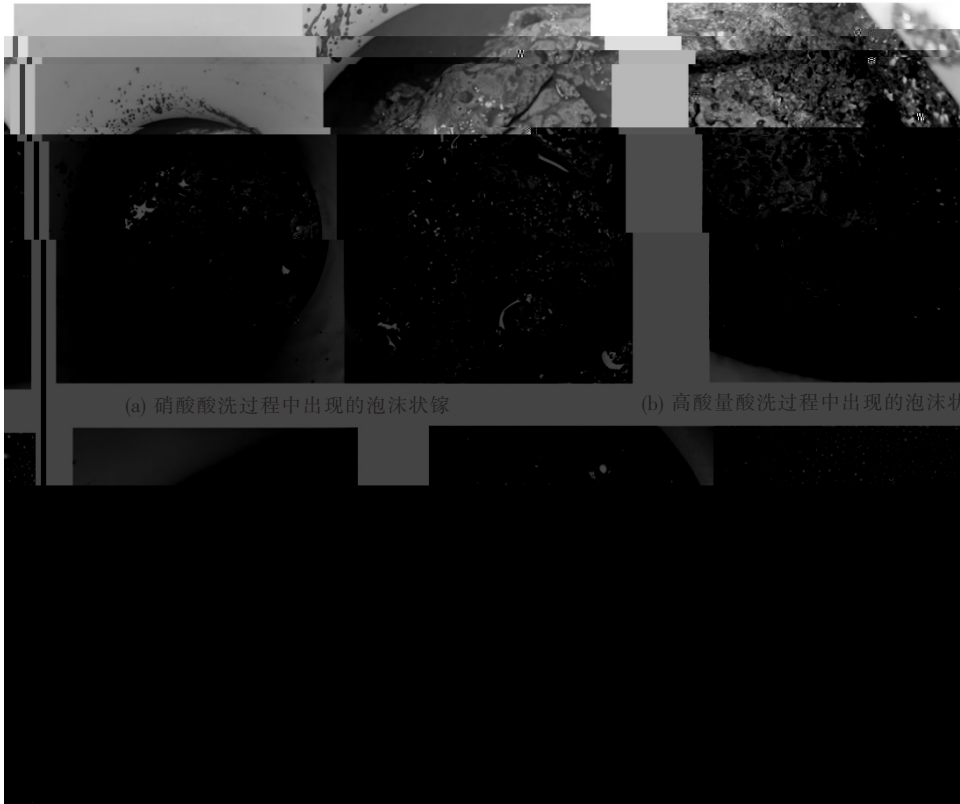
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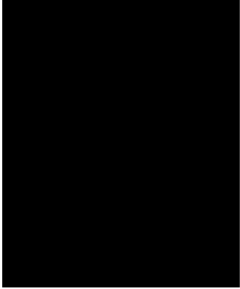
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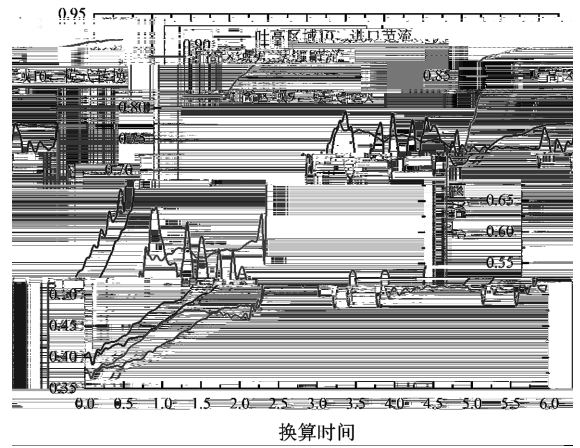
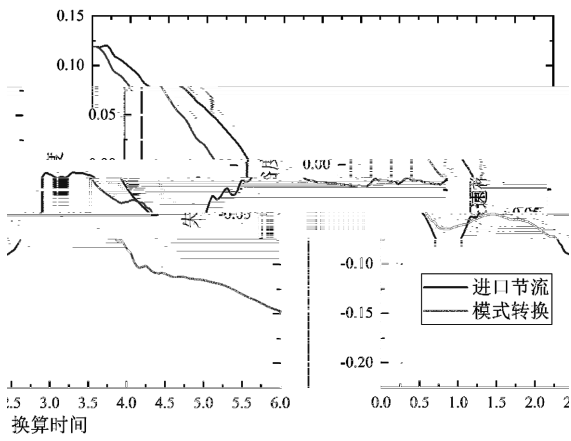


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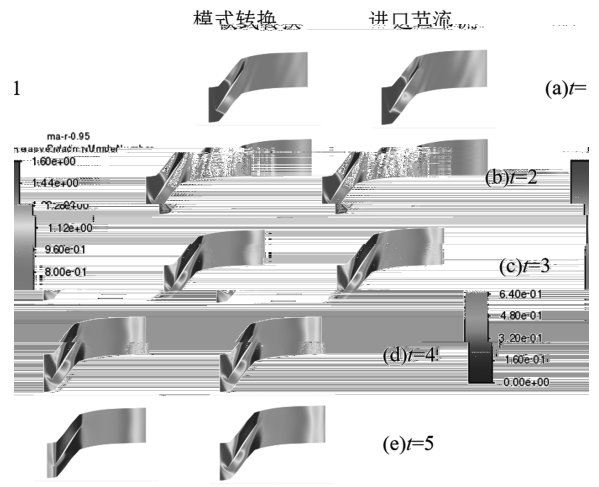
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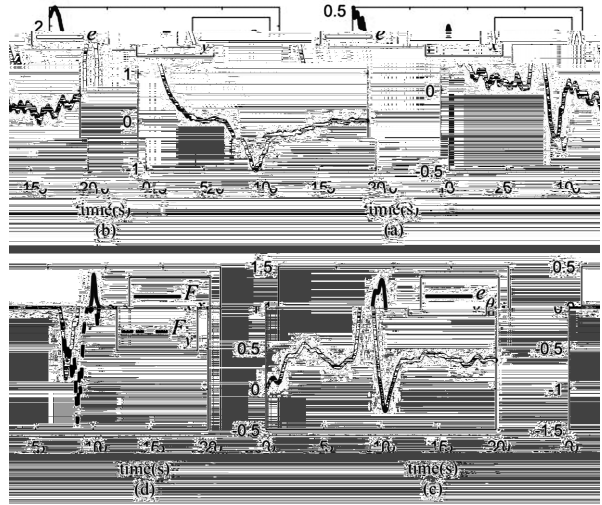
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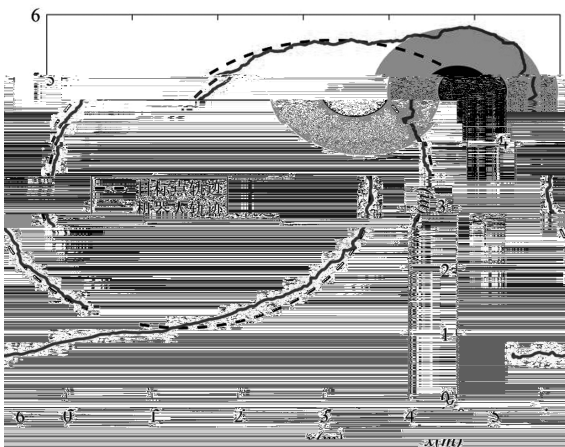
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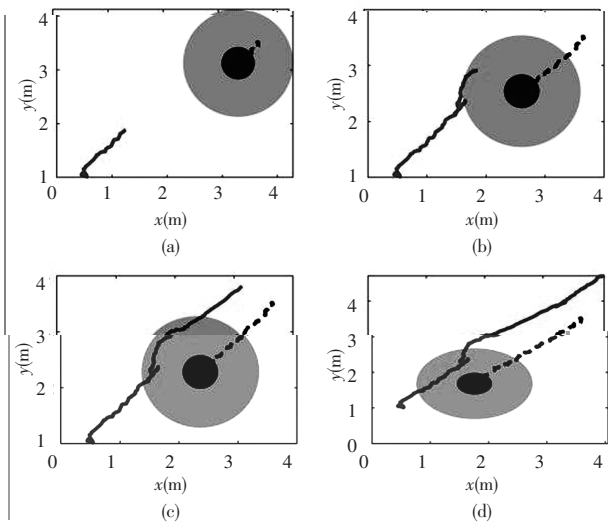
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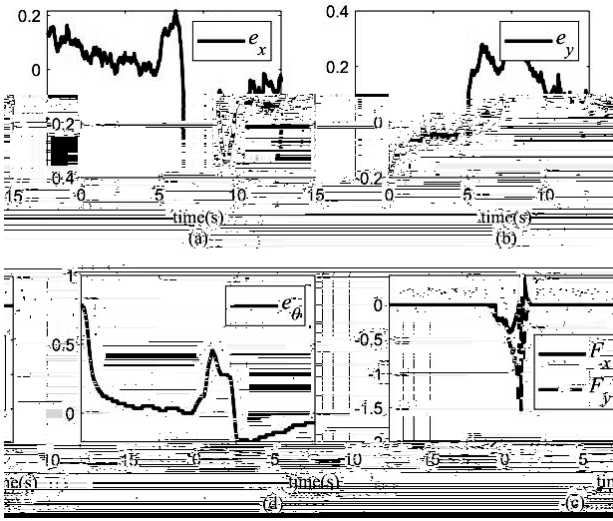


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LSSVR PatchTSMixer NOx

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摘要：基于某电厂某炉内历史运行数据，研究开发了SCR入口NOx浓度预测模型。模型采用Python实现，以炉内负荷、煤质、氧量、燃烧器挡板开度等运行参数为输入特征。对比研究了在线更新的LSSVR和PatchTSMixer两种模型。结果表明，LSSVR模型在RMSE、MAE和R²等评价指标上均优于PatchTSMixer模型。此外，LSSVR模型还具有训练速度快、泛化能力强、非线性拟合性能好的特点。

关键词：NOx浓度预测；在线更新的LSSVR；PatchTSMixer；建模；模型对比分析

Research on Predicting NOx Concentration at the SCR Inlet of A Coal-fired Unit Using Online-updated LSSVR and PatchTSMixer Models

ZHAO Yuqiu LI Ping JIN Yilong

Abstract: Based on historical operational data from a MW coal-fired unit at a power plant, this study developed a predictive model for NOx concentration at the inlet of the denitrification (SCR) system. Implemented using Python, the model takes key operating parameters such as unit load, coal feed rate, flue gas oxygen content, and burnout damper opening as input features. Two algorithms online-updated Least Squares Support Vector Regression (LSSVR) and the Patch-based Time Series Mixer (PatchTSMixer) were employed for model construction and performance comparison. The results show that, in terms of evaluation metrics including RMSE, MAE, and the coefficient of determination (R²), the LSSVR model outperforms the PatchTSMixer model in prediction accuracy. Additionally, the LSSVR model demonstrates faster training speed, better generalization capability, and stronger nonlinear fitting performance.

Key words: NOx concentration prediction; online-updated LSSVR; PatchTSMixer; modeling; model comparative analysis

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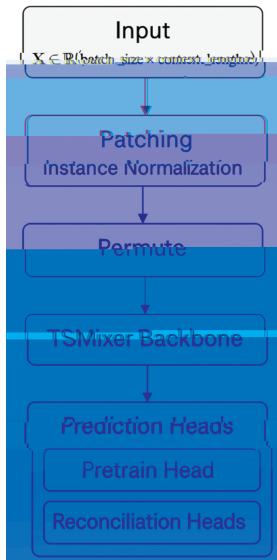
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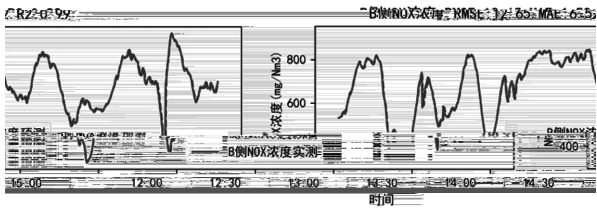
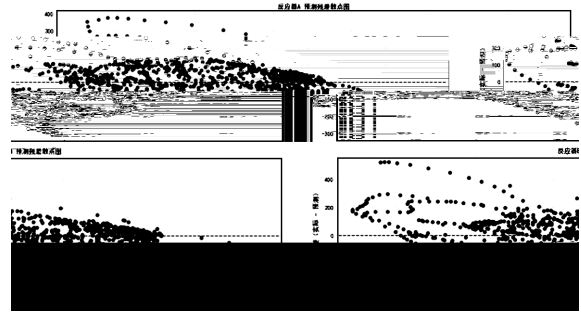
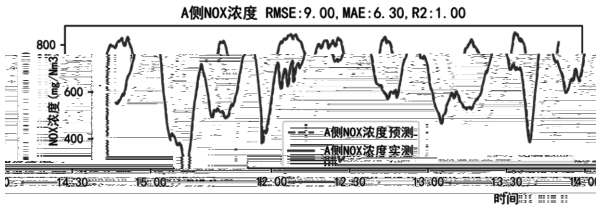
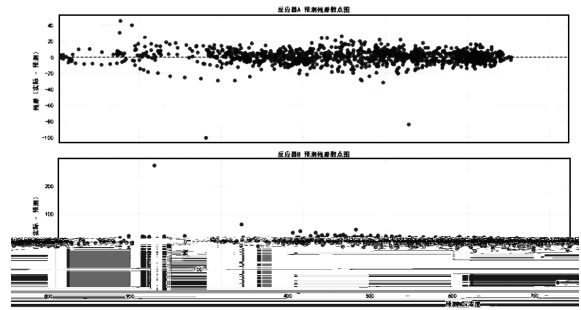
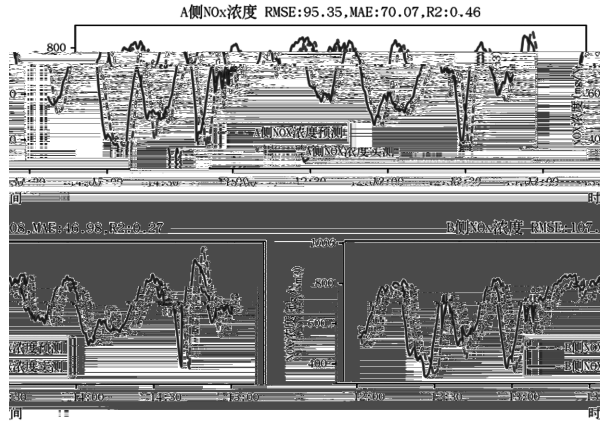


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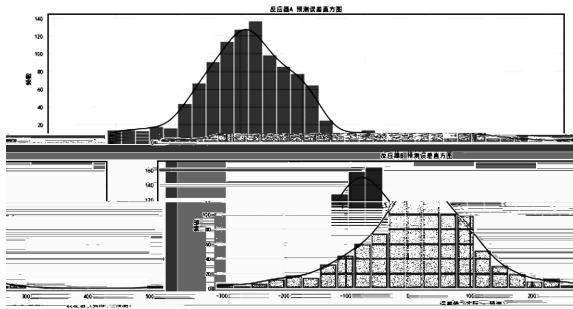
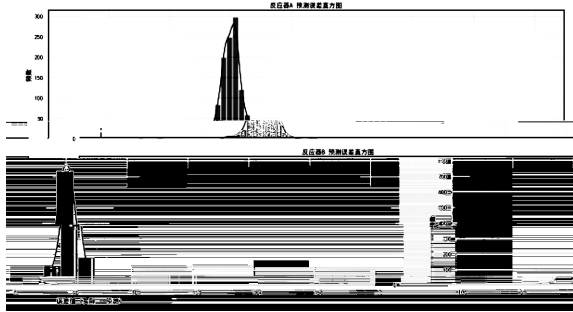
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$$R = \frac{\sum_{i=1}^n \frac{y_i - \bar{y}}{n} \frac{y_i - \bar{y}}{n}}{\sqrt{\sum_{i=1}^n \left(\frac{y_i - \bar{y}}{n}\right)^2 \sum_{i=1}^n \left(\frac{y_i - \bar{y}}{n}\right)^2}}$$

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Analysis of Performance Indicators for Municipal Solid Waste-to-energy Incineration

JIANG Ruibao LIU Wei

Abstract: This paper focuses on the performance indicators of municipal solid waste-to-energy, extracts and analyzes relevant provisions from national and industry standards associated with waste-to-energy incineration projects. It provides an in-depth interpretation of the underlying policy orientations and technical principles governing these regulations. Drawing upon extensive practical experience in bidding processes and project implementation cases, the study refines, categorizes, and summarizes critical performance indicators, offering valuable decision-making support and reference benchmarks for industry professionals.

Key words: waste-to-energy; performance indicators; indicator analysis; environmental compliance metrics

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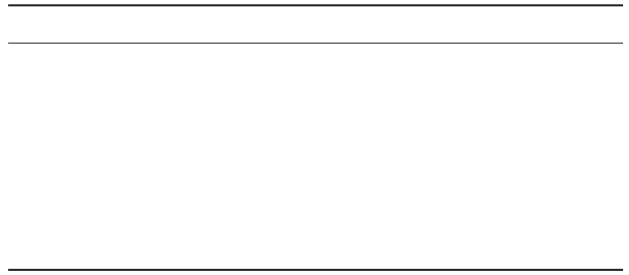
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market demands. Through systematic analysis and synthesis of the technology s principles, current research status, application cases, existing issues, and development prospects, this paper provides a reference framework for further advancing the development and application of coal-ammonia co-combustion technology.

Key words: coal ammonia-doped combustion; low carbon combustion technology; combustion characteristics; NO_x control; thermal power carbon reduction



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Overview of High Altitude Hydro-generator Design for Xizang DG Power Station

SHI Mingxing ZHANG Jinglin ZHEN Di

Abstract: Based on the condition of high altitude hydropower station, this paper mainly introduced the electromagnetic design, insulation and anti-corona technology optimization and ventilation system structure optimized design of high altitude hydro-generator, which solved the problem such as corona, discharge and heat dissipation difficulties.

Key words: high altitude; hydro-generator; electromagnetic design; insulation; anti-corona; heat dissipation; ventilation system

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Life Prediction of Rubber Used in Hydrogen Sealing System of Nuclear Power Turbine Generators

LIU Conghui WANG Jianli WANG Yong

Abstract: For Nuclear Power Turbine Generators(generator parts), hydrogen sealing is one of the most important seals, and the research about the aging life of their rubber sealing materials is an important part of improving the reliability of nuclear power units. In this paper, two rubber materials, fluororubber and EPDM, are selected for using in nuclear power hydrogen seals, and their compressive stress relaxation, Shore A hardness, leakage rate and other properties are investigated respectively, and the service life of these two materials is estimated by using the Arrhenius equation, and the service life of these two materials on the unit is derived in theory, which provides a theoretical basis and reference for the replacement cycle of hydrogen seals in nuclear power units.

Key words: nuclear power; hydrogen sealing; fluoroelastomer; EPDM; life pre

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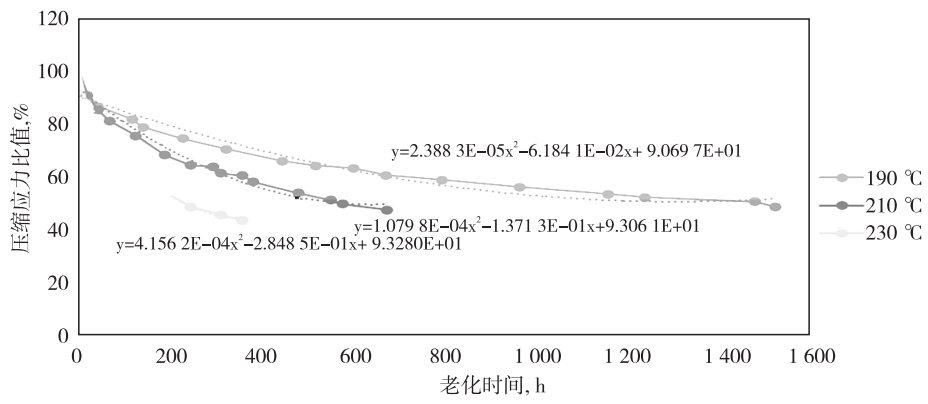
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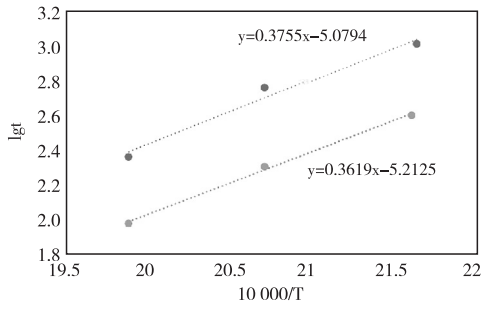
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● 压缩应力
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● 压缩应力
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50%

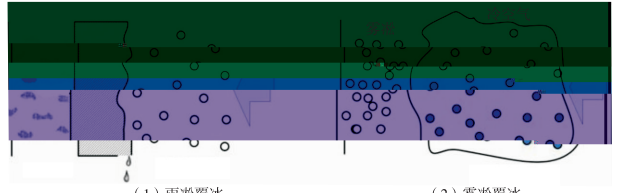
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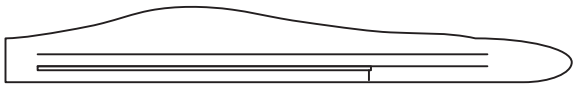


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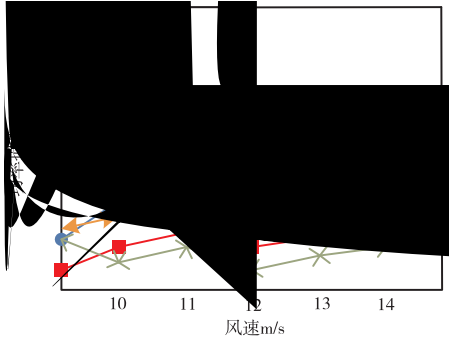
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Speed Sensorless Control of PMSG Based on Improved Sliding Mode Observer

HU Jun DAN Xiaoyan WU Xiaotian LI Xiyan

Abstract: To address the problem of insufficient estimation accuracy caused by the discontinuous switching control characteristic of traditional sliding mode observers, this paper proposes an improved sliding mode observer design method. By introducing a new type of continuous switching function to replace the traditional sign function and designing an adaptive sliding mode gain, the high-frequency chattering phenomenon of the sliding mode observer is suppressed, and the estimation accuracy of speed and position is improved. To verify the effectiveness of the proposed method, a simulation model of a . MW permanent magnet wind power generation system is built in the MATLAB/Simulink environment. Simulation results show that compared with the traditional sign function method and the boundary layer method, the proposed method exhibits superior performance in both speed estimation and electrical angle estimation.

Key words: PMSG; speed sensorless; sliding mode observer; switching function

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$$\begin{matrix} \overline{t} \begin{bmatrix} i \\ i \end{bmatrix} \\ \overline{L} \begin{bmatrix} u \\ u \end{bmatrix} \end{matrix} \begin{bmatrix} \frac{R}{L} & \frac{L \ L}{L} \\ \frac{L \ L}{L} & \frac{R}{L} \end{bmatrix} \begin{matrix} \begin{bmatrix} i \\ i \end{bmatrix} \\ \overline{L} \begin{bmatrix} E \\ E \end{bmatrix} \end{matrix}$$

$$\begin{matrix} \overline{t} \begin{bmatrix} \hat{i} \\ \hat{i} \end{bmatrix} \\ \hat{L} \begin{bmatrix} u \\ u \end{bmatrix} \end{matrix} \begin{bmatrix} \frac{R}{L} & \frac{L \ L}{L} \\ \frac{L \ L}{L} & \frac{R}{L} \end{bmatrix} \begin{matrix} \begin{bmatrix} \hat{i} \\ \hat{i} \end{bmatrix} \\ \hat{L} \begin{bmatrix} v \\ v \end{bmatrix} \end{matrix}$$

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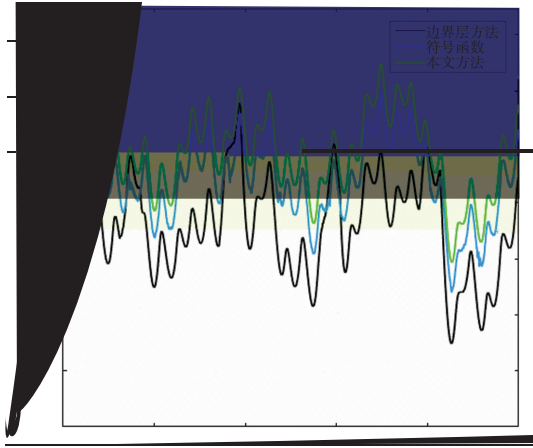
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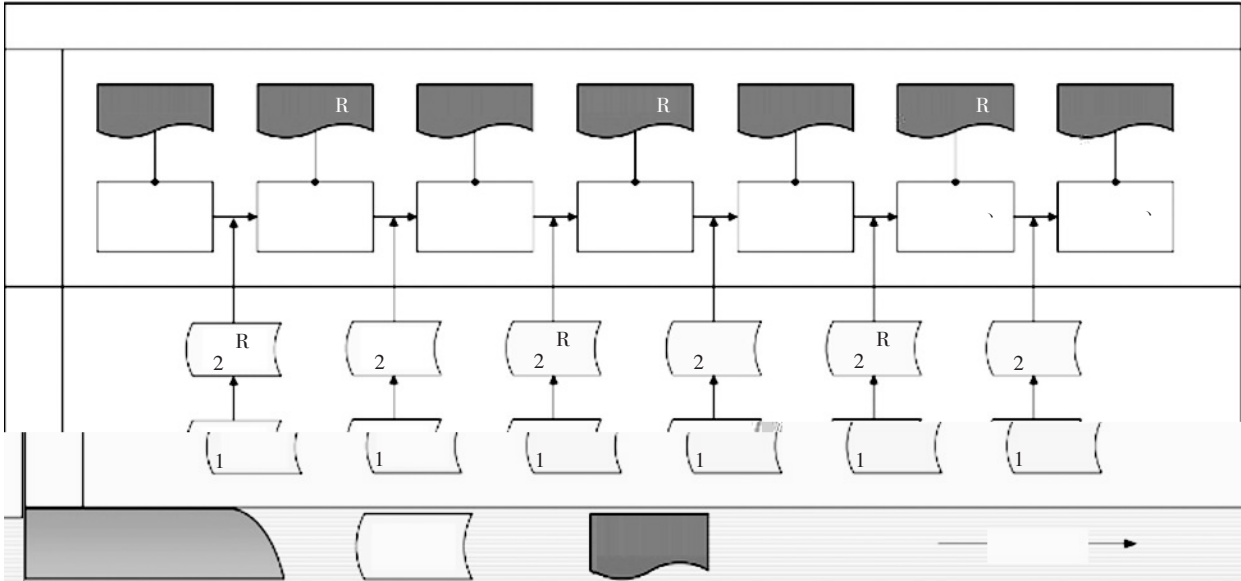
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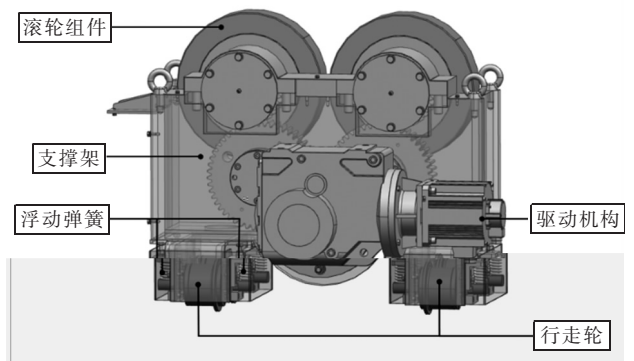
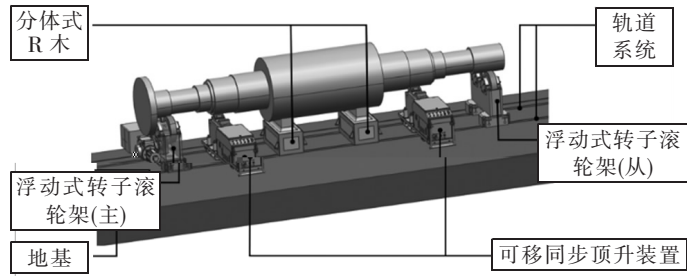


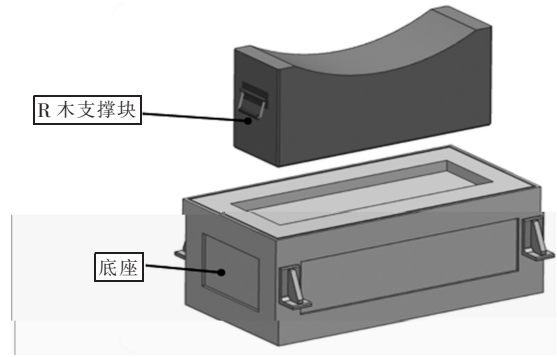
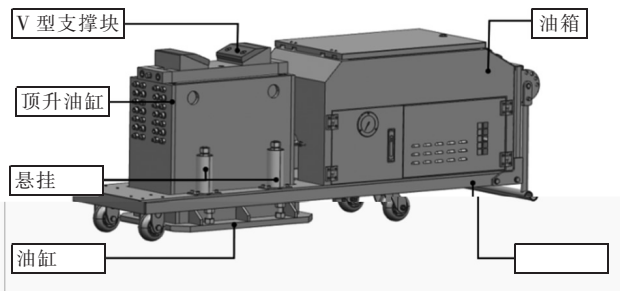
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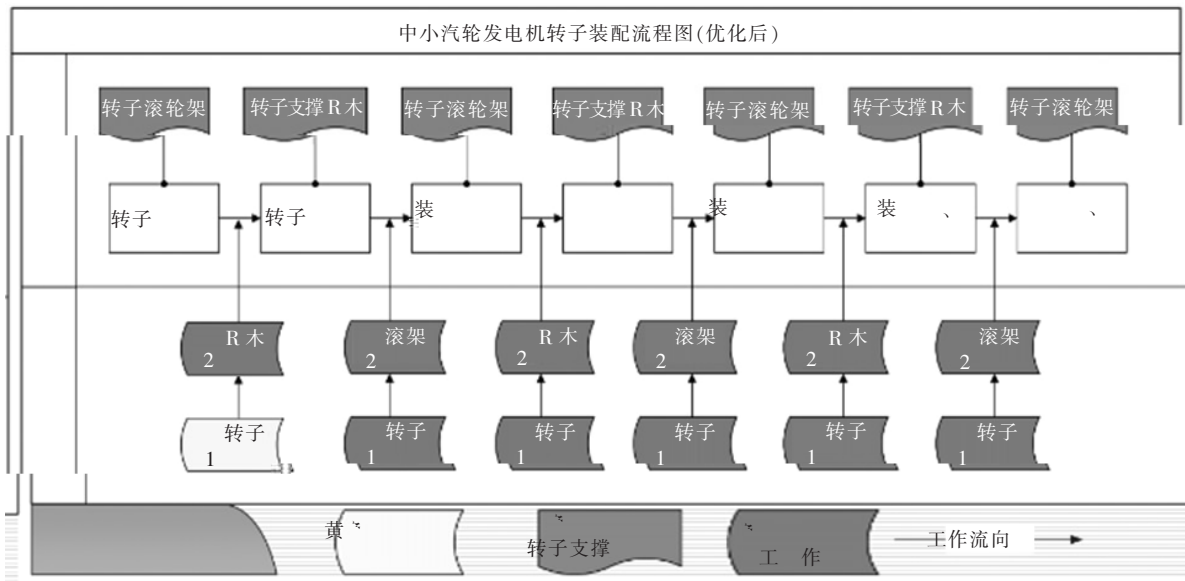


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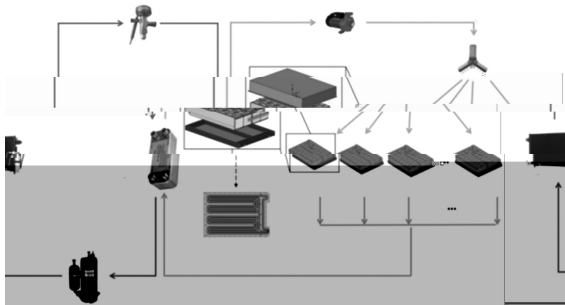


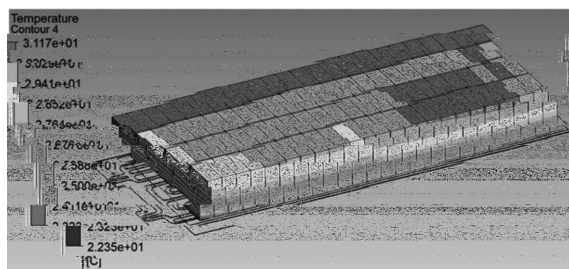
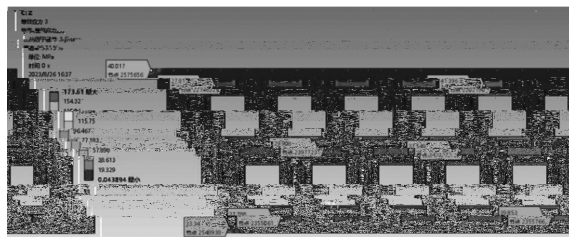
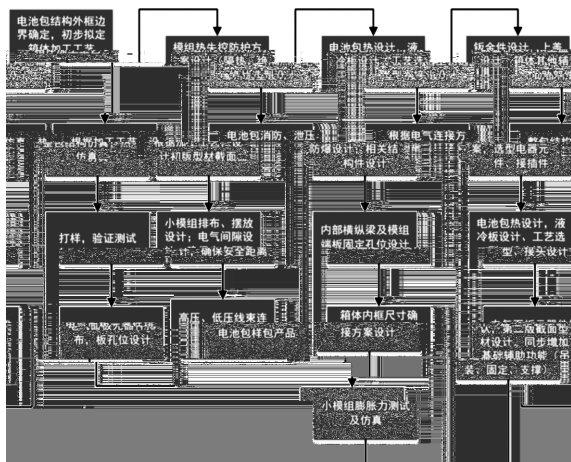
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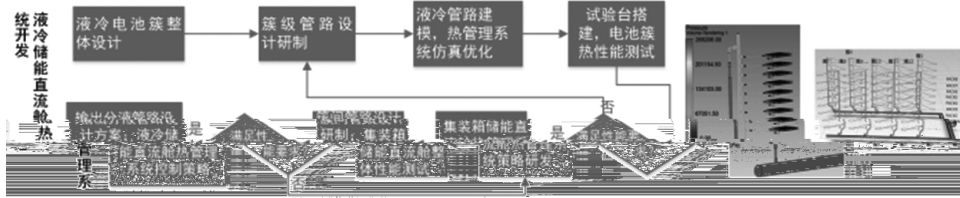
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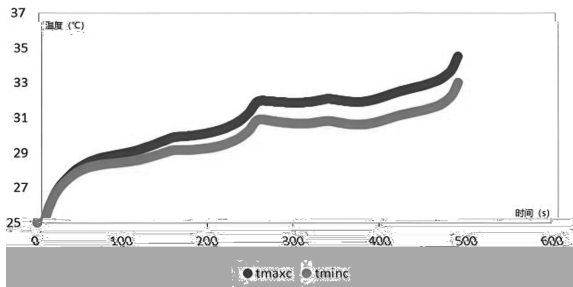
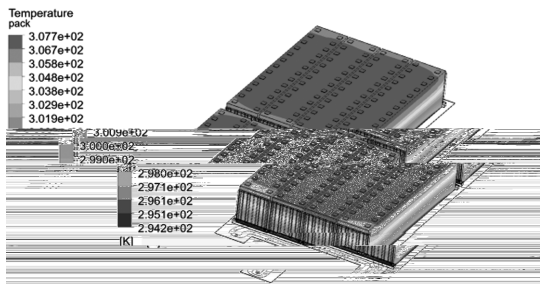
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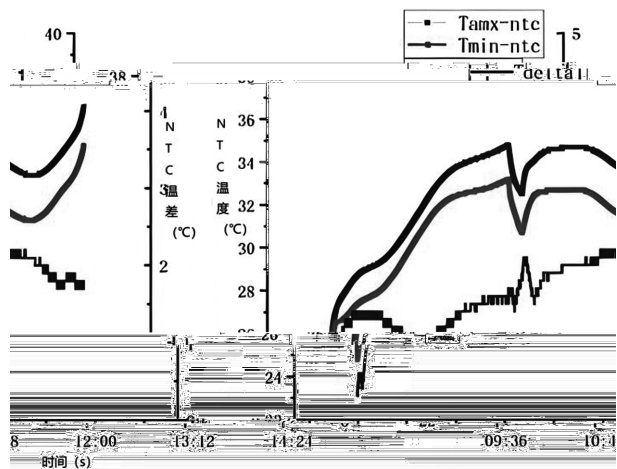




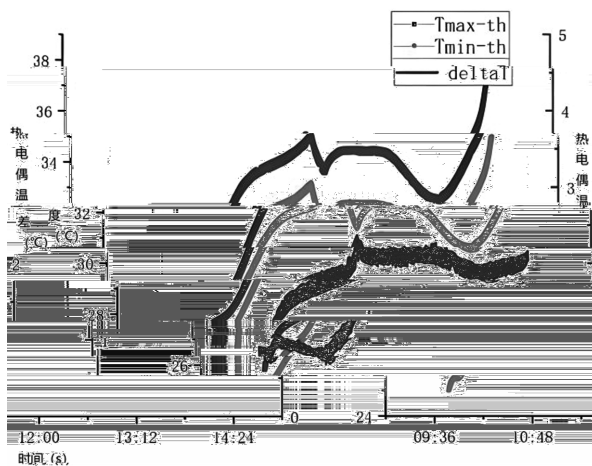




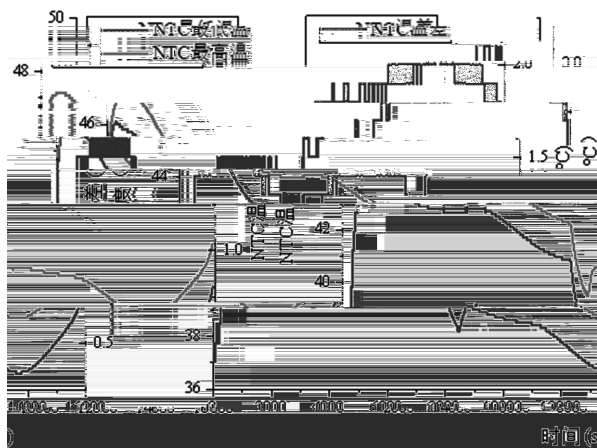
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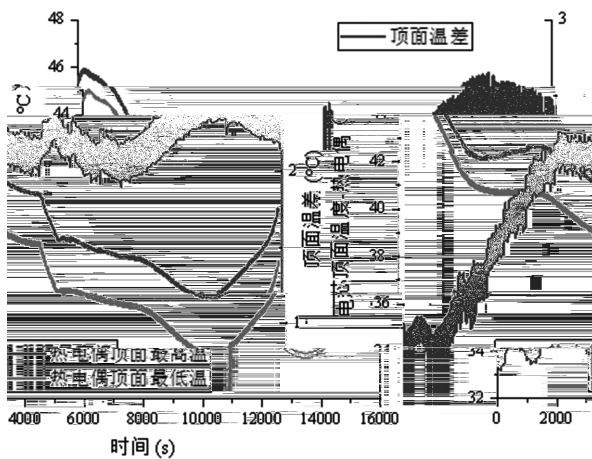
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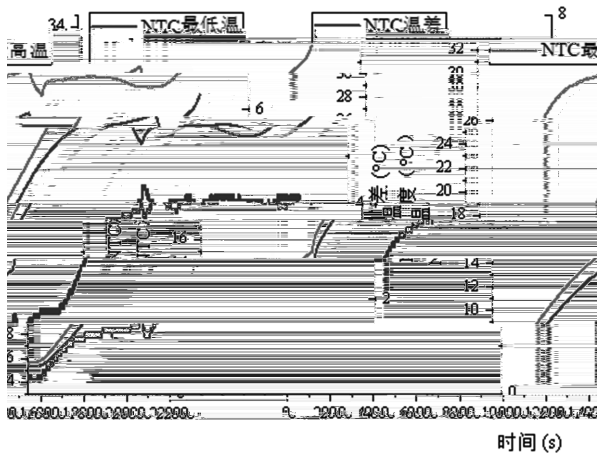
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