

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

CONTENT	
4E: Energy	5
Ryuichi Nakano, Akira Yamaguchi, Kayano Sunada, Takeshi Nagai, Akiyo Nakano, Yuki Suzuki, Hisakazu Yano, Hitoshi Ishiguro, Masahiro Miyauchi Inactivation of SARS-CoV-2 Viruses by Indoor-Light-Sensitive TiO ₂ -based Photocatalyst	5
Toshihisa Ueda Combustion in Boundary Layer	6
Mirabbos Hojamberdiev BaTaO ₂ N: From Materials Synthesis to Heterogenous Water Oxidation Performance	7
A.O. Imamova, M.N. Bobonazarova Renewable energy sources as a measure to prevent the depletion of the ozone layer.....	8
D.T.Toshpulatov, D.R.Hamdamova, Sh.Magdiev, A.M.Nasimov, Kh.Sh.Tashpulatov Synthesis of [Co(bpy)(SCN) ₄] ²⁺ complex for dye sensitized solar cell application.....	9
F.F. Turg'unov, N.A. Ismatullayev Shaxta suvlaridan oqilona foydalanishda energiya samaradorligi.....	10
F.Q. Kholmuminov, F.Sh. Suyunova Green engineering and energy conversion efficiency.....	11
M.D. Pecherskaya, Kh.T. Butanova, S.A. Ibodullaev, O.N. Ruzimuradov, Sh.I. Mamatkulov Modeling and performance analysis of solid oxide fuel cell.	12
S.G. Shokirova, F. Sh. Suyunova Conversion of Solar Energy into Electrical Energy	13
S.Z. Khudayberganova, F.Sh. Suyunova Hydrogen: The most ubiquitous energy source is finally having its moment.....	14
Ш.А. Бегимкулова, Ш.Э. Мирзаев, О.Н. Рўзимуродов, А.М. Насимов Li ион батареялар учун LiMn ₂ O ₄ шпинельнинг золь-гель синтези.....	15
4E: Earth	16
Hideki Shimada, Takashi Sasaoka, Akihiro Hamanaka, Naung Naung Effect of Previous Mined-out Activities on Redevelopment of Underground Gold Mine in Myanmar.....	16
Hiroyuki Kosukegawa, Hikari Fujii, Satoshi Tanaka Development of equipment for measuring soil thermal conductivity.....	20
Rino Ikeda, Hikari Fujii, Hiroyuki Kosukegawa, Retsu Harada Field test and development of numerical models of horizontal ground heat exchangers for ground source heat pump systems.....	21
Sherzod Allaev, Mamoru Kikumoto Mechanical behavior and breakage of pumice volcanic sand under high pressures.....	22
Siyuan Yang Study on the molecular structure and applied function of starches in mineral flotation.....	23
K. Sanakulov, J.N. Narzullaev, O.U. Fuzaylov, H.I. Hamidov Studying the behavior of gold-containing minerals during roasting of KEMIX tailings.....	24
A.K. Kalonov NGMK GMZ-3da sorbsiya jarayoniga beriladigan biokek sifatini oshirish.....	25
A.M. Muzafarov, G.M. Allaberganova, Zh.T. Nazarov, U.U. Sharafutdinov Determination of radium in samples taken from radioactive waste tailing facility.	26
S.T. Matkarimov, A.M. Sainazarov Improvement of technology for processing sulfide copper concentrates in flash smelting furnaces.....	27

F.I. Salomova, D.S. Xakimova Maktab o'quvchilarining kun tartibini gigienik baholash natijalari.....	71
F.Sh. Suyunova, S.Z. Khudayberganova Carbon capture, utilization, and storage: Making decarbonization possible across all sectors.....	72
G. Babojonova, A. Inkhanova, S. Botirov, D. Bekchanov, M. Mukhamediev Polyvinylchloride modification, properties and applications for environmental protection.....	73
F.I. Salomova, T.A. Bobomuratov, N.O. Akhmadaliyeva, A.O. Imamova Hygienic assessment of the impact of household waste on human health.....	74
N.B.Uralov, Kh.Kh. Turayev, A.T. Djahilov, Kh.R. Tillayev Separation of iodine ions in saline water on the basis of urotropine.....	75
F.I. Salomova, T.A. Bobomuratov, N.O. Akhmadaliyeva, A.O. Imamova Problems of atmospheric air pollution in the Republic of Uzbekistan and the ways of their solution.....	76
S.A. Shammatov Mis elektroliti tarkibidan temir yordamida mis kukunlarini ajratib olish.....	77
F.I. Salomova, T.A. Bobomuratov, N.O. Akhmadaliyeva, A.O. Imamova, O.A. Niyozova Formation of the principles of a healthy lifestyle in preschool children.....	78
Sh, Muhammetdjanova, A. Mamanazarov, F. Farmanov, M. Karako'ziyeva Po'lat eritish shlaklarini tiklash muxitda qayta ishlab, temir asosli birikmalarni ajratib olish texnologiyasini tadqiq etish.....	79
Sh.P.Nurullayev, Z.S.Alixonova, D.B.Saidmirzayeva, I.Ro'zmatov Adsorbsiya usulida oqava suvlarni tozalashni nazariy asoslari.....	80
F.I. Salomova, M.X. Mirrahimova, X.A. Sadullayeva, Sh.R. Kobiljonova Prediction and prevention of food allergies in children.....	81
Б.А. Холназаров, Х.Х. Тураев, А.Т. Джалилов Синтез биоразлагаемого суперабсорбирующего гидрогеля.....	82
Г.А. Турдиева, Н.Н. Фатуллаев, А.Я. Акрамов, Г.К. Холикова, У.М. Мардонов, Б.Ш. Ганиев Изучение растворимости плохо растворимых солей под действием нитрата мочевины.....	83
Г.Ф.Шеркўзиёва, Ф.И.Саломова Сув объектлари муаммоларини ечишда ретроспектив тахлилларнинг ахамияти.....	84
Д.К. Мурадова, К.М. Муродов, Н.К. Мухаммадиев Каталитический синтез пентадецилонитрила из пентадецилового спирта и аммиака.....	85
К.Х. Рашидова, Х.И. Акбаров, О.Ж. Акбарова Эффективность двухкомпонентных ингибиторов коррозии на основе полиэлектролитов....	86
Н.С. Муминова, Э. Абдурахманов, Н.К. Абдуллаев Разработка полупроводниковых сенсоров и мониторинг фтористого водорода в газовой среде.....	87
Х.Г. Сидикова, Д.Ж. Тошпулатова Исследование некоторых характеристик термokatалитического сенсора метана (природного газа).....	88
F.I. Salomova, M.X. Mirrahimova, Sh.R. Kobiljonova, A.O. Imamova The role of the barrier function of the gastrointestinal tract and intestinal microbiota in the development of food allergies in children.....	89
Ф.И. Саломова, Г.Ф. Шеркўзиёва, Х.А. Садуллаева, Н.О. Ахмадалиева Ўзбекистонда атмосфера хавосининг ифлосланиши.....	90
Ҳ.Ф. Сидикова, С.Ф. Пардабоева Атмосферадаги СО таркибини кузатиш усуллари ва қурилмалари.....	91

The role of the barrier function of the gastrointestinal tract and intestinal microbiota in the development of food allergies in children

F.I. Salomova, M.X. Mirrahimova, Sh.R. Kobiljonova, A.O. Imamova

Tashkent Medical Academy, Tashkent, Uzbekistan

shakmoza0044@gmail.com

Food allergy is an important medical and social problem. According to world statistics, the prevalence of food allergies ranges from 10% to 40% in the general population and there is a tendency to further increase the number of patients with this pathology. Food allergy is a provoking factor in the development of atopic dermatitis, gastrointestinal symptoms, urticaria, angioedema and anaphylaxis in children. Among the risk factors for the development of food allergies, in addition to hereditary predisposition to atopy, there is a high permeability of the barrier of the gastrointestinal tract for macromolecules that trigger a cascade of allergic reactions in the shock organ. One of the biomarkers of increased permeability of the mucous membrane of the gastrointestinal tract is considered to be L-lactalbumin of female milk in the urine of newborn children. Analysis of the literature data showed a significant increase in the level of absorption of alpha-lactalbumin in the urine of patients with purulent-inflammatory diseases. Single works are devoted to the study of this indicator in newborn children with an unfavorable course of the perinatal and postnatal periods. However, studies of this kind have not been conducted in children with a high risk of developing atopy.

The aim of the study is to study the effect of the barrier function of the gastrointestinal tract and the intestinal microbiota on the formation of food allergies in children to improve methods of preventive nutrition.

For the first time in newborns with a high risk of developing atopy, the levels of urinary excretion of breast milk L-lactalbumin were studied. It has been established that children with hereditary allergic diseases in the early postnatal period have high levels of urinary excretion of breast milk L-lactalbumin, which indicates increased permeability of the intestinal wall to non-cleaved proteins of the enteral environment and contributes to the formation of food allergies.

For the first time, a biochemical study of the intestinal microbiota in pregnant women with allergic diseases was conducted. There was a decrease in the metabolic activity of lactic acid flora and an imbalance of aerobic / anaerobic populations of microorganisms. The positive effect of the probiotic *Lactobacillus reuteri* on the clinical symptoms and microbiocenosis of pregnant women with allergic diseases and functional disorders of the gastrointestinal tract has been established. It was found that the incidence of atopic dermatitis in children from mothers receiving *Lactobacillus reuteri* was significantly lower compared to the control group.

It has been proved that high levels of breast milk L-lactalbumin in the urine of newborns characterize increased permeability of the mucous membrane of the gastrointestinal tract and can serve to assess the prognosis of the development of food allergies.