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Natalya Yakovleva, Ksenia Suomolaynen
Karelian Teachers Training University, Republic Karelia, Russian Federation

Educational Resource "Quantum Physics" for Students of Karelian Teachers-Training University

Educational resources are important components of education. Substantial, well formed web educational resources are able to stimulate a process of self-education of students, and, thus, are able to increase the efficiency of all systems of education. There are very few educational resources (ER) of quantum physics in Internet, especially in Russia.

ER "Quantum Physics" consists of on-line educational materials, which include selected lectures on some themes of this course ("Blackbody Radiation", "X-rays", etc.), problems' collection, information on great physicists. ER is used by students of 3rd and 4th courses at Physics and Mathematics faculty KTTU during studying quantum physics.

Introduction

The students of Physics and Mathematics Faculty after graduating of Karelian Teachers Training University (KTTU) work as teachers of Physics, Mathematics and Informatics.

The course of Quantum Physics is proposed for the 3rd year students, majored in Physics and in Mathematics. Educational Resource (ER) "Quantum Physics" course contains the materials of selected lectures and tasks collection. Also there is some information about great physicists.

The Basic components of ER are:

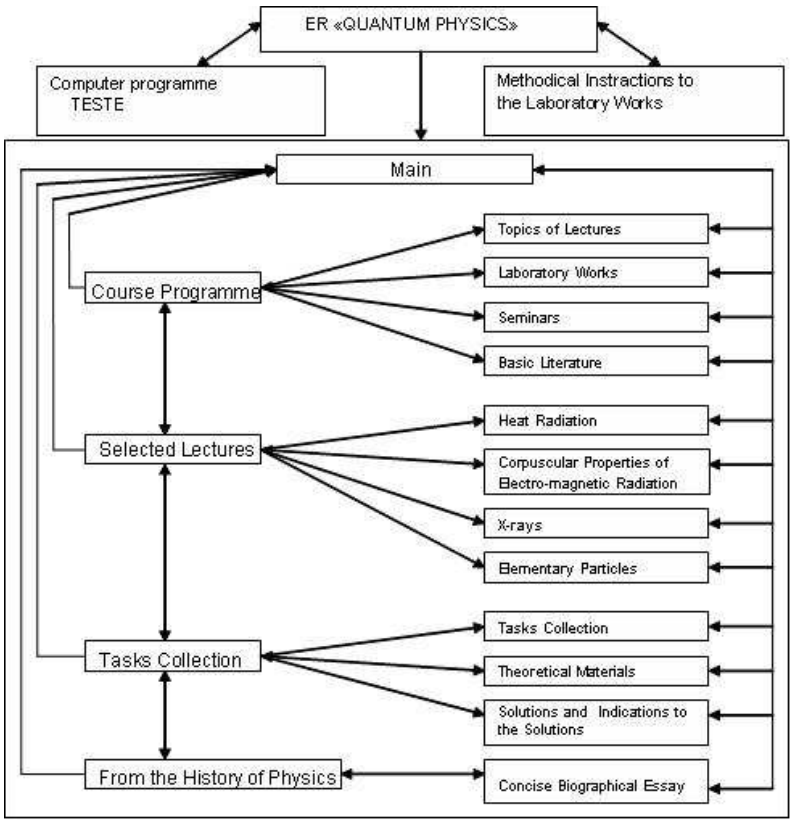
- Course programme
- Selected lectures
- Tasks collection
- From the history of Physics

Course Programme presents the list of topics of lectures, seminars and laboratory works on the course of Quantum Physics, as well as basic and supplementary bibliography on the course**.**

Selected lectures represent the materials of selected lectures on the topics "Heat Radiation", "Corpuscular properties of electro-magnetic radiation", "X-rays", "Elementary particles".

All the material above is supplied by illustrations. All the definitions, formulas and intermediate conclusions are emphasized by special color and print. Each lecture is preceded by the list of the questions which are considered here, and followed by the used bibliography.

Tasks collection consists of 10 sections containing the tasks on the basic topics of the course, brief theoretical material, as well as the keys and indications for the solutions of the tasks for each section. In addition by clicking the mark  it is possible to turn to the section of theoretical information on the corresponding topic.



Also there is the component **"From the history of Physics"**, which presents the concise historical illustrated information about the prominent physicists, whose great contribution into the science, particularly, into quantum physics remains the most significant and indisputable up-to-date. Among them W.C. Roentgen, M. Sclodovskaya- Kury, V.K. Geisenberg.

In the present work ***software*** Adobe PhotoShop (for color background accompanying all educational material), Image Ready (for the composition of Gif-images), Microsoft FrontPage (for the composition of pages) were used. In addition, programming medium HTML was used. The structure of ER is represented as a block diagram (on the left) including the basic components, the structure of these components and the types of the links between them.

Conclusion

At present the preparation of the new components of the course: additional lecture materials, the complex of laboratory works instructions and the tests with feedback, is carried on.