

I want dissertation related this field(AI, Boiler, DCS) from some university

Here are several **dissertations from universities** closely related to AI, boiler/thermal systems, and DCS (Distributed Control System) topics. While a dissertation specifically titled “AI in boiler DCS” is rare, the following works are highly relevant—they address AI, process/thermal/energy systems, and distributed control, often with case studies or frameworks adaptable to industrial boiler contexts.

1. “Fault Detection Automation in Distributed Control Systems using AI”

- **University/Repository:** TechRxiv (preprint server)
- **PDF Link:** [Download PDF]^[1]
- **Summary:**

Focuses on fault diagnosis in DCS using data-driven AI methods (fuzzy logic, SVM, KNN), offering automation of fault detection for industrial systems (applicable to thermal and energy sectors).

“The advantage of using this method is reducing the time of fault diagnosis and also not needing an on-site specialist, since in complex and expensive industries such as oil and gas industries, the issue of time and amount of production loss is very important.”
- **Relevance:** Techniques and automation described here are directly adaptable to boiler/DCS environments, especially for predictive maintenance and process reliability.

2. “Renewable Energy Integration in Distribution System with Artificial Intelligence”

- **Author:** Yi Gu
- **University:** University of Denver
- **Year:** 2020
- **PDF Link:** [Download PDF]^[2]
- **Summary:**

Explores AI-driven methods to enhance control and integration for distributed power systems. Covers distributed control, optimization, and fault detection—frameworks widely applicable to energy and thermal management, including boilers.
- **Relevance:** Includes distributed AI for process optimization, which can be applied to DCS environments in thermal/boiler power plants.

3. "Distributed Control, Optimization, and State Estimation for Renewable Power Systems"

- **Author:** Not specified
- **University:** University of Denver
- **Year:** 2021
- **Repository:** [Digital Commons @ DU]^[3]
- **Summary:**
Studies distributed (including DCS) control, optimization (using neural networks, PI control), and state estimation for power systems. Includes discussions of economic dispatch and robust control algorithms for distributed energy.
- **Relevance:** Direct application to any large-scale, distributed thermal energy (including boiler) management system using AI and advanced control.

4. "Advancing Intelligent DC Microgrids: AI-Enabled Control, Cybersecurity, and Energy Management"

- **Author:** Yihao Wan
- **University:** Technical University of Denmark
- **Year:** 2023
- **PDF Link:** [Download PDF]^[4]
- **Summary:**
Advanced AI (including deep reinforcement learning) for energy management, distributed control, and cybersecurity in DC microgrids. Discusses hierarchical control frameworks and the interplay between AI and DCS.
- **Relevance:** Most new boiler or thermal plants are being considered as microgrids/subsystems within smart grids; these AI methods are highly transferrable for DCS-based energy/thermal optimization.

5. "Artificial Intelligence to Enable Smart Prognostics and Health Management within Smart Factories"

- **University:** Northeastern University
- **PDF Link:** [Full PDF]^[5]
- **Summary:**
Integrates AI for predictive diagnostics and optimization in distributed control architectures—directly supporting energy savings, operational reliability, and time reduction in industrial settings (including thermal and boiler processes).
- **Relevance:** Shows how to structure AI-data pipelines, smart sensor integration, and DCS-connected decision-making for process industries.

How to Use These for Your Boiler/AI/DCS Topic:

- **Adapt the methodology and AI architectures** from these works (often provided for microgrids, turbines, or general industrial DCS) to boilers—emphasizing process optimization, predictive maintenance, fault detection and energy management.
- **Refer to the introduction/methods of these works** to see how the authors frame the integration of AI with distributed, real-world industrial systems.
- **Apply or simulate similar control/optimization models** (e.g., neural networks, MPC, fuzzy systems) to your own boiler-DCS data or a simulated boiler plant.

More Dissertation Sources

- **Grafiati's "Distributed Control System (DCS)" Dissertation List**
[See the listing]^[6] for numerous dissertations/theses on DCS (search with AI/energy/thermal/boiler keywords for filtering).

If you need a sample structure or tailored template for your own dissertation based on these resources, let me know your focus (such as optimization, diagnostics, predictive maintenance, or control algorithms), and I can generate a detailed outline and writing guidance.

References:

- [4]
- [3]
- [2]
- [1]
- [5]
- [6]

All PDFs are available for immediate download/read; citation follows provided search results.

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1. https://www.techrxiv.org/users/680470/articles/677157/master/file/data/ieee_dcs_fd_last_corrected/ieee_dcs_fd_last_corrected.pdf
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