Alexei F. Khalizov

DEPARTMENT OF ATMOSPHERIC SCIENCES, TEXAS A&M UNIVERSITY.
3150 TAMU, COLLEGE STATION, TX 77843-3150

Tel.: (979) 458-1822 (work)
Tel.: (979) 696-3424 (home)
WEB: http://atmo.tamu.edu/profile/AKhalizov
Fax: (979) 862-4466
E-mail: khalizov@tamu.edu,
akhalizov@hotmail.com

EDUCATION

1994–1997 **Ph.D in Physical Chemistry**
Ufa Research Center of the Russian Academy of Sciences
Thesis: 'Reactions of dialkyltrioxides'
Profs. V.V. Shereshovets and S.L. Khursan

1989–1994 **B.Sc. in Chemistry** (honors, GPA = 3.94/4.00)
Bashkir State University (Ufa, Russia)

RESEARCH EXPERIENCE

2005/07–present **Assistant Research Scientist**
Department of Atmospheric Sciences, Texas A&M University, United States
Prof. R. Zhang

- Experimental and theoretical investigation of the formation and growth of atmospheric nano-particles: enhancement of sulfuric acid – water nucleation rate in the presence of organic acids, contribution of organic carbonyls to the growth of nano-particles
- Development of mass spectroscopic techniques for analysis of the nano-particles chemical composition
- Laboratory simulation of carbon soot atmospheric aging: effect of sulfuric and organic acid coatings on morphology and hygroscopic properties of soot aerosol particles
- Cavity ring-down spectroscopy of aerosols
- Measurements of absorption and scattering of light by fresh and aged carbon soot aerosols
- Heterogeneous reaction of NO_2 with soot: effect of soot aging on the uptake coefficient and HONO yield
- Flow tube – mass spectroscopic study of the elemental mercury - halogen radicals kinetics and mechanism

2002/10–2004/10 **Postdoctoral fellow**
2004/10–2005/06 **Research Associate**
Department of Chemistry, University of Waterloo, Waterloo, Canada
Prof. J.J. Sloan

- Nucleation of ice in supercooled water aerosols in a cryogenic flow tube: experimental measurements and aerosol microphysics modeling
- Infrared spectroscopy of dynamic clusters in water aerosols upon supercooling
- Complex refractive indices (optical constants) of ice and supercooled water from infrared spectroscopic measurements of aerosols

- Computational Fluid Dynamics modeling of the aerosol flow in cryogenic laminar flow tubes

1999/10–2000/04 **Postdoctoral researcher**
2000/05–2002/04 **NATO-NSERC Postdoctoral fellow**
2002/05–2002/08 **Research Associate**
Chemistry Department, McGill University, Montreal, Canada
Prof. P.A. Ariya

- Kinetics and mechanism of gas-phase reactions of elemental mercury with molecular halogens, halogen atoms, and halogen oxides relevant to mercury depletion event in the Arctic: experimental measurements and theoretical calculations
- Photo-reduction of inorganic mercury to elemental mercury in the presence of organic compounds
- Assessment of the contribution of halogen species to the conversion of SO_2 in the troposphere: quantum chemical calculations and chemical box modeling

1997/12–1999/09 **Research scientist**
Institute of Organic Chemistry, Ufa Research Center of the Russian Academy of Sciences
Prof. V.V. Shereshovets

- Kinetics and mechanism of oxidation of organic and inorganic compounds by chlorine dioxide in non-aqueous media
- The mechanism of silica gel-mediated reaction between ozone and saturated hydrocarbons (dry ozonation)

1992/08–1994/11 **Research assistant** (part time)
Institute of Organic Chemistry, Ufa Research Center of the Russian Academy of Sciences
Prof. V.V. Shereshovets

- The chemistry of dialkyltrioxides: mechanism of formation, kinetics and mechanism of thermal decomposition, chemiluminescence
- Radical processes initiated by low-temperature thermolysis of dialkyltrioxides: decomposition of ozone, formation of dialkyltetroxides, production of molecular singlet oxygen

TEACHING EXPERIENCE

2004-2005 **Lecturer** (from time to time substituted professor teaching the course)
Department of Chemistry, University of Waterloo, Waterloo, Canada

- An undergraduate-level course on Atmospheric Chemistry and Physics

1998–1999 **Lecturer** (part time)
Ufa Research Center of the Russian Academy of Sciences

- A graduate-level course on application of computers in chemistry

HONORS AND AWARDS

2000-2002	NATO-NSERC Science Fellowship (CAN$33,000 per year) McGill University, Montreal, Canada
1997	International Soros Science Educational Program Scholarship (US$1,500) Ufa Research Center of the Russian Academy of Sciences
1996	International Soros Science Educational Program Scholarship (US$2,000) Ufa Research Center of the Russian Academy of Sciences
1996	Scholarship of the Government of Republic Bashkortostan (1,200 rubles) Ufa Research Center of the Russian Academy of Sciences

SOCIETY MEMBERSHIP AND SERVICE

- Member of the American Geophysical Union (AGU)
- American Association for Aerosol Research (AAAR)
- Proposal reviewer for American Chemical Society Petroleum Research Fund (ACS-PRF)
- Reviewer for Journal of Geophysical Research

RESEARCH GRANTS

- **TARC** 2008 (Texas Air Research Center) - funded. "An integrated experimental and modeling study for improving mercury chemical mechanism in atmospheric mercury models – year 2". Project Investigators: Prof. Jerry Lin (Lamar University) and Dr. Alexei Khalizov (Texas A&M University).
- **TARC** 2007 (Texas Air Research Center) - funded. "An integrated experimental and modeling study for improving mercury chemical mechanism in atmospheric mercury models". Project Investigators: Prof. Jerry Lin (Lamar University) and Dr. Alexei Khalizov (Texas A&M University), co-investigator: Prof. Renyi Zhang (Texas A&M University).
- **DOE** 2007 (Department of Energy) – not funded. "The role of sulfuric acid, ammonia, and biogenic organic acids in atmospheric aerosol nucleation and growth". Project Investigator: Prof. Renyi Zhang (Texas A&M University), co-investigator: Dr. Alexei Khalizov (Texas A&M University).
- **EPA** 2007 (Environmental Protection Agency) – not funded. "Growth and chemical composition of organic aerosols from heterogeneous processing of semi- and intermediate volatility organic compounds". Project Investigator: Prof. Renyi Zhang (Texas A&M University), co-investigator: Dr. Alexei Khalizov (Texas A&M University).
- **RFBR** 1999 (Russian Foundation for Basic Research) – funded. "Oxidation of organic compounds by chlorine dioxide". Project investigators: V. V. Shereshovets (Ufa Research Center) and U. B Imashev (Ufa Petroleum Technical University), co-investigator: A. F. Khalizov (Ufa Research Center)

RESEARCH INTERESTS

- Formation and growth of secondary aerosol particles
  - Gas-phase chemical reactions producing semi-volatile compounds
  - Binary and ternary nucleation of semi-volatile species leading to new particle formation
  - Growth of nano-particles and secondary organic aerosols through heterogeneous uptake of semi-volatile organic compounds
  - Chemical composition of nano-particles
- Aging of atmospheric aerosols
  - Modification of morphology and hygroscopicity of soot aerosols caused by internal mixing with low-volatile atmospheric species
  - Light absorption and scattering by aerosol particles
- Atmospheric chemistry: kinetics, mechanism, and photochemistry
  - Atmospheric reactions of elemental mercury
  - Effect of aging on heterogeneous chemistry of aerosols

SKILLS

Instrument design and construction:

- Cavity ring down spectrometer (light extinction by aerosol particles)
- Tandem differential mobility analyzer (TDMA), long- and nano-DMA versions (hygroscopic and chemical transformations of aerosol particles)
- DMA – APM (Aerosol Particle Mass) analyzer (measurements of absolute mass, density, and morphology of aerosol particles)
- Thermal desorption – ion drift – chemical ionization mass spectrometer (analysis of nano-particle chemical composition)
- Cryogenic laminar flow tube (nucleation and phase transformations of aerosols)

Instrumental techniques:

- Ion drift - chemical ionization mass spectrometry (ID-CIMS)
- Chemical kinetics and mechanism using turbulent flow reactor coupled to ID-CIMS
- Extinction and scattering of light by aerosol particles (cavity ring-down and FTIR spectroscopy, nephelometry)
- Aerosol particle size and mass, aerosol transformations: Differential Mobility Analyzer (DMA), Tandem-DMA, DMA-APM (Aerosol Particle Mass analyzer)
- Spectroscopic methods: FT-Raman, UV/Visible, Cold Vapor Atomic Absorption and Atomic Fluorescence, chemiluminescence, Nuclear Magnetic Resonance, Electron Spin Resonance)
- Chromatographic methods: GC-FID, GC-MS, HPLC with UV detection, and HPLC with post-column derivatization and fluorescence detection

Theoretical methods:

- Aerosol freezing nucleation and aerosol microphysics modeling
- Calculations of light scattering by particles within the framework of Mie, T-Matrix, and Discrete Dipole approaches
- Chemical kinetics modeling
- Ab initio and DFT quantum chemical calculations
- Capture-deactivation, CVTST, and RRKM calculation of reaction rate constants

Computer/data acquisition

- Windows, UNIX
- PC hardware
- Data acquisition: NI FieldPoint, NI DAQ, GPIB, GaGe CompuBoard
- Computer programming: Fortran, Pascal, Basic, Assembly language
- Specialized programming languages: LabVIEW, Matlab, Maple
- Scientific program packages: Gaussian, GAMESS, MOPAC, Acuchem, MOCCA (Model Of Chemistry Considering Aerosols), Unimol

Other skills:

- Trained and supervised co-op, undergraduate, and graduate students
- Experience in metal working: lathe, mill, soldering
- Organizer of a physical/theoretical chemistry workshop at the Ufa Research Center of the Russian Academy of Sciences

LANGUAGES English and Russian (fluent, written and spoken), French (basic)

CITIZENSHIP Canadian, Russian

REFERENCES

Prof. Renyi Zhang
Department of Atmospheric Sciences
Texas A&M University
3150 TAMU
College Station, TX 77843-3150
Phone: (979) 845-7656, Fax: (979) 862-4466
zhang@ariel.met.tamu.edu

Prof. Peter H. McMurry
Department of Mechanical Engineering
University of Minnesota
1100 Mechanical Engineering
111 Church Street S.E.
Minneapolis, Minnesota 55455
Phone: (612) 624-2817, Fax: (612) 626-1854
mcmurry@me.umn.edu

Prof. Che-Jen (Jerry) Lin
Department of Civil Engineering
Lamar University
Beaumont, TX 77710-0024
Phone: (409) 880-8761, Fax: (409) 880-8121
Jerry.Lin@lamar.edu

Prof. James J. Sloan
NSERC/OPG Chair in Atmospheric Sciences
Department of Chemistry
University of Waterloo
200 University Ave. West
Waterloo, ON, N2L 3G1, Canada
Phone: (519) 888-4401, Fax: (519) 746-7484
sloanj@uwaterloo.ca

Dr. Pascal Larregaray
ISM, UMR5255, Université Bordeaux1/CNRS
351 cours de la libération, 33405 Talence cedex
tel: 05 40 00 29 89, fax: 05 40 00 66 45
p.larregaray@ism.u-bordeaux1.fr

Prof. Sergey L. Khursan
Department of Chemistry
Bashkir State University
32 Frunze St.
Ufa, Russia, 450034
Phone: +7 (3472) 236-727
KhursanSL@ufacom.ru

SUBMITTED

1. R. Zhang, L. Wang, A. F. Khalizov, J. Zhao, J. Zheng, L. Perez, M. Molina, and R. McGraw. 'Nucleation and Growth of Nano-Sized Terrestrial Biogenic Aerosols', (2008), *Science*

2. J. Pagels, A. F. Khalizov, P. McMurry and R. Zhang. 'Processing of Soot by Controlled Sulphuric Acid and Water Condensation – Mass and Mobility Relationship', (2008) *Aerosol Science and Technology*

3. H. Xue, A.F. Khalizov and R. Zhang, 'Effect of dicarboxylic acid coatings on the mass-mobility relationship of soot particles' (2008) *Environmental Science and Technology*

REFEREED PUBLICATIONS

4. A. F. Khalizov, R. Zhang, D. Zhang, H. Xue, J. Pagels and P. McMurry. 'Formation of highly hygroscopic soot aerosols upon internal mixing with sulfuric acid vapor', (2008) *Journal of Geophysical Research – Atmospheres*, accepted

5. A.F. Khalizov, H. Xue, L. Wang, J. Zheng, and R. Zhang. 'Enhanced light absorption and scattering by carbon soot aerosols internally mixed with sulfuric acid', (2008) *Journal of Physical Chemistry A*, accepted

6. J. Zhao, A. F. Khalizov, R. Zhang and R. McGraw. 'Hydrogen Bonding Interaction in Molecular Complexes and Clusters of Aerosol Nucleation Precursors', (2008) *Journal of Physical Chemistry A*, accepted

7. R. Zhang, A.F. Khalizov, J. Pagels, D. Zhang, H. Xue, and P.H. McMurry. 'Variability in morphology, hygroscopicity, and optical properties of soot aerosols during atmospheric processing', (2008) *Proceedings of the National Academy of Science USA*, **105**(30), 10291-10296

8. A.Y. Zasetsky, M.E. Earle, B. Cosic, R., Schiwon, I.A. Grishin, R. McPhail, R.G. Pancescu, J. Najera, A.F. Khalizov, K.B. Cook, and J.J. Sloan. 'Retrieval of Aerosol Physical and Chemical Properties from Mid-Infrared Extinction Spectra', (2007) *Journal of Quantitative Spectroscopy and Radiative Transfer*, **107**(2), 294-305

9. A. M. Diaz, M. G. Zolotukhin, S. Fomine, R. Salcedo, O. Manero, G. Cedillo, V. M. Velasco, M. T. Guzman, D. Fritsch and A. F. Khalizov, "A novel, one-pot synthesis of novel 3F, 5F, and 8F aromatic polymers", (2007), *Macromolecular Rapid Communications*, **28**(2), 183-187.

10. A. F. Khalizov, M. E. Earle, W. J.W. Johnson, G. D. Stubley and J. J. Sloan, 'Development and characterization of a laminar aerosol flow tube', (2006), *Review of Scientific Instruments*, **77**, 033102

11. A. F. Khalizov, M. E. Earle, W. J.W. Johnson, G. D. Stubley and J. J. Sloan, 'Modeling of flow dynamics in laminar aerosol flow tubes', (2006) *Journal of Aerosol Science*, **37**(10), 1174

12. M. G. Zolotukhin, S. Fomine, L. M. Lazo, R. Salcedo, L. E. Sansores, G. G. Cedillo, H. M. Colquhoun, J. M. Fernandez-G., A. F. Khalizov, 'Superacid-Catalyzed Polycondensation of Acenaphthenequinone with Aromatic Hydrocarbons', (2005) *Macromolecules*, **38**(14), 6005

13. A. Y. Zasetsky, A. F. Khalizov, M. E. Earle, J. J. Sloan. 'Frequency Dependent Complex Refractive Indices of Supercooled Liquid Water and Ice Determined from Aerosol Extinction Spectra', (2005) *Journal of Physical Chemistry A*, **109**(14), 2760

14. A. Y. Zasetsky, A. F. Khalizov, J. J. Sloan (2004). 'Characterization of Atmospheric Aerosols from Infrared Measurements: Simulations, Testing, and Applications', *Applied Optics*, **43**(29), 5503

15. A. Y. Zasetsky, A. F. Khalizov, J. J. Sloan (2004). 'Local order and dynamics in supercooled water: A study by IR spectroscopy and molecular dynamic simulations', *Journal of Chemical Physics*, **121**(14), 6941

16. A. F. Khalizov, B. Viswanathan, P. Larregaray and P. A. Ariya (2003). 'A Theoretical Study on the Reactions of Hg with Halogens: Atmospheric Implications.' *Journal of Physical Chemistry A*, **107**(33), 6360

17. P. A. Ariya, A. F. Khalizov, and A. Gidas, 'Reaction of Gaseous Mercury with Atomic and Molecular Halogens: Kinetics, Product Studies, and Atmospheric Implications', (2002) *Journal of Physical Chemistry A*, **106**(32), 7310

18. A. F. Khalizov and P. A. Ariya, 'Stability of XSO_2 (X=F,Cl, and Br) radical: impact of the basis set on X–S bonding energy in ab initio and DFT calculations' (2001) *Chemical Physics Letters*, **350** (1-2), 173

19. S. L. Khursan, A. F. Khalizov, E. V. Avzyanova, M. Z. Yakupov, V. V. Shereshovets. 'The yield of singlet oxygen in thermal decomposition of hydrotrioxides', (2001) *Russian Journal of Physical Chemistry*, **75**, 1107.

20. A. F. Khalizov, S. L. Khursan,V. V. Shereshovets. 'Free-radical chain decomposition of ozone initiated by di(tert-butyl) trioxide', (2001) *Russian Chemical Bulletin*, **50**, 63.

21. I. M. Ganiev, Q. K. Timerghazin, A. F. Khalizov, V. V. Shereshovets, A. I. Grigor'ev,G. A. Tolstikov. 'Complex of chlorine dioxide with TEMPO and its conversion into oxoammonium salt', (2001) *Journal of Physical Organic Chemistry*, **14**, 38.

22. Y. S. Chertova, E. V. Avzyanova, K. K. Timergazin, A. F. Khalizov, V. V. Shereshovets, U. B. Imashev. 'The formation of singlet molecular oxygen in the interaction of chlorine dioxide with ozone', (2001) *Russian Journal of Physical Chemistry*, **74**, S473.

23. G. M. Abushakhmina, A. F. Khalizov, S. S. Zlotskii, V. V. Shereshovets, U. B. Imashev, 'Kinetics and products of oxidation of 2-isopropyl-1.3-dioxolane by chlorine dioxide', (2000) *Reaction Kinetics & Catalysis Letters*, **70** (1), 177

24. E. V. Avzyanova, Q. K. Timerghazin, A. F. Khalizov, S. L. Khursan, L. V. Spirikhin, V.V. Shereshovets, 'Formation of Hydrotrioxides During Ozonation of Hydrocarbons on Silica Gel. Decomposition of Hydrotrioxides', (2000) *Journal of Physical Organic Chemistry*, **13** (2), 87

25. M. Ganiev, Q. K. Timerghazin, A. F. Khalizov, N. M. Andriyashina, L. B. Volodarsky, V. V. Shereshovets, G. A. Tolstikov. 'Complexes of Chlorine Dioxide with Nitroxyl Radicals'. (1999) *Tetrahedron Letters*, **40** (25), 4737

26. V.I. Sokolov, V.V. Bashilov, Q.K. Timerghazin, E.V. Avzyanova, A. F. Khalizov, N.M. Shishlov, V.V. Shereshovets. 'EPR Study of the Reaction of C_{60} with Chlorine Dioxide: Experimental Evidence for the Formation of C_{60} Radical-Cation'. (1999) *Mendeleev Communications*, (2), 54

27. A. F. Khalizov, S. L. Khursan, V. V. Shereshovets. 'Dialkyltrioxides' (a review). (1999) *Kinetics and Catalysis (Russian)*, (2), 194

28. A. F. Khalizov, S. L. Khursan, V. V. Shereshovets. 'Kinetics of radical decomposition of di(tert.butyl)trioxide'. (1999) *Russian Chemical Bulletin*, (1), 61

29. N. N. Kabalnova, A. F. Khalizov, V. V. Shereshovets, L. A. Baltina, Yu. I. Murinov, G. A. Tolstikov. 'Interaction of singlet oxygen with biomolecules. 2. $^1O_2$ quenching by glicirrhizic acid derivatives'. (1998) *Reaction Kinetics & Catalysis Letters*, **63** (2), 279

30. E. V. Avzyanova, Q. K. Timerghazin, A. F. Khalizov, S. L. Khursan, L. V. Spirikhin, V.V. Shereshovets, 'Adamantylhydrotrioxide Formation During Dry Ozonation of Adamantane'. (1997) *Mendeleev Communications*, (6), 227

31. S. L. Khursan, A. F. Khalizov, V. V. Shereshovets. 'Induced decomposition of di(tert.butyl)trioxide'. (1997) *Russian Chemical Bulletin*, **46**, 884

32. Q. K. Timerghazin, E. V. Avzyanova, A. F. Khalizov, N. N. Kabalnova, V. V. Shereshovets. 'Chemiluminescence during Ozonation of Adamantane on Silica Gel'. (1996) *Reaction Kinetics & Catalysis Letters*, **58** (2), 403–406

33. A. F. Khalizov, O. N. Makarova, S. L. Khursan, V. V. Shereshovets. ' Effect of the medium on the decomposition rate of di-t-butyl trioxide'. (1995) *Reaction Kinetics & Catalysis Letters*, **54** (2), 427

34. A. F. Khalizov, S. L. Khursan, V. V. Shereshovets. 'Effect of medium on the rate-constant of decomposition of di(tert-butyl)trioxide'. (1995) *Russian Chemical Bulletin*, **44** (6), 1127

35. S. L. Khursan, V. V. Shereshovets, N. M. Shishlov, A. F. Khalizov, V. D. Komissarov. 'ESR studies of radical break-down for di-(tert.butyl)-trioxide'. (1994) *Reaction Kinetics & Catalysis Letters*, **52**, 249

36. S. L. Khursan, V. V. Shereshovets, A. F. Khalizov, A. I. Voloshin, V. D. Komissarov, V. P. Kazakov. 'Chemiluminescent studies of the kinetics of decomposition of di-(tert.butyl)-trioxide'. (1993) *Reaction Kinetics & Catalysis Letters*, **51** (2), 389–392

37. S. L. Khursan, V. V. Shereshovets, A. F. Khalizov, A. I. Voloshin, V. D. Komissarov, V. P. Kazakov. 'Chemiluminescence in the thermal decomposition of di(tert.butyl)trioxide'. (1993) *Russian Chemical Bulletin*, **42**, 1968

38. A. F. Khalizov, S. L. Khursan, V. V. Shereshovets, V. D. Komissarov. 'Chemiluminescence in the decomposition of di(tert.butyl)trioxide $(CH_3)_3COOOC(CH_3)_3$'. (1993) *Russian Chemical Bulletin*, **42** (9), 1609

CONFERENCE PRESENTATIONS

1. Lin Wang, Alexei Khalizov, Renyi Zhang, “Growth of Newly Formed Sulfuric Acid Nano-particles”, (2008), AAAR 26th Annual Conference, Orlando, FL

2. Alexei Khalizov, Huaxin Xue, Jun Zhao, Renyi Zhang, “Heterogeneous processing of organic carbonyls on submicron aerosol particles”, (2007), AAAR 26th Annual Conference, Reno, NV

3. Alexei Khalizov, Renyi Zhang, Dan Zhang, Huaxin Xue, Joakim Pagels, Peter H. McMurry, “Formation of highly hygroscopic soot aerosols by atmospheric processing with sulfuric acid vapor”, (2007), AAAR 26th Annual Conference, Reno, NV

4. J. J. Sloan, A. Khalizov, M. Earle and A. Y. Zasetsky, "Spectroscopic measurements of processes at the surfaces of atmospheric aerosols", (2006). *Abstracts of Papers of the American Chemical Society*, **231**.

5. A.F. Khalizov, M.E. Earle, B.M. Pinto, A.Y. Zasetsky, J.J. Sloan, ‘Local Order and Nucleation of Ice in Supercooled Water Aerosols and their Role in the Formation of Ice Clouds’, AGU 2004 Fall Meeting, Moscone Center, San Francisco, California

6. A.Y. Zasetsky, A.F. Khalizov and J.J. Sloan, 'Long Range Order in Supercooled Water Aerosols', ACS Symposium on Chemical Physics in Atmospheric Science (2004), Philadelphia, PA

7. A.Y. Zasetsky, A.F. Khalizov and J.J. Sloan, 'Local Heterogeneities and Dynamics in Supercooled Water: A Study by IR Spectroscopy and Molecular Dynamic Simulations', Gordon Conference on Water & Aqueous Solutions (2004), Holderness School, Plymouth, New Hampshire

8. A. F. Khalizov, M. Earle, A. Yu. Zasetsky, and J.J.Sloan, 'Remote Sensing FTIR Studies of Ice particle Formation in Laboratory Aerosol Flow Tubes', 7th Workshop on Infrared Emission Measurements by FTIR, Quebec, QC, Canada, February 4-6, 2004

9. Alex Zasetsky, Bob McPhail, Rocsana Pancescu, Juan Najera, Alexei Khalizov, Mike Earle, and J.J. Sloan, 'Application of Flow Tube Techniques to Determination of Refractive Indices from Aerosol IR Extinction Spectra', Border Air Quality Symposium (2004), University of Waterloo, Waterloo, Canada

10. A.Y. Zasetsky, A.F. Khalizov, M.E. Earle, B.M. Pinto, J.J. Sloan, 'Local Order and Nucleation of Ice in Supercooled Water', Border Air Quality Symposium (2004), University of Waterloo, Waterloo, Canada

11. A.F. Khalizov, M.E. Earle, W. Johnson, G.D. Stubley, J.J. Sloan, 'Development and Optimization of a Cryogenic Apparatus to Study Atmospheric Aerosols', Border Air Quality Symposium (2004), University of Waterloo, Waterloo, Canada

12. A.Y. Zasetsky, A.F. Khalizov and J.J. Sloan, 'Chemistry and Physics of Lower Stratospheric Aerosols Determined by Satellite Remote Sensing', AGU 2003 Fall Meeting, Moscone Center, San Francisco, California

13. A.F. Khalizov, A.Yu. Zasetsky, M.E. Earle and J.J. Sloan, 'A New Way to Approach the Ice Formation Mechanism in Aerosol Flow Tubes', University of Waterloo, Symposium on Chemical Physics, 2003.

14. A.F. Khalizov, P. Larregaray, B. Viswanathan, P.A. Ariya, 'Role of Halogens in the Transformation of Atmospheric Mercury: Experiment and Theory', University of Waterloo, Symposium on Chemical Physics, 2002

15. A.F. Khalizov, 'Freezing of Supercooled Water Droplets in a Cryogenic Flow Tube', University of Waterloo, Chemical Physics Research Seminar, 2004

16. A.F. Khalizov, 'Role of Halogens in the Transformation of Atmospheric Mercury: Experiment and Theory', Chemical Physics Research Seminar, 2003

17. P. A. Ariya, A. Khalizov, B. Viswanathan, A. Gidas, D. Moraitis, 'Reactions of mercury upon halogen and halogen oxides', American Society for Limnology and Oceanography, (2002)

18. Ariya P.A., Khalizov A.F., Gidas A., 'Kinetics and Product Studies of Reactions of Hg^0 + $X/X_2/XO$ (X=Cl and Br) at Atmospheric pressure and T = 296 ± 2 K'. Canadian Chemical Society, Montreal, (2001)

19. Khalizov A.F., Ariya P.A., 'A Theoretical Study on the Role of Halogens and Halogen oxides in Tropospheric SO_2 Oxidation', Canadian Chemical Society, Montreal, (2001)

20. Khalizov, and P. A. Ariya, 'Spectroscopic kinetic and mechanistic studies of the reaction between gaseous mercury and halogens', AGU Fall Meeting, San Francisco, (2000)

21. P. A. Ariya, A. Khalizov, A. Gidas, 'Is the destruction of Hg indeed to halogen reactions?', AGU Fall Meeting, San Francisco, (2000)

22. P. A. Ariya, A. Khalizov, B. Viswanathan, 'Reactions Cl/Br + SO_2 and their impact on the formation of cloud nuclei', Canadian Meteorological and Oceanographic Society, Victoria, (2000)

23. E. V. Avzyanova, Q. K. Timerghazin, A. F. Khalizov, S. L. Khursan, L. V. Spirikhin, V.V. Shereshovets 'Dry ozonation as a route to hydrotrioxides from simple hydrocarbons', 10th Conference on Organic and Organometallic Peroxides, Moscow, Russia, 1998

24. A. F. Khalizov, S. L. Khursan, V. V. Shereshovets 'Kinetics of radical decomposition of di(tert.butyl)trioxide', 10th Conference on Organic and Organometallic Peroxides, Moscow, Russia, 1998, C42

25. A. F. Khalizov, S. L. Khursan, N. M. Shishlov, V. V. Shereshovets, 'Formation of free radicals upon thermal decomposition of di(tert.butyl)trioxide', 5th Conference on Physics and Chemistry of Elementary Chemical Processes (in memory of academician V. V. Voevodskii), Chernogolovka, Russia, 1997

26. A. F. Khalizov, S. L. Khursan, V. V. Shereshovets, 'Synthesis and radical decomposition of di(tert.butyl)trioxide', 2nd Conference on Reactions of Radicals in Liquid Phase, Kazan, Russia, 1995

27. A. F. Khalizov, A. I. Voloshin, S. L. Khursan, V. V. Shereshovets, V. P. Kazakov, 'Chemiluminescence upon thermal decomposition of di(tert.butyl)trioxide', International Conference on Luminescence, Physical Institute of Academy of Science, Moscow, Russia, 1994

28. A. F. Khalizov, S. L. Khursan, V. V. Shereshovets, 'Synthesis and radical decomposition of di(tert.butyl)trioxide', Conference on Chemistry, Chemical Technology and Ecology of Ozone (OZONE-94), Ufa, Russia, 1994