

НАУКА: СТУДЕНЧЕСКАЯ НАУКА И ИННОВАЦИИ В СОВРЕМЕННОЙ АЗИИ

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Computrr models in chemistry as an integrative learning factor

Kemerovo technological food industry institute has been around since 1972. Since its inception, our institute has grown into a network of multifaceted educational opportunities to provide quality training for various technical, technological, business, and management degrees.

It has become a leading professional training center for food processing and other companies in Siberia, the Far East, the Ural Mountains, and the CIS countries. At the national level, Kemerovo technological food industry institute is highly rated among other schools of higher learning, and proves its high standing as one of the best colleges in the Kuzbass area.

There are almost 4 thousand full-time students currently training in this institute. Our Institute continues to strengthen its international ties, primarily with the CIS countries. In recent years, cooperation agreements have been signed with schools of higher learning from Kazakhstan and Tajikistan. In this academic year, 37 applicants from Tajikistan became freshmen after successfully passing the enrollment tests.

In order to raise the quality of its degree training, there is an ongoing creative search for advanced forms of academic training.

Kemerovo technological food industry has developed, and actively implements, an innovative academic program called "Comprehensive Hands-On Continuous Training System to Prepare Young Students for a Market Economy".

In a modern educational environment, the student and professor become active participants in the training process. Moreover, a college professor is not merely a trainer and a tutor, but is also a researcher and supervisor of student research. For this reason, cognitive experiences are strengthened by interdisciplinary integration to foster an expert with a competitive personality. An integrated approach to academic content is one way to achieve a significant impact on the development of professional interests among the students. In teaching, the integration is primarily viewed as the process and result of combining curricular elements to improve the integrity of the entire system involving the knowledge, skills, and abilities of the trainees.

The expediency of integration in training is determined by one key goal of education. It is to develop a comprehensive picture of the world in students at a time when actual education is primarily built upon a narrow course. Our experience

of using an integrated approach in teaching is based on an introduction to and the involvement of newly enrolled students in research and development efforts. It is helpful for their successful socialization and adaptation, i.e. their competitiveness as graduates. The competitive edge of students may include a drive to obtain new information and knowledge, and the expansion of intellectual opportunities by involvement in conferences, competitions, and other similar events.

The Asian Students' Forum «Education without borders. Altai – Asia 2012» gave us an excellent opportunity to present our research and development endeavors, and the cooperation between professors and students under the theme «Computer Models in Chemistry as an Integrative Learning Factor».

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О перспективах использования возобновляемых источников энергии для нужд конечных потребителей

Актуальность перехода систем энергоснабжения на альтернативные источники энергии не вызывает сомнений. С каждым годом количество преобразователей солнечной, ветровой и прочих видов энергии возрастает. Согласно отчету ООН, в 2008 г. во всем мире было инвестировано \$140 млрд. в проекты, связанные с альтернативной энергетикой, тогда как в производство угля и нефти было инвестировано \$110 млрд., что говорит о высоком значении этой отрасли для мирового сообщества.

Казахстан обладает значительными ресурсами возобновляемой энергии в виде гидроэнергии, энергии солнца, ветра, биомассы. Однако, помимо части гидроэнергии, эти ресурсы не нашли широкого применения вплоть до настоящего времени. Основной потребитель топлива в Казахстане – производство электроэнергии и тепла. В структуре топливного баланса электростанций основную роль играет уголь, доля которого составляет около 75%, доля газа – 23%, доля мазута – 2%.

При существующих генерирующих мощностях наблюдается дефицит производства электроэнергии. Общая установленная мощность электростанций составляет около 18700 МВт. Однако существующие генерирующие мощности имеют значительный срок эксплуатации (25 и более лет) в связи, с чем располагаемая мощность составляет порядка 14600 МВт. В структуре генерирующих мощностей тепловые электростанции составляют 15420 МВт, или 87% от общей мощности, доля гидростанций – около 12%, другие (к которым в основном относятся прочие альтернативные источники энергии) – около 1%.

Альтернативная энергетика обычно подразделяется на следующие ключевые направления: