CURRICULUM VITAE

AZZAYA TUMENDELGER
Laboratory of Inorganic Chemistry
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Personnal details

Date of birth	28 October 1978
Place of birth	Khentii province, Mongolia
Nationality	Mongolia
Citizenship	Mongolia
Marital status	married

Education

2014 Ph.D., Environmental Chemistry and Engineering,
Thesis: "A study of nitrous oxide production and consumption mechanisms in wastewater treatment system using stable isotopic analysis", Tokyo Institute of Technology, Japan

2005 M.S., Chemical Technology
Thesis: "Investigation of sorption activities for Platinum and Palladium by silicon-organic sorbents" Mongolian University of Science and Technology, Mongolia

2000 B.S., Chemistry and Chemical Technology
Thesis: "The use of vindidate for determination of the molybdenum" Ulaanbaatar University, Mongolia

Employment history

From Jan 2003 ~
Scientific researcher
Institute of Chemistry and Chemical Technology, MAS, Ulaanbaatar, Mongolia

From Feb 2016 to Jun 2016
Visiting Scientist
Environmental Physics group, University of Koblenz-Landau, Germany

From Aug 2015 to Jan 2016
Postdoctoral researcher
Environmental Physics group, University of Koblenz-Landau, Germany

From Oct 2010 to Mar 2014

Research Assistant

Department of Environmental Chemistry and Engineering, Tokyo Institute of Technology, Japan

From Oct 2006 to Oct 2007

UNESCO researcher

Department of International Development Engineering, Tokyo Institute of Technology, Japan

Areas of interests and research

Estimation of Greenhouse (Nitrous oxide) gas inventory:

The production and consumption mechanisms of Nitrous oxide (N_2O) during biological wastewater treatment using stable isotope analysis

Water quality, wastewater treatment, water chemistry:

Assessment of the As contamination in aquatic bodies in northern Mongolia, sorption of heavy and toxic elements (Cr, Hg, Pb, As, etc.) from leather tannery and gold mining industrial wastewater by using different kind of adsorbents including prepared activated carbon from natural waste and a new sorbents synthesized by silicon organic polymer PSTM-3T

Technology of Precious and Rare Metals:

To develop an efficient new technology for faster dissolving and recovering of precious metals (Au, Ag and platinum group metals) and separation and concentration of precious metals from technological and analytical solutions by new polymers.

International research experience and training

Jun 2012- Jun 2013

Global COE program "From the Earth to Earth, Tokyo, Japan

14-18 Dec 2012

The 1st International Education Forum on Environment and Energy Science, Student workshop, Waikoloa, Hawaii, USA

01 Oct 2006- 01 Oct 2007

UNESCO project "Advanced Treatment of Wastewater from Industry for Recycling and Recovery of Water Resources" implemented by Tokyo Tech UNESCO with MEXT, Japan

Language skills

Mongolian:	Mother tongue
English:	103 score (IBT TOEFL from 2009)
Russian:	Reading: excellent; Listening: good; Speaking: good; Writing: good
Japanese:	Elementary

Awarded research grants and funds:

Research grant	Innovation grant by Minister of MECSS, Ref. no.: 15ББ12ДИ201, 2015-2016, Mongolia
DFG	DFG visiting scientist, Ref. no.: LO 1150/11-1, Dec 2015-Jun 2016, Germany
DAAD	DAAD postdoctoral fellowship, Research Stays for University Academics and

Scientists, Ref. no.: 91601045, Aug 2015-Nov 2015, Germany

Full scholarship Honors Scholarship for international students sponsored by JASSO, 2011-2013, Japan

Full scholarship EURASIA-PACIFIC UNINET, Technology Scholarship for young scientist, 2008, Austria

Publication in peer-reviewed journals

Azzaya Tumendelger, Zeyad Alshboul, Stefan Köhler, Gerald Jurasinski, Andreas Lorke (2018) Emission of greenhouse gases (N_2O, CH_4 and CO_2) from municipal wastewater treatment plants in Southwest Germany: Revealing N_2O sources using stable isotopic approach. *Chemosphere* (under review)

Azzaya Tumendelger, Burmaa Gunchin, Alen Silam, Narangarav Tumen-Ulzii, Nyamdelger Shirchinnamjil. "Arsenic occurrence in water bodies in Kharaa River Basin" Mongolian Journal of Chemistry, 44, 2017, 11-19.

Azzaya Tumendelger, Sakae Toyoda, Naohiro Yoshida, Hiroshi Shiomi, Rina Kouno. (2016) Isotopocule characterization of N_2O dynamics during simulated wastewater treatment under oxic and anoxic conditions. *Geochemical Journal*, 50 (2), 105-121, doi: 10.2343/geochemj.2.0390.

Azzaya Tumendelger, Tugsbilguun Byambadorj, Christoph Bors, Andreas Lorke (2016) Investigation of dissolved N_2O production processes during wastewater treatment system in Ulaanbaatar. *Mongolian Journal of Chemistry*, 17(43), 23-27, doi: http://dx.doi.org/10.5564/mjc.v17i43.742

Azzaya Tumendelger, Sakae Toyoda, Naohiro Yoshida. (2014) Isotopomer analysis of N_2O produced in a wastewater treatment system operated under standard activated sludge method. *Rapid Communication in Mass Spectrometry*, 28 (17), 1883-1892, doi: 10.1002/rcm.6973.

Azzaya Tumendelger, Sakae Toyoda, Naohiro Yoshida, Hiroshi Shiomi, RinaKouno. **(**2014) Source identification of N_2O produced during simulated wastewater treatment under different oxygen conditions using stable isotopic analysis. *Mongolian Journal of Chemistry*, 15(41), 4-10, doi: 10.5564/mjc.v15i0.313.

Narangarav T, Nyamdelger Sh, Ariunaa G, **Azzaya T**, Burmaa G. (2014) Dissolution behavior of copper concentrate in acidic media using nitrate ions, *Mongolian Journal of Chemistry*, 15(41), 79-84, doi: 10.5564/mjc.v15i0.328.

Satoshi Ishii, Yangjun Song, Lashitha Rathnayake, **Azzaya Tumendelger**, Hisashi Satoh, Sakae Toyoda, Naohiro Yoshida and Satoshi Okabe. (2014) Identification of key N_2O production pathways in aerobic partial nitrifying granules. *Environmental Microbiology*, 16 (10), 3168-3180, doi: 10.1111/1462-2920.12458.

Lashitha Rathnayake, Yan-jun Song, **Azzaya Tumendelger**, Mamoru Oshiki, Satoshi Ishii, Hisashi Satoh, Sakae Toyoda, Naohiro Yoshida, and Satoshi Okabe. (2013) Source identification of nitrous oxide on autotrophic partial nitrification in a granular sludge reactor. *Water Research*, 47, 7078-7086, doi: 10.1016/j.watres.2013.07.055

International Conference attendance

- Current situation of legislation procedure for CWC in Mongolia (Oral) //Stakeholders Forum on Legislation in Asia. Nov 13-15, 2017, The Hague, Netherlands.

- Interpretation of greenhouse gas-N_2O production pathways during wastewater treatment system in Ulaanbaatar city based on stable isotopic approach (Oral) // The 4th International Conference on Chemical Investigation & Utilization of Natural Resources. July 8-10, 2016, Ulaanbaatar, Mongolia.

- Source identification of N_2O produced during conventional wastewater treatment under different oxygen conditions using isotopomer ratios (Poster) // The 7th International Symposium on Isotopomers July 1-4, 2014, Tokyo, Japan.

- Source identification of nitrous oxide in an autotrophic partial nitrification reactor (Oral) // The 3rd International Conference on Nitrification (ICoN3), Sep 2-5, 2013, Tokyo, Japan.

- Identification of reactions responsible for N_2O production in aerobic partial nitrifying granules (Oral) // 10th IWA Leading Edge Conference on Water and Wastewater Technologies, June 2-6, 2013, Bordeaux, France.

- Isotopomer analysis of N_2O production-consumption mechanisms in biological wastewater treatment under nitrifying and denitrifying conditions (Poster) // The 6th International Symposium on Isotopomers, June 18-22, 2012, Washington DC, USA.

- Elucidation of production and consumption mechanisms of N_2O during standard wastewater treatment using isotopomer ratios (Oral) // The First International Education Forum on Environment and Energy Science, Dec 14-18, 2012, Waikoloa, Hawaii, USA.

- Analysis of production and consumption mechanisms of N_2O during standard wastewater treatment using isotopomer ratios (Poster) // The 59th Annual Meeting of the Geochemical Society of Japan, Sep 11-13, 2012, Fukuoka, Japan.

- Determination of isotopomer fractionation factors characteristic to nitrification and denitrification related to N_2O in simulated wastewater treatment process (Poster) // The 4th IWA-ASPIRE conference & exhibition, Oct 2-6, 2011, Tokyo, Japan.

- Nitrous oxide and methane isotopomer analysis in wastewater treatment system in order to reduce their emissions without reduction of water quality (Poster) // The 4th IWA-ASPIRE conference & exhibition, Oct 2-6, 2011, Tokyo, Japan.

- Adsorption of toxic metal ion from aqueous solution using new sorbents (Oral) // Development and Human Resources and Research Network in Science and Technology, The Tokyo Tech UNESCO Fellows Symposium, Dec 10-11, 2009. Tokyo, Japan.

- Sorption removal of chromium (VI) and mercury (II) from aqueous solution on silicon organic sorbent (oral) // The 4th Asian Particle Technology Symposium, Sep 14-16, 2009, New Delhi, India.

- Sorption of Toxic Metal Ions using Silicon-organic Polymers from Aqueous Solutions (poster) // The 10th Asian Conference on Analytical Sciences, Aug 11-13, 2009, Kuala Lumpur, Malaysia.

- Organosilicon polymers for toxic metal ions recovery from the wastewater (poster) // The 4th Asian Particle Technology Symposium, Sep 14-16, 2009, New Delhi, India.