

working to make even more advancements in this area. Initially, the design will be used on people with spinal-cord injuries, who have lost nearly all movement and would benefit the most from using the robotic limb.

Transradial and transtibial prostheses typically cost between US \$6,000 and \$8,000. Transfemoral and trans-humeral prosthetics cost approximately twice as much with a range of \$10,000 to \$15,000 and can sometimes reach costs of \$35,000. The cost of an artificial limb does recur because artificial limbs are usually replaced every 3-4 years due to wear and tear. In addition, if the socket has fit issues, the socket must be replaced within several months.

The end result would be a prosthetic that acts as a veritable extension of one's own body. And a platform capable of accurately distinguishing between, and interpreting, different sensory signals – temperature, pressure, motion – would “allow the incorporation of the limb into the sense-of-self” and offer unprecedented freedom of movement for a prosthetic wear.

The agency also wants an ultra-reliable platform, with an error rate of less than 0.1 percent and a lifespan of around 70 years. By comparison, current neural-recording interfaces last around two years before they need to be replaced. Sounds far-fetched, but Darpa's already got one major lead. The agency's new Neurophotonics Research Center will investigate fiber-optic prosthetic interfaces that can incorporate thousands of sensors into a single filament.

ПРИМЕНЕНИЕ ВОЛНОВЫХ ПРЕОБРАЗОВАТЕЛЕЙ В ЭНЕРГЕТИЧЕСКОЙ ОТРАСЛИ

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World energy is recently more and more focused on new clean technologies based on renewable energy sources. One such source is the energy of the waves. In nature, this energy is presented in the most concentrated form. Wave energy has a higher compared to wind and sun energy density. Sea waves accumulate the energy of the wind over large areas of overlocking. They are, therefore, natural concentrate energy. Nowadays, there exist some types of plants, some of which are successfully used; some of them exist only “on paper”. For example, in December 2005, a review was published under the title «Marine Renewable (Wave and Tidal), Opportunity Review», which deals with many kinds of tidal and wave power. In this review there were two power plants that have attracted my

attention: TAPCHAN and Oyster. This review described the advantages and disadvantages of these systems.

Wave converter of TAPCHAN (OWEC) type. On the rising ground of the shore a tank is located above sea level. A tapered channel leads to the tank. The waves come in a wide part of the channel and increase in height as narrowing. Waves are swamped through the channel into the tank. Water returns to the ocean through the pipe. Water flows through the pipe of low pressure turbines of 350 kW. This power station has worked in Norway since 1985, and produces 2 million kW/h of electricity annually. There are some disadvantages:

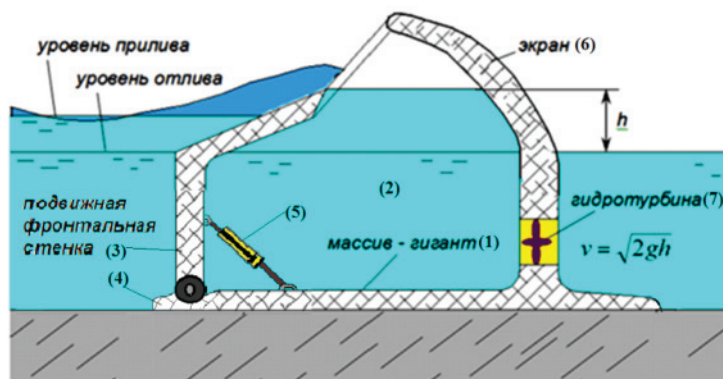
- the application is limited by the regions where the tides are small;
- severe icing at low temperatures;
- high wave energy losses (due to friction and encounter with a partially reflected waves) during the passage through the channel walls;
- a narrow wavelength range in which the effective concentrator work is able;
- low efficiency when small short waves expose;
- a high level of capital expenditures;
- limitation of the localities where the efficiency of the apparatus is provided.

Wave converter of “Oyster” (OWSC) type. “Oyster” is the wave power station which is located on the sea coast at moderate depths of about 12 meters. Huge plate floats hinged to the base plates located on the bottom are swayed by waves and drive the two-sided piston pump. The pump drives sea water to the shore where it turns the rotor generator. The entire electrical system is placed on the coast.

Disadvantages:
efficient usage only in large waves when there is an intense rocking of flaps;
the ability to shift and destruct installations by storm waves.

The technical result is the creation of a combined structure of the wave converter based on the systems OWSC and OWEC which eliminates their weaknesses and combine their advantages. The objective is to increase the efficiency of the converter of OWEC type by using wave energy in a wide range of height and frequency, reducing losses of wave energy on the front wall and increasing the flow rate in the channels of hydraulic turbines.

The design of the device is shown in the figure 1. Reinforced box caisson (1), forming a tank (2) attached to the bottom. The front wall (3), from the sea, is connected to base plate (4) by means of hinges. The movable front wall and base plate is connected by a linear hydraulic converter (5). In the underwater part of the back fixed wall (6) holes with hydro turbines (7) are located.



Wave converter

The device operates as follows. When wave runs up the front wall takes part of the energy passing it to a linear hydraulic converter (5). Top of wave gushes through the front wall (3) and falls into the reservoir (2) forming water level difference in the sea and in the tank (fluid head). Due to the fluid head current is generated within a hole in the back wall driving the hydro turbine (7). The kinetic energy from work of the linear hydraulic converter and hydro turbine is converted into electrical energy.

The device is used in the energy industry as a power plant. Thus, the wave power plants are certainly a good substitute to the traditional methods of producing energy, but the wave energy is a relatively young industry which still requires a large number of tests, possibly corrections, but rather the mass attention.

ИСПОЛЬЗОВАНИЕ ИНТЕРАКТИВНОЙ ДОСКИ В ОБРАЗОВАТЕЛЬНОМ ПРОЦЕССЕ ПО ИНОСТРАННОМУ ЯЗЫКУ

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Внедрение новых технологий в сферу образования ведет за собой переход от старой схемы репродуктивной передачи знаний к новой, творческой форме обучения. Информационные технологии, в совокупности с правильно подобранными технологиями обучения, создают необходимый уровень качества, вариативности, дифференциации и индивидуализации обучения и воспитания. Информационные технологии являются мощным средством обучения, которое способно повысить его эффективность, создать мотивацию ученика. К числу таких современных средств, в первую очередь, необходимо отнести интерактивные мультимедиа доски.

Использование интерактивной доски в обучении иностранным языкам является эффективным средством вовлечения учащихся в активный процесс познания на основе использования интерактивных способов обучения, что позволяет создать условия, способствующие формированию и развитию иноязычной коммуникативной компетенции учащихся. Освоив специфику различных типов интерактивных заданий, а также овладев умениями составлять и использовать в учебном процессе интерактивные задания, учитель в дальнейшем может создавать целые тематические блоки заданий для уроков разных типов и форм.

Задания для интерактивной доски имеют широкий диапазон применения. Они могут быть использованы как в классной, так и во внеклассной работе с учащимися. В некоторых случаях выполнение интерактивных заданий на уроке иностранного языка может заменить традиционное изложение материала, обеспечивая при этом высокую результативность учебно-воспитательного процесса. Интерактивные задания могут быть эффективными средством проверки знаний и умений учащихся. Их применение дает возможность установить не только наличие соответствующих знаний, но уровень их усвоения, способность осознанного применения в новой учебной ситуации.

Опыт работы с интерактивной доской подтверждает эффективное положительное влияние сочетания ее возможностей и реализации дидактических принципов новизны, наглядности, коммуникативной активности, межпредметных связей, интерактивности, обратной связи, сочетания коллективных, групповых и индивидуальных форм работы, а также личностно-ориентированного обучения.

ПУТЕШЕСТВИЕ В БАЙ

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Bali is an island in Indonesia. It is known as an island of a thousand temples. Hinduism is Bali's largest religion. More than 90% of its people are Hindus. Textiles and garments are 45% of their exports. The currency in Bali is the Indonesian rupiah (IDR). Bali's food mainly consists of rice and mostly spicy foods. Tourists often enjoy a local specialty called baby guling (roast pig). Bali has many fruits, such as pineapples, mangos, passion fruits, bananas, coconuts, rambutans, selaks, durians, mangos teens and different kinds of oranges and grapefruits. Bali is also known for its folk music which is played on a group of instruments called a gamelan. The literacy rate for Bali is 45.55%.

Bali is a popular place for tourists. They have lots of historic temples. Bali is known for its great views and its beautiful beaches and volcanoes. Bali has cool days between April and October and hot days from November to March.

Bali is a volcanic island. The two main volcanoes are Mount Agung and Mount Batur. Mount Agung is sacred to the Balinese people.

Internal-green Island Bali is one of the most known and amazing places in the world. Bali is glorified harmonious style of living and high level of service. Bali's culture is founded on ancient traditions, packed abundance of ethnic rites and customs. The enormous amount of temples, rice terraces, mountain tops and lakes create the inimitable view of the island. There is everything for good rest: sun, beautiful nature, warm coast water of the ocean and exotic beaches.

Bali Orchid Garden. In 2 km northward from Sanura Bali Orchid Garden is located. It is possible to see the most different types of thousands of orchids. They are immediately dipped in humid tropical climate, full miscellaneous aroma, coming from ensemble of the flowering plants! The orchids are all over – and on unusual hems and on small “eacons”, and simply in croons of some traces.

Birds Park. It is found approximately at 30 minutes' walk. On territory of 2 hectares more than 250 types of the birds are represented, including exotic. Park presents itself impressive tropical wood with practically imperceptible aviary and several hectares exotic garden itself. Hundreds rare and the most beautiful birds of the world greet you during walk on tropical garden.

Reptile Park. In this park you will be able to see the well-known dragon “komodo”, a single descendant of dinosaurs. It is also represented various types of crocodile, lizards and snakes. Also in magic ritual show is held in Reptile Park pass: snakes are fed and crocodiles fight.

Bali Zoo. The zoo is not typical – here practically no cages and animals strolling freely mostly on all territory. But territory is not small – the enormous amounts of different animals, reptiles and birds live on 12 hectares of tropical wood. The cardinal principle of this zoo consists of unity of a person and nature. So, very many animals and birds are able to be fed, kept in hands and even played with!

The Wood of Monkeys. Located in suburb Ubud on Indonesian island Bali, the Holy Wood of Monkeys is a small Hindu nature reserve, attracts thousands of visitors by its natural beauty, stone temples, local handicraftsmen and monkeys of the Macaques – a bearded primate with glamour, skill sleight of hands and very bad grimaces while seeing people.