

**МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
СУМСЬКИЙ ДЕРЖАВНИЙ УНІВЕРСИТЕТ
КАФЕДРА ІНОЗЕМНИХ МОВ
ЛІНГВІСТИЧНИЙ НАВЧАЛЬНО-МЕТОДИЧНИЙ ЦЕНТР**

**МАТЕРІАЛИ
VIII МІЖВУЗІВСЬКОЇ НАУКОВО-ПРАКТИЧНОЇ
КОНФЕРЕНЦІЇ
ЛІНГВІСТИЧНОГО НАВЧАЛЬНО-МЕТОДИЧНОГО ЦЕНТРУ
КАФЕДРИ ІНОЗЕМНИХ МОВ**

“TO LIVE IN A SAFER WORLD”

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The eighth scientific practical student`s, postgraduate`s and teacher`s
LSNC conference

3D PRINTERS AND PRINTING

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What is a 3D printer? Is any fiction or real technology? 3D-printer - a device that uses the method of layering creating of a physical object in a digital 3D-model. In fact 3D printer is a device that can print any volumetric product. 3D-printing can be implemented in different ways and it uses materials. There are the following printing methods such as:

- 1) laser stereolithography (SLA) - the object is formed from a special liquid photopolymer solidifying under laser irradiation (radiation or mercury lamps).
- 2) selective laser sintering (born selective laser sintering, SLS) (also English. Direct metal laser sintering - DMLS) - object formed from a fusible powder material (plastic, metal) by its melting by laser irradiation.
- 3) electron beam melting - similar technologies SLS / DMLS, only here the object is formed by melting metal powder with an electron beam in a vacuum.
- 4) simulation by fusing (born fused deposition modeling, FDM) - object formed by layering strands of molten fusible working material (plastic, metal, wax).
- 5) manufacturing facilities using lamination (Eng. laminated object manufacturing, LOM) - to a fiber formed of an adhesive (heat, pressure) of thin films of the working material, by cutting (by laser beam or a cutting tool) of the respective circuits in each layer.

Since the possibility of such printing is obvious, so the applications of this technology are:

1. For rapid prototyping, ie, rapid prototyping models and objects for further refinement.
2. For rapid production - production of finished parts of the materials supported 3D-printers
3. Production of various trifles at home.
4. Development of the University of Missouri, allowing to apply a special bio-gel clumps of cells of the specified type. The development of this technology - growing full bodies.
5. In medicine, in prosthetic implants and manufacturing (fragments of skeletons, skulls, bones, cartilage). Conducted experiments on the printing of donor organs.
6. For the construction of buildings and structures

7. Production buildings experimental techniques (cars, telephones, electronic equipment)
8. Food Production

SMART HOUSE

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An important aspect of human life is house. After all, a house, apartment or flat are the places where a person spends most of free time. A house is a fortress which should be cozy, comfortable, beautiful and what is the most important - safe and at the same time needs to be economically efficient. That is the maximum resource saving electricity, water, heat and natural gas.

It starts with the design of the building. Taking into account weather conditions, it is necessary to choose the location, exterior, environmentally friendly materials which we will use for the building.

Next, to fill the house with all necessary furniture and appliances. Smart House is a program on the microcontroller, which manages all the communications that are connected to home, appliances that are in the house and in the yard. It includes control of the lighting, the systems of engineering, the microclimate. The program runs all the time when you get home or when you leave, this is done through a variety of modes. For example, the mod "Standby" saves resources and keeps the appliances off, the temperature is kept as low as possible depending on the weather outside. The program also monitors the airing space, water heating, cooking, etc. And all this can be controlled by the telephone or Internet.

It is worth noting that it is safe. This is done with the help of sensors: gas and water leaks, broken glass and the volume. With the penetration of a burglar into the house breaking glass sensor is triggered and an alarm alerts the police and the owners of the incident.

Smart house is an organism which can understand you. It gives it owner a completely new quality of life. And this is really actual today.