Project
‘VIRTUAL LABORATORY’
as a learning tool for nuclear experiment preparation

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JINR Lab: Virtual Laboratory

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The Aim of the project

- To support the theoretical part of learning with experimental learning
- To learn about different equipment's in Nuclear experiment through,
- firstly Virtual laboratory software (both theoretical background and Virtual equipment)
- Then practical work with the real equipment's
- Final use what we learned practice with equipment in the main goal of lab which is ,
- **Measuring the thickness of the Foil through Energy loss Spectrum.**

Software 'Virtual Laboratory'

- About
- Part 1 ‘Some Concepts of Nuclear Physics’
- Part 2 ‘How to Measure Radioactivity’
- Part 3 ‘Theoretical Models of the Atomic Nucleus’
- Part 4 ‘Nuclear Fission Experiment’
- Part 5 ‘Light Ions Spectrometer – Measurements’
- Part 6 ‘Light Ions Spectrometer – Data Analysis’
- Part 7 ‘Interactive environment for nuclear experiment modeling’

Virtual Laboratory of Nuclear Fission

Virtual Laboratory

The goal of the project is to include current scientific data into the educational process, to conduct virtual and online laboratory research based on information and communication technologies using modern scientific equipment and data obtained from the existing physical facilities.

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JOINT INSTITUTE FOR NUCLEAR RESEARCH

UNISA university of south africa

NATIONAL RESEARCH NUCLEAR UNIVERSITY • MOSCOW ENGINEERING PHYSICS INSTITUTE • MEPhI

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Св. Климент Охридски

IN LUMINE TUO VIDE BIMUS LUMEN
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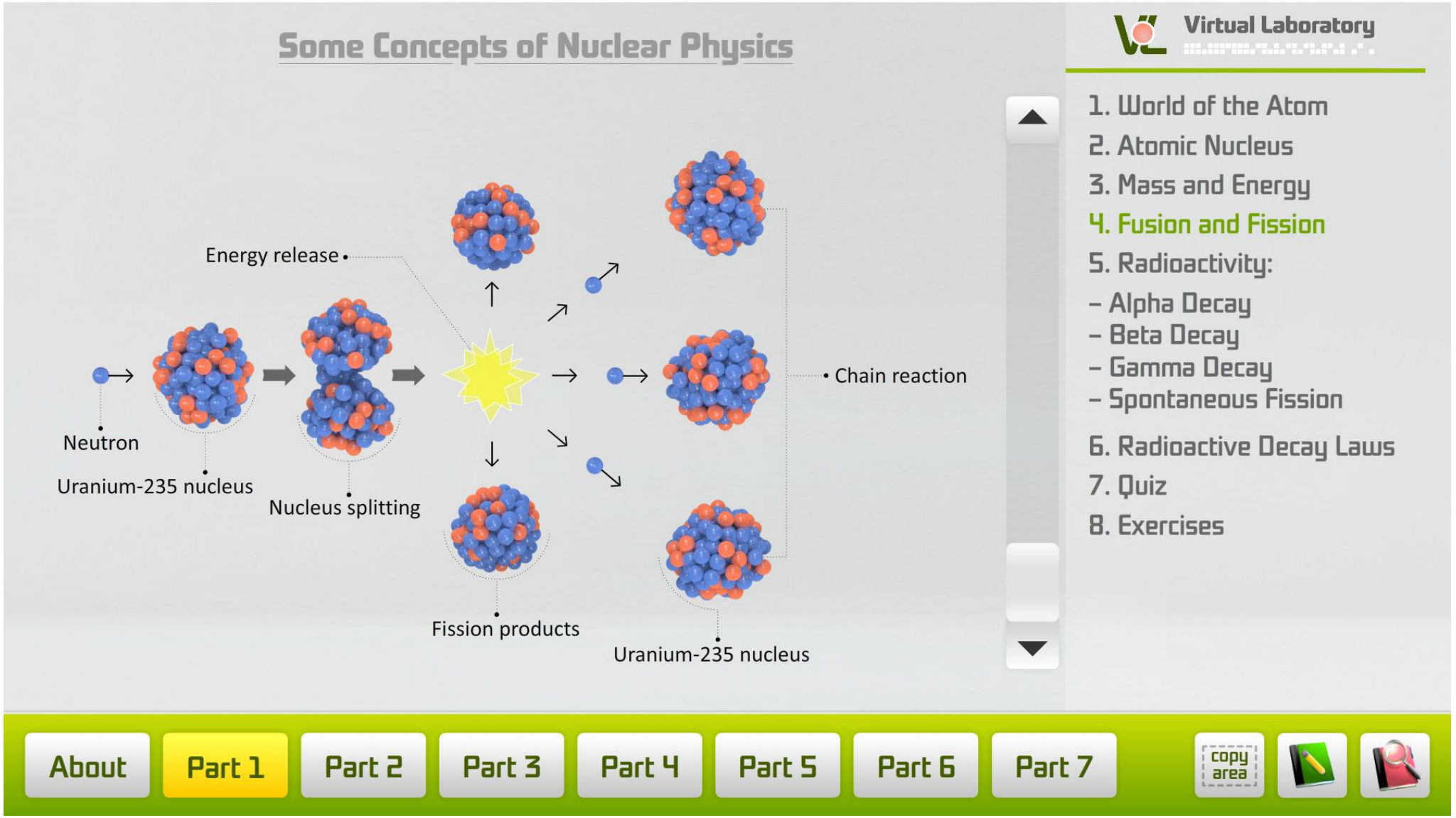
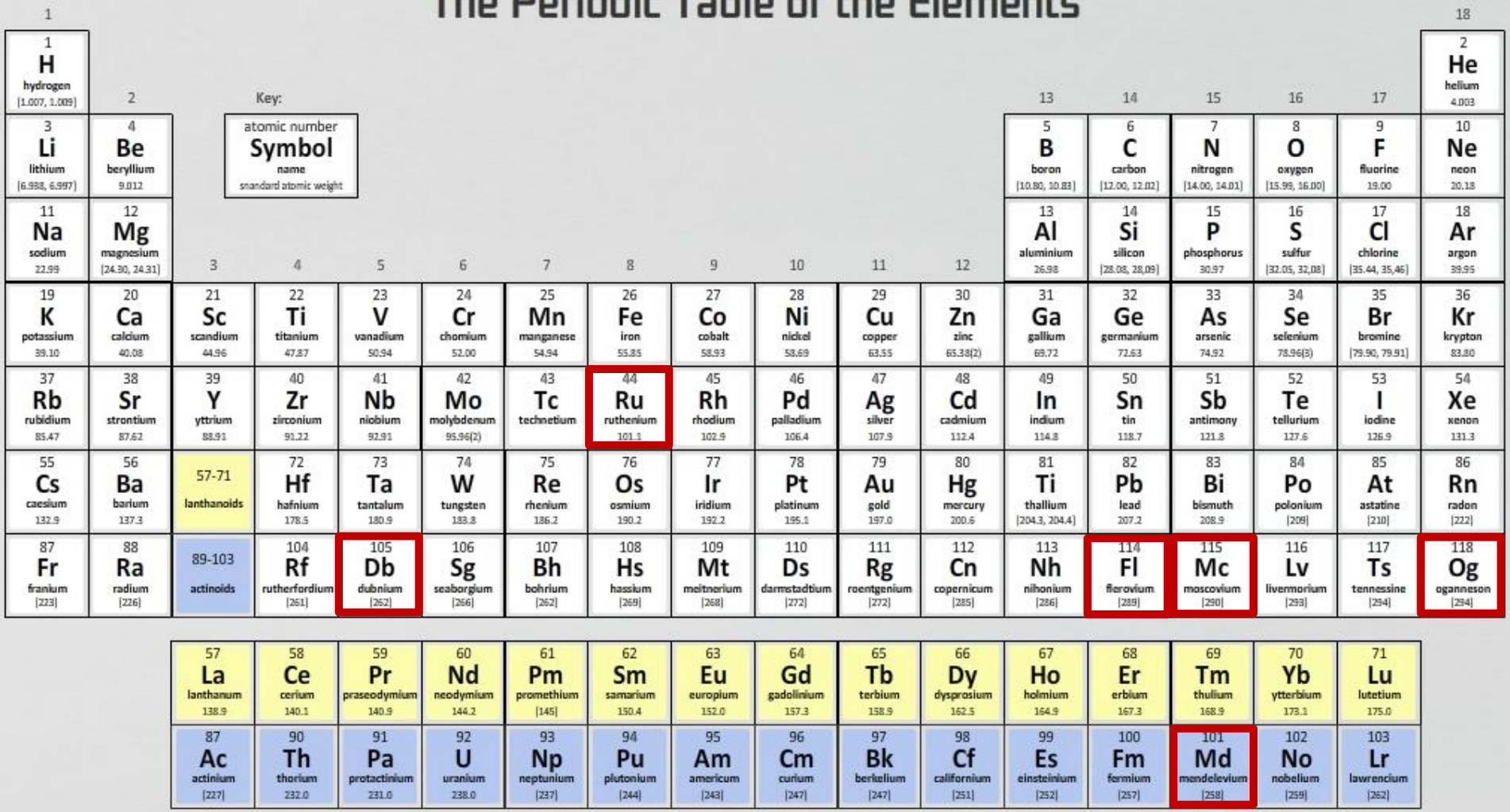
Together in Excellence

INTERGRAPHICS ИНТЕРГРАФИКА

Theoretical basis



7/20. Choose 6 elements whose names are connected with Russia.



Study of signals from a pulse generator

Now you see 2 signals from the pulse generator on the oscilloscope screen. These signals accurately coincide with each other because we used identical cables of the same length. To prove this fact superimpose one signal on another.

LEMO-LEMO (1 м)

LEMO-LEMO (1 м)

LEMO-BNC (1 м)

LEMO-BNC (1 м)

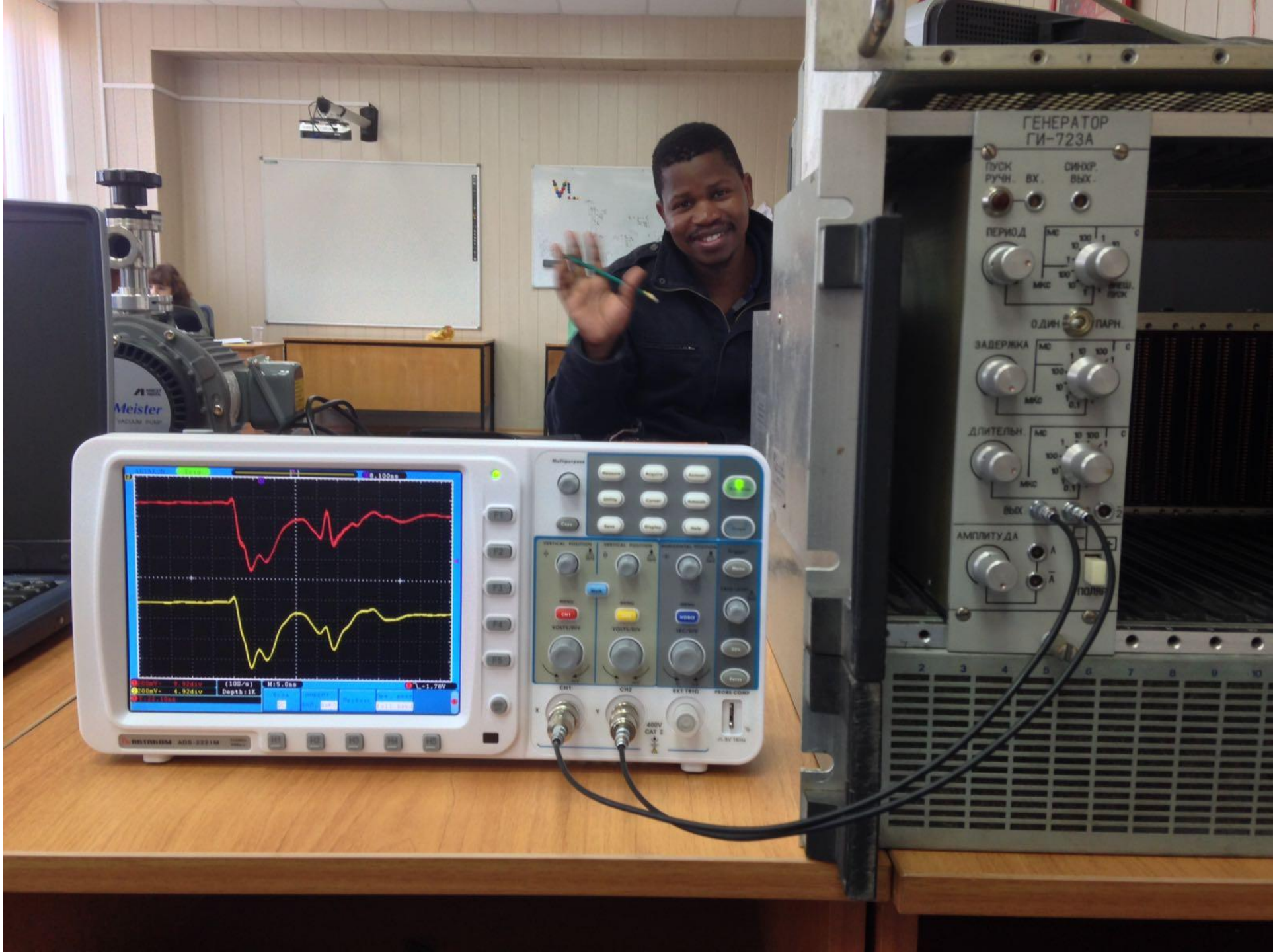
[previous]

[next]

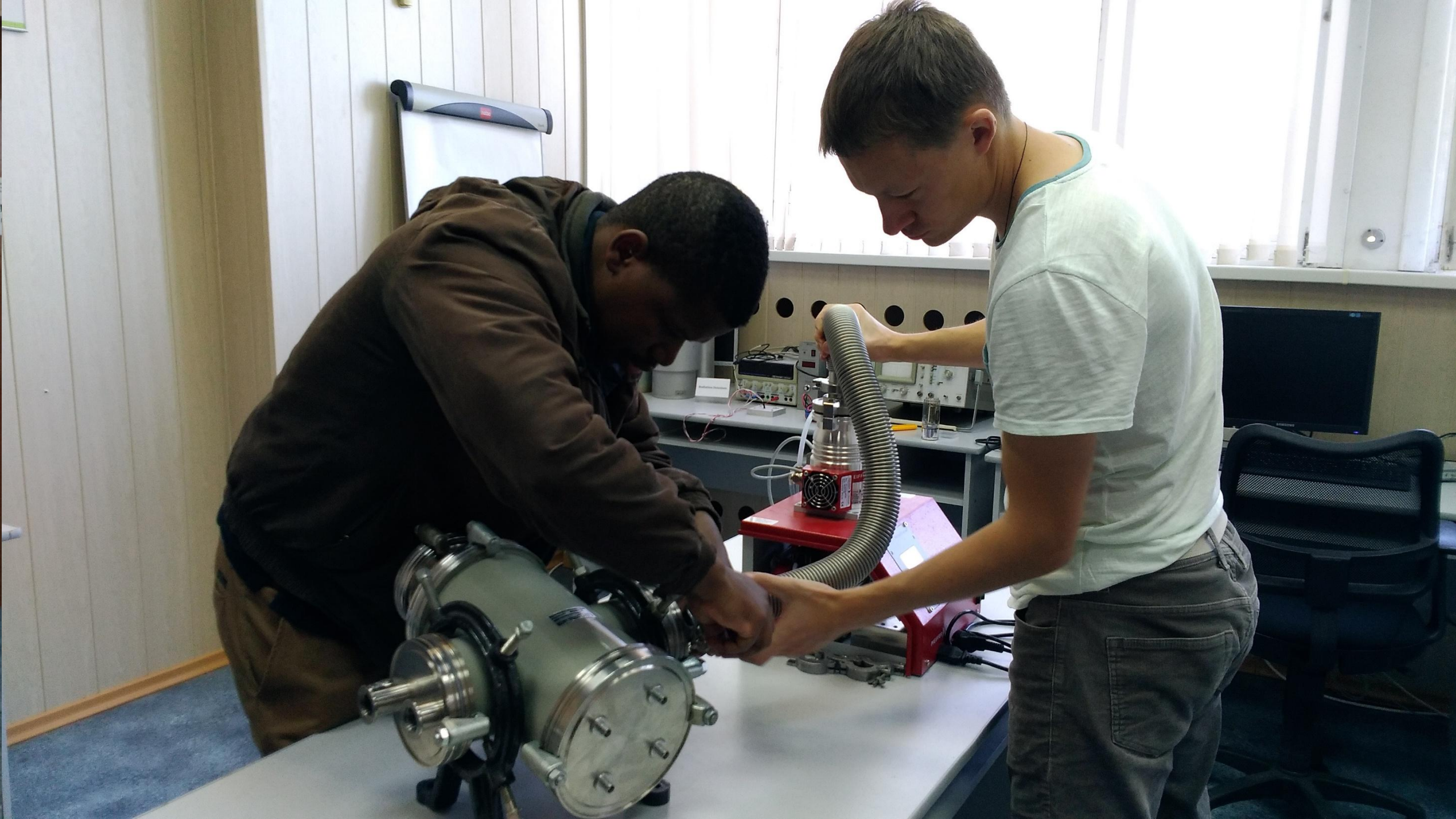
About | Part 1 | Part 2 | Part 3 | Part 4 | Part 5 | Part 6 | Part 7

copy area

In real life


ГЕНЕРАТОР
ГИ-723А
ПУСК
РУЧН.
ВХ.
СИНХР.
ВЫХ.
ПЕРИОД
ОДИН.
ПАРН.
ЗАДЕРЖКА
ДЛИТЕЛЬН
ВЫХ
АМПЛИТУДА
Meister

The main Project Methodology



- Data Processing building the spectra's

- Calculation with Excel and Data Processing building the spectra's for the most probable energies of our spectra's

- Calculating the difference between the Initial Energy and the final Energy and using Trim tables to find approximate
- Thickness of the Foil.

Results and Discussion

Conclusion

ACKNOWLEDGEMENTS

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iThemba LABS

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