



17-18 November

Uzbekistan, Tashkent - 2022

## TOPICS:

- Renewable energy & Energy Conversion
- Environmental Technologies
- Earth Resources Engineering

## ORGANIZERS:



## **SCOPE**

**The Uzbekistan-Japan International Conference «Energy-Earth-Environment- Engineering»** will be held on 17-18 November 2022 in Uzbekistan Japan Innovation Center of Youth, Tashkent, Uzbekistan.

This Conference will offer researchers from around the world who have interests in interdisciplinary research in energy, earth, environmental engineering. It would like to facilitate interactions between researchers from industry, national laboratories and academia for the future international collaborators.

The following topics and related ones are invited:

- Renewable energy & Energy Conversion
- Environmental Technologies
- Earth Resources Engineering

## **GENERAL INFORMATION**

**Official Language: English.**

The science program committee will schedule both oral and poster sessions in hybrid form including a "live" in-person event with a "virtual" online component.

### **Local Organizing Committee**

Nargiza Amirova, Yukinori Yanagida, Zukhra Kadirova, Nodir Turakhodjaev,  
Sokhibjon Matkarimov, Shakhlo Daminova, Zikrilla Alimov

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## Renewable energy sources as a measure to prevent the depletion of the ozone layer

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We all know that since the 20th century, the level of air and environmental pollution is increasing as a result of the development of industrial technologies and climate change. The air contamination compromises the ozone layer and consequences in the formation of the Ozone Hole, resulting in greater incoming radiation to earth it potentially disrupts the biological life and processes. Ozone layer depletion resulted from rapid industrialization, high consumption of chlorofluorocarbons (CFCs) and halons, and global warming have further worsened the problem towards more destruction. The industrial exhaust gases and automobile fuel gases produced as a result of urbanization create a greenhouse effect and this is the main factor leading to depletion of the ozone layer which causes damaging by excess ultraviolet lights. Reducing the fossil fuel contribution to the global energy system, and in particular doing so with renewable energy sources, is a great challenge for the world community.

Among the renewable energy sources, hydropower is presently the most important source for electrical power generation. It also provides grid stability and reliability, as well as balancing support to intermittent renewable energy, such as wind and solar power. The global contribution of hydropower, in a 40-year perspective, is estimated to be around double that of today.

Bioenergy is an all-round energy source, which can be used for production of electricity, heat, and fuels. The major future biomass energy option is expected to be residues from forestry and agriculture, along with organic wastes. By 2050, the bioenergy contribution is expected to be about 20% of the global energy supply and 10% of global electricity production.

Solar energy using direct sunlight is potentially the most powerful renewable energy source for electricity and heat. The technologies are developing rapidly, and in 2050, solar energy is expected to contribute up to 6% of the total global energy supply and 6% of the global electricity production. The main solar power constraints are high costs and its intermittency. However, while global energy prices are rising, the costs for solar energy are decreasing. Concentrating solar power (CSP) has the potential to provide significant amounts of base-load power, but is not expected to be viable in areas without much direct sunlight.

Wind is a rapidly increasing source of renewable electricity generation, with the main constraint for its development being related to its intermittency. A balancing power source is therefore needed. Today, balancing power comes mainly from fossil fuels. In order to reduce fossil fuel use, a combination of hydropower and wind power constitutes an excellent combination. A future development of large-scale energy storage facilities may allow for greater long-term expansion of wind power.

The ozone layer acts as a natural filter, absorbing most of the sun's ultraviolet rays coming towards the earth's atmosphere. we can prevent its depletion by minimizing fossil fuels that produce greenhouse gases and using renewable energy sources.