Анна Аршаковна Поладян

45-26
apoladyan@ysu.am

Биологический факультет
Կենսաքիմիայի, մանրէաբանության և կենսատեխնոլոգիայի ամբիոն
Заведующий кафедрой, доцент

Знание языков

Հայերեն Русский English

Научные интересы

- Биоэнергетика, Биохимия, Микробиология, Биотехнология

Государственные награды и почетные звания

2016 Премия Моррисона Рогозы Американского общества микробиологии (ASM)

2019 Серебряная медаль по случаю 100-летия ЕГУ

Публикации

Статья
Gold nanoparticles activate hydrogenase synthesis and improve heterotrophic growth of Ralstonia eutropha H16
Tatevik Manutsyan, Syuzanna Blbulyan, Anait Vassilian, Tatiana Semashko, Gayane Kirakosyan, Lilit Gabrielyan, Karen Trchounian, Anna Poladyan
FEMS Microbiology Letters 2024 1-8

Статья
Growth and hydrogen production by Escherichia coli during utilization of sole and mixture of sugar beet, alcohol, and beer production waste
Kairat Bekbayev, Satenik Mirzoyan, Akerke Toleugazykyzy, Dinara Tlevlessova, Anait Vassilian, Anna Poladyan, Karen Trchounian
Biomass Conversion and Biorefinery 2024 909-919

Статья
Role of the Escherichia coli FocA and FocB formate channels in controlling proton/potassium fluxes and hydrogen production during osmotic stress in energy-limited, stationary phase fermenting cells
Anush Babayan, Anait Vassilian, Anna Poladyan, Karen Trchounan
Biochimie 2024 91-98

Статья
Proton conductance and regulation of proton/potassium fluxes in Escherichia coli FhlA-lacking cells during fermentation of mixed carbon sources

Heghine Gevorgyan, Anna Poladyan, Karen Trchounian, Anait Vassilian

Archives of Biochemistry and Biophysics 2024 109999

Статья

Development of an H2 fuel cell electrochemical system powered by Escherichia coli cells
Torgom Seferyan, Lusine Baghdasaryan, Meri Iskandaryan, Karen Trchounian, Anna Poladyan

Electrochemistry Communications 2024 107746

Статья

L-amino acids affect the hydrogenase activity and growth of Ralstonia eutropha H16
Meri Iskandaryan, Syuzanna Blbulyan, Mayramik Sahakyan, Anait Vassilian, Karen Trchounian,

Anna Poladyan

AMB Express 2023 33

Статья

Valorization of whey-based side streams for microbial biomass, molecular hydrogen, and hydrogenase production
Anna Poladyan, Karen Trchounian, Ela Minasyan, Meri Iskandaryan, Hayarpi Aghekyan, Sargis Aghayan,

Avetis Tsaturyan, Ani Paloyan, Garabed Antranikian, Lev Khoyetsyan

Applied Microbiology and Biotechnology 2023 4683–4696

Статья

The influence of hydrogen production on the formation of metabolic pathways and regulation of ΔpH in Escherichia coli
Heghine Gevorgyan, Anait Vassilian, Anna Poladyan, Karen Trchounian

International Journal of Hydrogen Energy 2022 40264-40274

Статья

THE EFFECT OF ANTIOXIDANT ACTIVITY OF PLANTS TRIFOLIUM PRATENSE L. AND CRATAEGUS LAEVIGATA ON LIPID PEROXIDATION IN RAT'S TISSUES EXPOSED TO HYPOBARIC HYPOXIA
I. A. BADALYAN, A. A. POLADYAN

Proceedings of the YSU B: Chemical and Biological Sciences 2022 239–244

Статья

BIOMASS AND BIOHYDROGEN PRODUCTION BY ESCHERICHIA COLI UPON CONSUMPTION OF MEAT INDUSTRY AND LIGNOCELLULOSIC CORN WASTES MIXTURE
Syuzanna Blbulyan, Satenik Mirzoyan, Karen Trchounian, Anna Poladyan

Proceedings of the YSU B: Chemical and Biological Sciences 2021 224-231

Статья

Biomass and biohydrogen production during dark fermentation of Escherichia coli using office paper waste and cardboard
Anna Poladyan, Lena Margaryan, Karen Trchounian, Armen Trchounian

International Journal of Hydrogen Energy 2020 286-293

Статья

Application of organic waste glycerol to produce crude extracts of bacterial cells and microbial hydrogenase—the anode enzymes of bio-electrochemical systems
Anna Poladyan, Syuzanna Blbulyan, Tatiana Semashko, Volha Dziameshka, Liudmila Zhukouskaya,

Armen Trchounian

FEMS Microbiology Letters 2020 1-7

Статья

ETHANOL SUPPLEMENTATION AS A NEW APPROACH TO REGULATE GROWTH AND HYDROGEN PRODUCTION OF ESCHERICHIA COLI UPON GLYCEROL FERMENTATION

A. A. Poladyan

Proceedings of the YSU B: Chemical and Biological Sciences 2020 138-146

Статья

Growth of the facultative chemolithoautotroph Ralstonia eutropha on organic waste materials: Growth characteristics, redox regulation and hydrogenase activity

Anna Poladyan, Syuzanna Blbulyan, Mayramik Sahakyan, Oliver Lenz, Armen Trchounian

Microbial Cell Factories 2019 1-13

Статья

Characterization of hydrogen production by Escherichia coli wild-type and mutants of hydrogenases utilizing xylose as fermentation substrate

Anna Poladyan, Armen Trchounian

Bioenergy Research 2019 1033-1041

Статья

Hydrogen production by Escherichia coli using brewery waste: optimal pretreatment of waste and role of different hydrogenases

Anna Poladyan, Karen Trchounian, Anait Vassilian, Armen Trchounian

Renewable Energy 2018 931-936

http://www.journals.elsevier.com/renewable-energy

Статья

Escherichia coli wild type and hydrogenase mutant cells growth and hydrogen production upon xylose and glycerol co-fermentation in media with different buffer capacities

Anna Poladyan, Lusine Baghdasaryan, Armen Trchounian

International Journal of Hydrogen Energy 2018 15870-15879

Статья

Enhancement of Escherichia coli bacterial biomass and hydrogen production by some heavy metal ions and their mixtures during glycerol vs glucose fermentation at a relatively wide range of pH

Karen Trchounian, Anna Poladyan, Armen Trchounian

International Journal of Hydrogen Energy 2017 6590-6597

http://www.journals.elsevier.com/international-journal-of-hydrogen-energy/

Статья

Hydrogen production by Escherichia coli growing in different nutrient media with glycerol: Effects of formate, pH, production kinetics and hydrogenases involved

Karen Trchounian, Satenik Mirzoyan, Anna Poladyan, Armen Trchounian

International Journal of Hydrogen Energy 2017 24026-24034

http://www.journals.elsevier.com/international-journal-of-hydrogen-energy/

Статья

NEW APPROACHES TO ENHANCE HYDROGEN PRODUCTION FROM GLYCEROL BY ESCHERICHIA COLI

A. Poladyan

Հայաստանի կենսաբանական հանդես 2017 153-159

Статья

Optimizing strategy for Escherichia coli growth and hydrogen production during glycerol fermentation in batch culture: Effects of some heavy metal ions and their mixtures

Karen Trchounian, Anna Poladyan, Armen Trchounian

Applied Energy 2016 335-340

http://www.elsevier.com/locate/apenergy

Статья

Alkanna orientalis (L.) Boiss. plant isolated cultures and antimicrobial activity of their extracts: phenomenon, dependence on different factors and effects on some membrane-associated properties of bacteria.

Margarit Petrosyan, Yekaterina Shcherbakova, Naira Sahakyan, Zaruhi Vardanyan, Anna Poladyan,

Yuri Popov, Armen Trchounian

PLANT CELL TISSUE AND ORGAN CULTURE 2015 727-738

http://link.springer.com/journal/11240

Статья

Escherichia coli growth and hydrogen production in batch culture upon formate alone and with glycerol co-fermentation at different pHs

Karen Trchounian, Varduhi Abrahamyan, Anna Poladyan, Armen Trchounian

International Journal of Hydrogen Energy 2015 9935-9941

http://www.journals.elsevier.com/international-journal-of-hydrogen-energy/

Статья

Hydrogen production by Escherichia coli during glucose fermentation: Effects of oxidative and reductive routes used by the strain lacking hydrogen oxidizing hydrogenases 1 (hya) and 2 (hyb)

Varduhi Abrahamyan, Anna Poladyan, Anait Vassilian, Armen Trchounian

International Journal of Hydrogen Energy 2015 7459-7464

http://www.journals.elsevier.com/international-journal-of-hydrogen-energy/

Статья

Redox stress in geobacilli from geothermal springs: Phenomenon and membrane-associated response mechanisms

Astghik Ghazaryan, Syuzanna Blbulyan, Anna Poladyan, Armen Trchounian

Bioelectrochemistry 2015 1-6

http://www.journals.elsevier.com/bioelectrochemistry

Статья

Համակարգչային տեխնոլոգիաների կիրառման առավելությունները և փորձը բուհական կենսաբանության դասավանդման ընթացքում

Լ.Ս. Գաբրիելյան, Ա.Ա. Փոլադյան, Ա.Հ. Թռչունյան

Բնագետ 2014 139-141

Статья

Hydrogen-oxidizing hydrogenases 1 and 2 of Escherichia coli regulate the onset of hydrogen evolution and ATPase activity, respectively, during glucose fermentation at alkaline
Anna Poladyan, Karen Trchounian, Armen Trchounian, R. Gary Sawers

FEMS Microbiology Letters 2013 143-148

http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1574-6968

Статья

Oxidative and Reductive Routes of Glycerol and Glucose Fermentation by Escherichia coli Batch Cultures and Their Regulation by Oxidizing and Reducing Reagents at Different pHs
Anna Poladyan, Anait Vassilian, Armen Trchounian, Arev Avagyan

Current Microbiology 2013 49-55

http://www.springer.com/life+sciences/microbiology/journal/284

Статья

Glycerol fermentation and molecular hydrogen production by Escherichia coli batch cultures affected by some reducing reagents and heavy metal ions
Anna Poladyan, Karen Trchounian, Armen Trchounian, Mikayel Minasyants

NATO Science for Peace and Security Series C: Environmental Security, Black Sea Energy Resource Development and Hydrogen Energy Problems
2013 153-163

http://www.springer.com/us/book/9789400761513

Статья

Multiple and reversible hydrogenases for hydrogen production by Escherichia coli: dependence on fermentation substrate, pH and the F0F1-ATPase
Karen Trchounian, Anna Poladyan, Anait Vassilian, Armen Trchounian

Critical Reviews in Biochemistry and Molecular Biology 2012 236-249

http://www.tandfonline.com/toc/ibmg20/current

Конференция

Effect of Different Substrates on Growth and Redox Potential Kinetics of Escherichia coli Wild Type and Hydrogenases Lacking Mutant
Anna Poladyan, Satenik Mirzoyan, Armen Trchounian

Конференция

Glycerol Fermentation and Hydrogen Metabolism by Escherichia coli: New Approaches to Enhance Hydrogen Production
A. Poladyan, K. Trchounian, A. Trchounian

Конференция

Hydrogen production by Escherichia coli wild type and hydrogenase mutants upon formate and glycerol fermentation under different growth conditions
A. Poladyan, S. Mirzoyan, K. Trchounian, A. Trchounian

Конференция

Developing hydrogen production biotechnology: cheap substrates, effective strains and optimized fermentative conditions
K.Trchounian, A. Poladyan, L. Gabrielyan, A. Trchounian

Конференция

Escherichia coli growth and hydrogen production upon glycerol fermentation at slightly acidic pH: effects of formate and some heavy metal ions
Karen Trchounian, Astghik Vardanyan, Anna Poladyan, Armen Trchounian

---

Конференция

Optimization Strategy for Hydrogen Production by Escherichia coli Using Brewery Waste
A. Poladyan, K. Trchounian, A. Trchounian

Конференция

H2 PRODUCIION BY ESCHERICHIA COLI BATCH CULTURES DURING FERMENTATION OF GLYCEROL, LACTOSE AT DIFFERENT pHs
S. Mirzoyan, A. Poladyan, K. Trchounian, A. Trchounian

Конференция

ESCHERICHIA COLI GROWTH AND HYDROGEN PRODUCTION USING BREWERY WASTE: OPTIMAL PRETREATMENT AND ROLE OF HYDROGENASES
A. Poladyan, K. Trchounian, A. Trchounian

Конференция

Glucose concentrations influence on activities of FoF1 ATPase and hydrogenase 4 in Escherichia coli
A. Poladyan, M. Sahakyan, S. Blbulyan, K. Trchounian, A. Trchounian

---

Конференция

ՄԱՆՐԷՆԵՐԻ ԿԵՆՍԱՏԵԽՆՈԼՈԳԻԱՆԵՐԻ ՄԱԳԻՍՏՐՈՍԱԿԱՆ ՆՈՐ ԾՐԱԳՐԵՐԻ ԴԱՍԱՎԱՆԴՄԱՆ ՄԵԹՈԴԱԲԱՆԱԿԱՆ ՄՈՏԵՑՈՒՄՆԵՐԸ ԵՐԵՎԱՆԻ ՊԵՏԱԿԱՆ ՀԱՄԱԼՍԱՐԱՆՈՒՄ
Թռչունյան Կ.Ա., Գաբրիելյան Լ.Ս., Փոլադյան Ա.Ա., Թռչունյան Ա.Հ.

Конференция

Growth and Bioenergetics Properties of Facultative Chemolithoautotrophic Bacterium Ralstonia Eutropha Upon Organic Waste Materials Utilization
S. Blbulyan, M. Sahakyan, A. Poladyan, A. Trchounian

Конференция

Batch Fermentation Characteristics and Hydrogen Production of Escherichia coli Wild Type and Hydrogenase Mutants Using Xylose As Feedstock
A. Poladyan, R. Hayrapetyan, A. Trchounian

Конференция

HYDROGEN PRODUCTION BY BACTERIA: STIMULATION EFFECTS AND RESPONSIBLE HYDROGENASES DURING XYLOSE VS. GLUCOSE DARK FERMENTATION
Anna Poladyan, Lusine Baghdasaryan, Karen Trchounian, Armen Trchounian

---

Конференция

The relationship of Escherichia coli Hyd enzymes with the F0F1-ATPase during fermentation of mixture of carbon sources
H. Gevorgyan, A. Poladyan, A. Trchounian, K. Trchounian

Конференция

From organic waste to biohydrogen: Approaches to enhance H2 production by Escherichia

coli
Anna Poladyan, Karen Trchounian, Armen Trchounian

Конференция

Анализ использования гидрогеназ Escherichia coli в качестве анодных ферментов
Анна Поладян, Армен Трчунян, Татьяна Семашко, Людмила Жуковская, Ольга Демешко

Конференция

From organic wastes to biohydrogen: responsible hydrogenases upon different carbon mixtures utilization by Escherichia coli.
Anna Poladyan, Karen Trchounina, Armen Trchounian

Конференция

Hydrogenase Activity of the Facultative Chemolithoautotroph Ralstonia eutropha Consuming Brewery Waste
A. Poladyan, O. Lenz, A. Trchounian

Конференция

Ralstonia eutropha Hydrogenase Application in Bioelectrocatalysis as Anode Enzyme
A. Poladyan, T. Semashko, L. Zhukouskaya, V. Dziameshka, A. Trchounian

---

Конференция

Analysis of the Escherichia coli hydrogenases as anodic enzymes in bioelectrochemical system
Anna Poladyan, Tatyana Semashko, Lyudmila Zhukouskaya, Volha Diameshka, Armen Trchounian

---

Конференция

Upcycling of office waste paper and cardbord to biohydrogen
Anna Poladyan, Lena Margaryan, Karen Trchounian, Tatyana Semashko, Armen Trchounian

---

Конференция

Redox regulation of the growth, hydrogenase activity and bioenergetic properties of Ralstonia eutropha upon different carbon source utilization
S. Blbulyan, M. Sahakyan, A. Poladyan, A. Trchounian

Конференция

Lignocellulosic waste as feedstock for bacterial biomass production:enhanced hydrogen evolution and hydrogenase activity
Anna Poladyan, Syuzanna Blbulyan, Mayramik Sahakyan, Armen Trchounian

---

Конференция

H2 - Oxidizing Activity of Escherichia coli Upon Utilization of Different Waste Components
A. Poladyan, L. Baghdasaryan, S. Blbulyan, A. Trchounian

Конференция

Ethanol Affected Bacterial Growth and molecular Hydrogen Production by Escherichia coli Upon Fermentation of Glycerol
S.Blbulyan, A. Poladyan, A. Trchounian

Конференция

Prospective Trends in Biotechnology for Biohydrogen
Karen Trchounian, Anna Poladyan, Lilit Gabrielyan, Armen Trchounian

---

Конференция

The role of formate neutralization and molecular hydrogen generation in the metabolic flux in Escherichia coli during fermentation of mixed carbon sources
Gevorgyan H., Poladyan A., Trchounian K.

Конференция

Biohydrogen Production from Roasted Coffee Waste: Understanding the Role of E. coli Hydrogenases During Fermentation
S. Mirzoyan, L. Vanyan, H. Aghekyan, A. Poladyan, K. Trchounian

---

Конференция

Optimization of Fruits Waste Pretreatment for E. coli Growth and H2 Production
S. Mirzoyan, A. Vassilian, A. Poladyan, K. Trchounian

Конференция

Biomass and biohydrogen production by Escherichia coli upon consumption of meat and lignocellulosic waste mixture
Syuzanna Blbulyan, Anna Poladyan, Satenik Mirzoyan, Liana Mnatsakanyan, Karen Trchounian

---

Конференция

WINE GRAPE WASTE APPLICATION FOR ESCHERICHIA COLI BIOMASS AND H2 PRODUCTION
Syuzanna Blbulyan, Lusine Baghdasaryan, Satenik Mirzoyan, Anahit Vassilian, Tatiana Semashko,

Anna Poladyan

Конференция

The valorization of whey-based side-streams for microbial biomass, hydrogen and hydrogenase enzyme production
Anna Poladyan, Hayarpi Aghekyan, Ella Minasyan, Karen Trchounian, Ani Paloyan, Sargis Aghayan,

Garabed Antranikian, Meri Iskandaryan, Diana Ghevondyan

Конференция

ՕՐԳԱՆԱԿԱՆ ԹԱՓՈՆՆԵՐԻՑ ԿԵՆՍԱԶԱՆԳՎԱԾԻ ԵՎ ԿԵՆՍԱԷՆԵՐԳԻԱՅԻ ՓՈԽԱԿԵՐՊՄԱՆ ԿԵՆՍԱՔԻՄԻԱԿԱՆ ՈՒՂԻՆԵՐԻ ԲՆՈՒԹԱԳՐՈՒՄԸ ԵՎ ՕՔՍԻԴԱՎԵՐԱԿԱՆԳՈՂԱԿԱՆ ԿԱՐԳԱՎՈՐՈՒՄԸ
Փոլադյան Ա.Ա., Գևորգյան Հ.Խ., Վանյան Լ.Մ., Բաբայան Ա.Ռ., Բաղդասարյան Լ.Հ., Վասիլյան Ա.Վ.,

Պետրոսյան Հ.Հ.

Конференция

THE OXIDATIVE STRESS AND POSSIBLE PREVENTIVE ACTION OF PLANT BORN POLYPHENOLS
Anahit Shirvanyan, Anush Babayan, Alvard Minasyan, Margarit Petrosyan, Anna Poladyan,

Naira Sahakyan

Конференция

THE OXIDATIVE STRESS AND T2DM-INDUCED DIABETIC NEPHROPATHY: POSSIBLE PREVENTIVE ACTION OF PANT-BORN OLIGOMERIC POLYPHENOLS
Gohar Sahakyan, Anne Vejux, Margarit Petrosyan, Anna Poladyan, Naira Sahakyan

---

Конференция

Characteristic effects of gold nanoparticles on growth and H2 metabolism of Ralstonia eutropha H16 and Escherichia coli
Anna Poladyan, Tatev Manutsyan, Meri Iskandaryan, Syuzanna Blbulyan, Anait Vassilian,

Tatiana Semashko

Конференция

The role of glycine-betaine in the hydrogen metabolism of Ralstonia eutropha H16
Meri Iskandaryan, Liana Mnatsakanyan, Anna Poladyan

Конференция

Fe ions effect on hydrogenase actvity of Ralstonia eutropha H16 in various growth media
Sona Nikolyan, Armine Margaryan, Anna Poladyan

Конференция

A NOVEL COST-EFFECTIVE APPROACH FOR PRODUCTION OF HYDROGENASE ENZYMES AND MOLECULAR HYDROGEN FROM WHEY-BASED BY-PRODUCTS
Anna Poladyan, Meri Iskandaryan, Ofelya Karapetyan, Ela Minasyan, Anait Vassilian, Karen Trchounian,

Garabed Anatranikian

Конференция

REDOX REGULATION OF HYDROGEN PRODUCTION IN ESCHERICHIA COLI DURING GROWTH ON BYPRODUCTS OF THE WINE INDUSTRY
Lusine Baghdasaryan, Karen Trchounian, Garabed Antranikian, Anna Poladyan, Ofelya Karapetyan

---

Конференция

BIOTECHNOLOGICAL POTENTIAL OF SPENT COFFEE GROUNDS FOR LARGE-SCALE HYDROGEN PRODUCTION
Liana Vanyan, Anait Vassilian, Anna Poladyan, Karen Trchounian

---

Конференция

Influence of acidic pH on the interaction between proton ATPase and enzymes responsible for molecular hydrogen generation
Karen Trchounian, Heghine Gevorgyan, Lilit Baghdasaryan, Anait Vassilian, Anna Poladyan

---

Конференция

Formate-hydrogen lyase has a significant role in proton motive force generation in Escherichia coli at acidic pH during mixed carbon fermentation
Heghine Gevorgyan, Anait Vassilian, Anna Poladyan, Karen Trchounian

---

Конференция

The impact of oxygen-tolerant hydrogenases on cell energetics of Cupriavidus necator H16
Meri Iskandaryan, Anna Poladyan

Конференция

Understanding the Role of Escherichia coli Hydrogenase-2 subunits in proton flux under different glucose concentrations
Liana Vanyan, Anait Vassilian, Anna Poladyan, Karen Trchounian

---