# WRITING A SCIENTIFIC RESEARCH ARTICLE

# ARTICLE. *FORMAT IS :*

**TITLE**
**AUTHORS**
**ABSTRACT**
**INTRODUCTION**
**MATERIALS AND METHODS**
**✔RESULTS**
**TABLES AND GRAPHS**
**DISCUSSION& Conclusion**
**REFERENCES (LITERATURE CITED)**

# ARTICLE.RESULTS

*1. This is where you present the results you've gotten. Use graphs and tables if appropriate, but also summarize your main findings in the text. Do NOT discuss the results or speculate as to why something happened; that goes in the Discussion.*

# ARTICLE.

*2. You don't necessarily have to include all the data you've gotten during the semester. This isn't a diary.*

# ARTICLE.

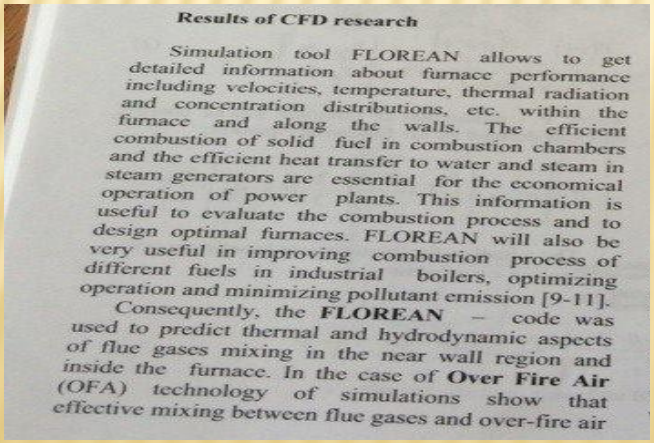
3. Use appropriate methods of showing data. Don't try to manipulate the data to make it look like you did more than you actually did.

# ARTICLE TABLES AND GRAPHS

1. If you present your data in a table or graph, include a title describing what's in the table.


# ARTICLE.

2. Don't use a table or graph just to be "fancy". If you can summarize the information in one sentence, then a table or graph is not necessary.



**Results of CFD research**

Simulation tool FLOREAN allows to get detailed information about furnace performance including velocities, temperature, thermal radiation and concentration distributions, etc. within the furnace and along the walls. The efficient combustion of solid fuel in combustion chambers and the efficient heat transfer to water and steam in steam generators are essential for the economical operation of power plants. This information is useful to evaluate the combustion process and to design optimal furnaces. FLOREAN will also be very useful in improving combustion process of different fuels in industrial boilers, optimizing operation and minimizing pollutant emission [9-11].

Consequently, the **FLOREAN** – code was used to predict thermal and hydrodynamic aspects of flue gases mixing in the near wall region and inside the furnace. In the case of **Over Fire Air** (OFA) technology of simulations show that effective mixing between flue gases and over-fire air

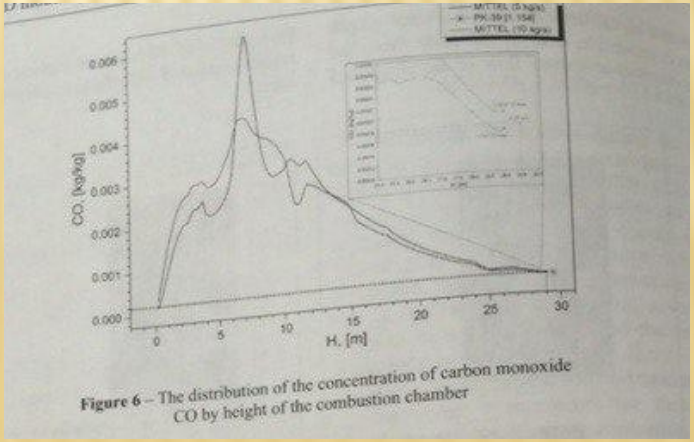
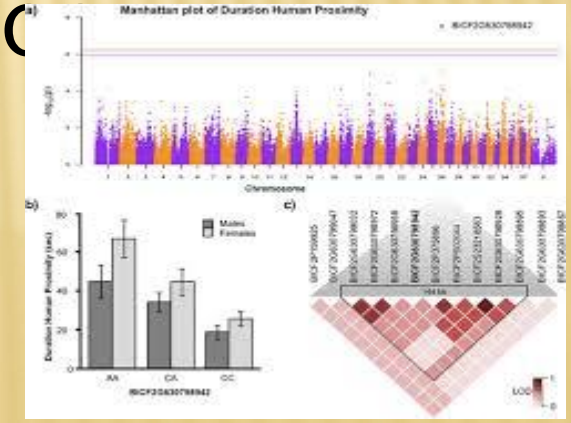



**Figure 6** – The distribution of the concentration of carbon monoxide CO by height of the combustion chamber

# ARTICLE.

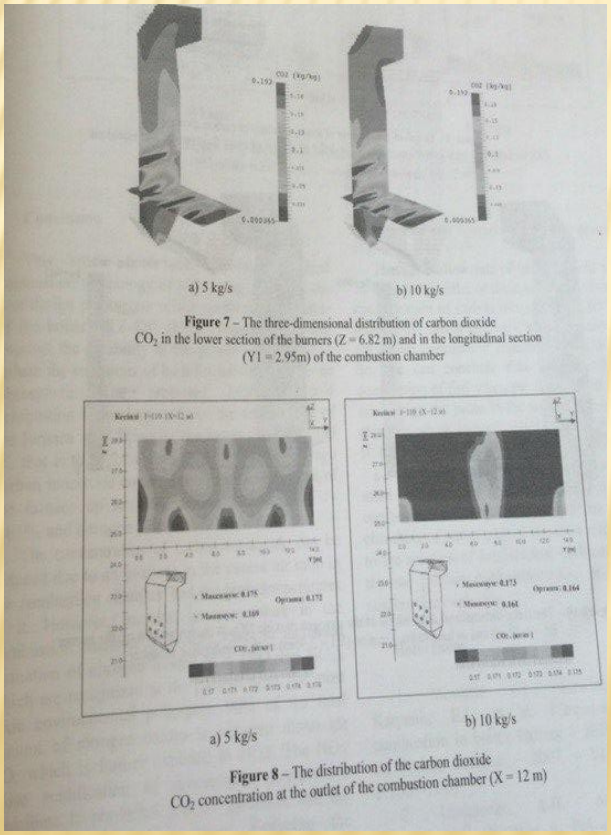
Numerical results should include standard deviations or 95% confidence limits and the level of statistical significance. If the results are not statistically significant, present the power of your study (beta-error rate) to detect a differenc



ARTICLE.

# TABLES AND GRAPHS

## *3d modeling temperature flows in the combustion chambers of the power plants*

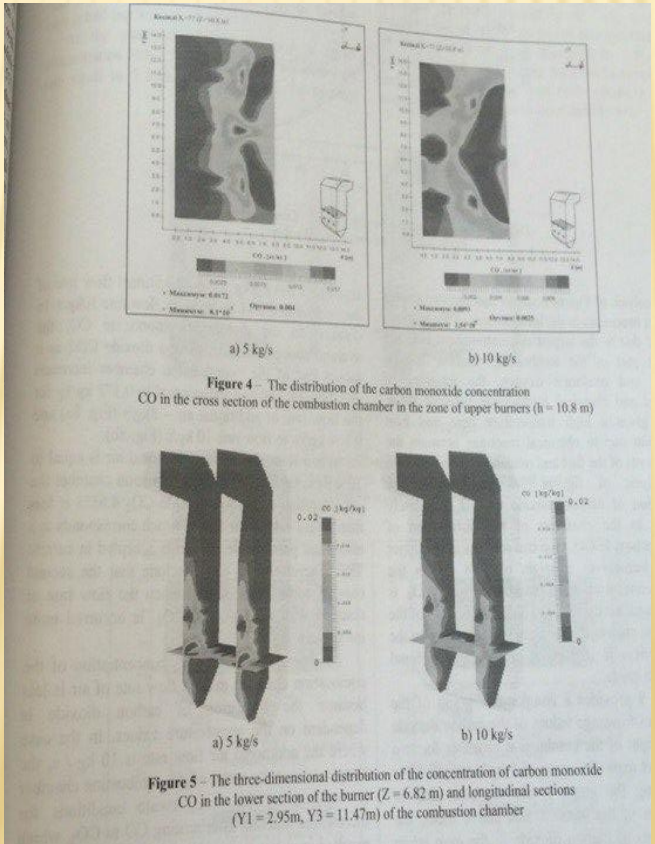


a) 5 kg/s b) 10 kg/s

**Figure 7** – The three-dimensional distribution of carbon dioxide $CO_2$ in the lower section of the burners (Z = 6.82 m) and in the longitudinal section (Y1 = 2.95m) of the combustion chamber

a) 5 kg/s b) 10 kg/s

**Figure 8** – The distribution of the carbon dioxide $CO_2$ concentration at the outlet of the combustion chamber (X = 12 m)

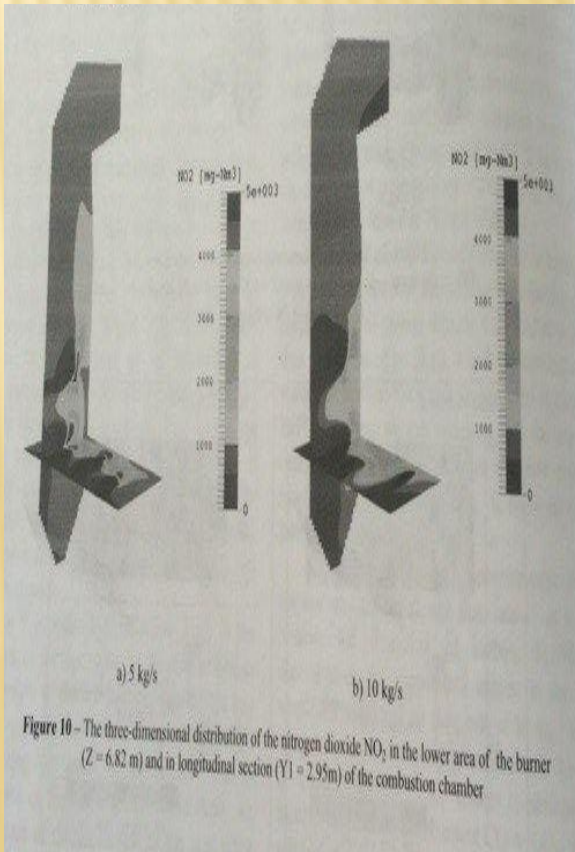


a) 5 kg/s b) 10 kg/s

**Figure 4** – The distribution of the carbon monoxide concentration CO in the cross section of the combustion chamber in the zone of upper burners (h = 10.8 m)

a) 5 kg/s b) 10 kg/s

**Figure 5** – The three-dimensional distribution of the concentration of carbon monoxide CO in the lower section of the burner (Z = 6.82 m) and longitudinal sections (Y1 = 2.95m, Y3 = 11.47m) of the combustion chamber



a) 5 kg/s b) 10 kg/s

**Figure 10** – The three-dimensional distribution of the nitrogen dioxide $NO_2$ in the lower area of the burner (Z = 6.82 m) and in longitudinal section (Y1 = 2.95m) of the combustion chamber

# *The End*