



# National Research University

Moscow Power Engineering  
Institute

Institute of Heat and Nuclear Energy

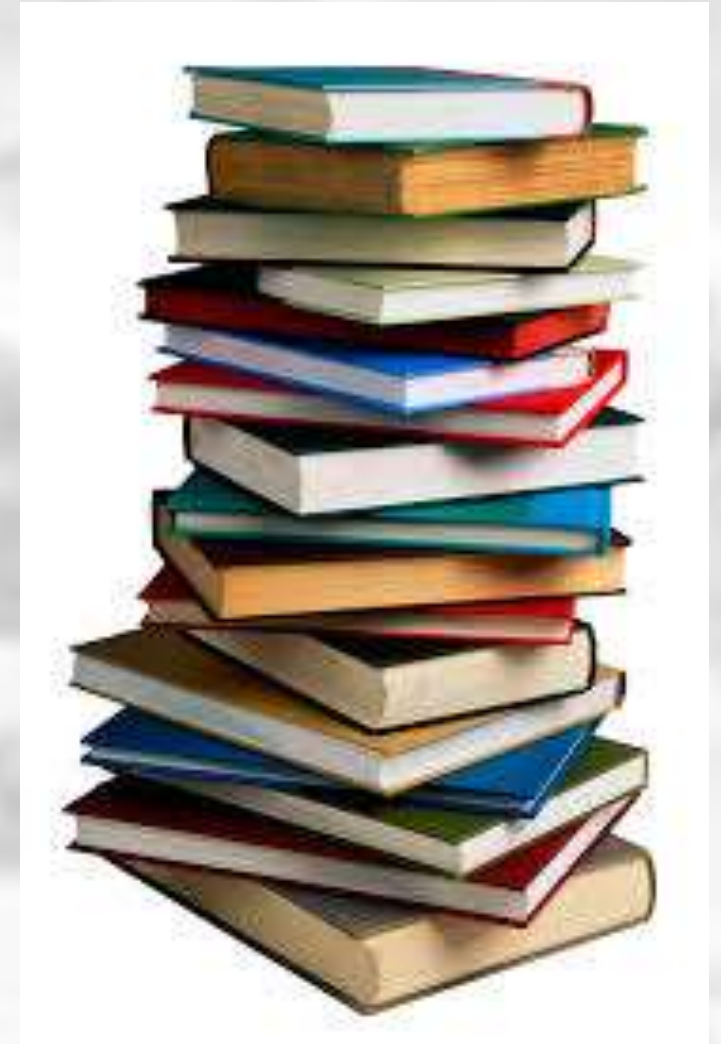


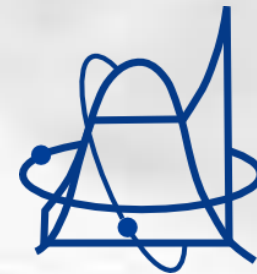
Master program

**OPERATION AND MANAGEMENT  
OF ENVIRONMENTALLY SAFE  
THERMAL POWER PLANTS**

# General requirements

- Math
- General physics
- Thermodynamics
- Heat and mass transfer
- Gas and liquid hydrodynamics





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WWW - concept



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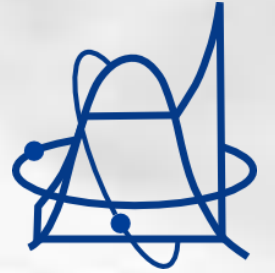
nergy

cology

conomics

EEE - concept

# WHAT:



Basis of production of heat and energy at TPPs

High Efficiency Power Plant (Gas turbine technology)

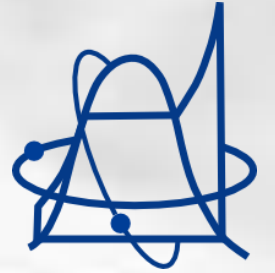
Water chemical regimes

TPPs and nuclear power plants (to be chosen)

Power utilities gas and air lines (to be chosen)

# Energy:

# WHAT:

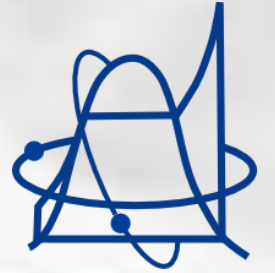


Basis of production of heat and energy at TPPs  
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TPPs and nuclear power plants (to be chosen)  
Power utilities gas and air lines (to be chosen)

Energy:

**EQUIPMENTS,  
Principal schemes**

# WHAT:



Ecological security

Technology of using of fuel and energy oils

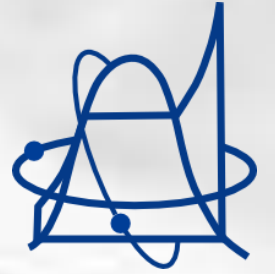
Power utilities gas and air lines (to be chosen)

Fuel –handling systems, ash and slag removal  
(to be chosen)

# Ecology:



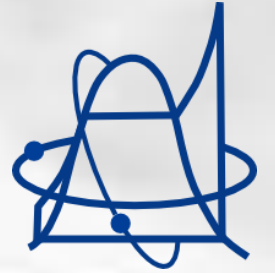
# WHAT:



Basics of production management  
in power engineering

# Economics:

# WHY:



Basis of production of heat and energy at TPPs

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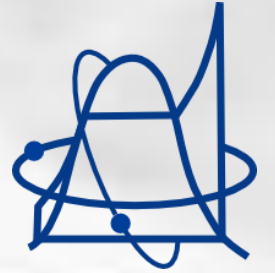
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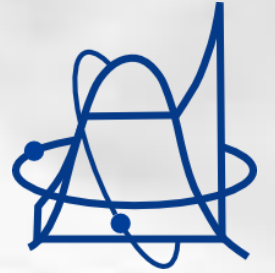
# WHY:



Basis of production of heat and energy at TPPs  
High Efficiency Power Plant (Gas turbine technology)  
Water chemical regimes  
TPPs and nuclear power plants (to be chosen)  
Power utilities gas and air lines (to be chosen)  
*Hydrogen and electrochemical power systems*

# Energy:

# WHY:



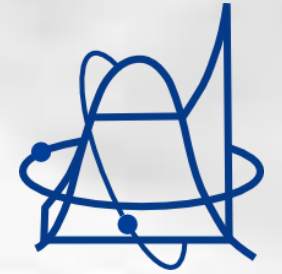
Ecological security

Technology of using of fuel and energy oils

Power utilities gas and air lines (to be chosen)

Fuel –handling systems, ash and slag removal  
(to be chosen)

# Ecology:



# WHY:

Ecological security

Technology of using of fuel and energy oils

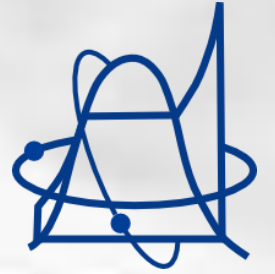
Power utilities gas and air lines (to be chosen)

Fuel –handling systems, ash and slag removal  
(to be chosen)

Legislation

# Ecology:

# WHY:



Basics of production management  
in power engineering

# Economics:

# HOW:

Water chemical regimes

TPPs and nuclear power plants (to be chosen)

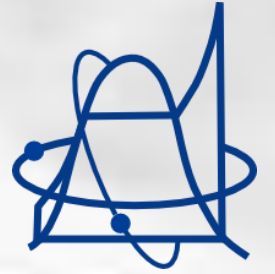
*Automated control systems for thermal processes of power units*

*Methods of optimization calculations in heat power engineering*



# Energy:

# HOW:

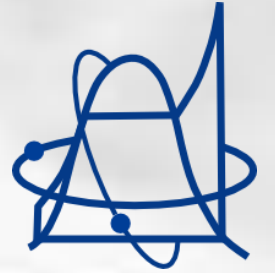


Technology of using of fuel and energy oils  
Fuel –handling systems, ash and slag removal

# Ecology:



# HOW:



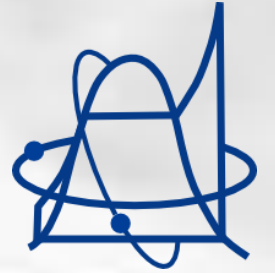
*Methods of optimization calculations  
in heat power engineering*

*Technical and economic optimization  
in power engineering*

Energy saving in heat power engineering

# Economics:

# And for sure!



Russian language

Philosophy and Innovative Thinking in Engineering

**Bonus**

Thanks a lot.