

BIOGRAPHICAL SCETCH

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EDUCATIONAL BACKGROUND:

TSU, Tashkent	Radiation Physics	M.S. 1972
MSU, Moscow	Physics & Math, Nuclear Physics	PhD 1975
JINR, Dubna	Physics & Math, Nuclear Physics	Habilitation 1995

EMPLOYMENT HISTORY:

- **July 2009 – present:** Undergraduate Program Director, Department of Physics, UCF.
- **July 2009 – December 2010:** Associate Chair in the Department of Physics at the University of Central Florida.
- **August 2006 – present:** Lecturer in the Department of Physics at the University of Central Florida.
- **August 2003 – August 2006:** Visiting Professor in the Department of Physics at the University of Central Florida. Research efforts are in the area of Physics Education and Material Sciences. This includes Neutron transmutation Doping in semiconductors; doping of active elements of FIR p-Ge Lasers; (Al)GaN structures; post growth modification of ZnO structures; studies of post-irradiation defects; radiation hardness in semiconductors.
- **December 1998 – August 2003:** Adjunct Professor in the Department of Physics at the University of Central Florida.
- **January 1996 – April 1998:** Chair of Department of Activation Analysis in the Institute of Nuclear Physics, Uzbekistan.
- **September 1995 – April 1998:** Professor in the Department of Physics at Tashkent State University, Uzbekistan.
- **1994 & 1996:** Visiting Professor in the Department of Nuclear Chemistry at Marburg University, Germany.
- **1994 & 1995:** Senior-Researcher in the International Institute of Nuclear Research, Dubna, Russia.

- **1983-1996:** Senior-Researcher in the Institute of Nuclear Physics, Tashkent, Uzbekistan.

AWARDS:

March 2013: UCF-Teaching Incentive Program Award
 March 2013: UCF Faculty Excellence in Teaching Award
 December 1996: The JINR Best Scientific Work of the Year Prize
 November 1994 – December 1996: Alexander von Humboldt Research Fellowship
 February 1995, October 1997 - Jorge Soros Open Society Foundation research awards

STUDENTS AWARD and RECOGNITIONS:

Spring 2010: Maximilian Shatkhin (K12) – Winner of Best in Fair – Orange County Science Fair: *“Cathodoluminescence studies of Electron Irradiation Effects in n-type ZnO”*
 Spring 2009: Juan Carlos Gonzales (UG) – UCF Founder’s day Outstanding Thesis Award in Science and Engineering – Runner-Up: “Honors in the Major Thesis: Control of the Magnetization Direction in PdNi Alloys”
 Spring 2009: Maximilian Shatkhin (K12) – 3th place – Intel, International Science and Technology Fair: *Minority Carrier Transport in p-ZnO Nanowires*”; Winner in the Physics Category - Siemens-Westinghouse Science Competition: *“Studies of Electron Trapping in ZnO Semiconductor”*
 Spring 2011: Casey Schwarz (PhD student) - Won the National Competition to Participate in the 62nd Nobel Laureate Meeting, Lindau, Germany.
 May 2013 Alvar Rodriguez (PhD, GTA) – Won the UCF Excellence by Graduate Teaching Assistant Award

PROFESSIONAL and UNIVERSITY SERVICE:

Conference and Workshop Committees:	Co-Chair and Host of the 2013 – Southeast Conference for Undergraduate Women in Physics
Referees for Journals and Institutions:	Panelist for NSF GRFP Division; Reviewer for U.S Civilian Research and Development Foundation (CRDF); Reviewer for Georgia Science Foundation; Reviewer for Journal of Nuclear Instruments &

Methods B; Journal of Radiation Physics; Journal of Radioanalytical & Nuclear Chemistry; Springer-Verlag, Kluwer Academic Publishers; Physics Textbooks.

Professional Committees:

Fellow Member of International Nuclear Track Society (**INTS**);
 Member of International Union of Pure and Applied Chemistry (**IUPAC**);
 Member of European Rare-Earth Actinide Society (**ERES**);
 Scientific Secretary of Russian National Academy of Sciences Council “Applications of Nuclear Physics Methods in Science & Industry” (**UMNP**);
 Member of American Physical Society;
 Member of American Radiochemistry Society

UCF Committees:

UCF Radiation and Chemical Safety Committee;
 COS Curriculum & Standards (Undergraduate Curriculum) Committee;
 COS Graduate Program Committee;
 Multiple Department Committees: Undergraduate Curriculum, Undergraduate Affairs, Strategic Planning, among others;
 Consultant and Evaluation Committee member for multiple Senior Design Projects in the Department of Electrical Engineering for the last five years;
 COS Instructor/Lecturer Promotion Committee, Spring 2012.

MAJOR TEACHING ACCOMPLISHMENTS

Courses Taught:

Fall 2009	PHY 3101-001-Physics III	92
	PHY 3905-023-Independent Study	1
	PHY 2054-011-Recitations	32
	PHY 2054-012-Recitations	30
	PHY 2054-016-Recitations	31
Spring 2010	PHY 3101-001-Physics III	99
	PHY 3101-002-Physics III	53
	PHY 4906-001-Direct Research	1
	PHY 2930-001-Physics I Lab	30

Summer 2010	PHY 2048-001-Physics I	89
	PHY 2930-001-Physics I Lab	27
	PHY 6916-017-Research	1
Fall 2010	PHY 3101-001-Physics III	90
	PHY 3101-002-Physics III	51
	PHY 2930-001 Physics I Lab	12
	PHY 6918-Graduate Research	1
Spring 2011	PHY 3101-001-Physics III	93
	PHY 7980-Dissertation	1
	PHY 2048-011:Recitations	32
	PHY 2048 015:Recitations	32
Summer 2011	PHY 2048-001-Physics I	90
	PHY 2930-002-Physics I Lab	7
	PHY 3905-C001-Independent Study	1
	PHY 7980-C141-Dissertation	1
Fall 2011	PHY 2048C-002 Physics I	252
	PHY3101-002-Physics III	92
	PHY2930/31L-011,012,0011	11
	PHY7980-0048-Dissertation	1
Spring 2012	PHY 2048C-002 Physics I	255
	PHY3101H-0201-Physics III	19
		8
Fall 2012	PHY2930L-011,002-Physics I Lab	1
	PHY7980-0048-Dissertation	
	PHY2048 ScaleUp-3&4	64
	PHY2930L-011-Physics I Lab	31
	PHY3101-001-Physics III	90
Spring 2013	PHY6918-Graduate Research	1
	PHY3101-002-Physics III	90
	PHY3101H-0201-Physics III	10
		2
Summer 2013	PHY3905-024-Independent Study	1
	PHY6918-21762-Graduate Research	90
Fall 2013	PHY2048-C001- Physics I	1
	PHY6918-C437-Graduate Research	31
	PHY2048C-013-Recitation	90
	PHY3101-002-Physics III	1
Spring 2014	PHY7980-0144-Dissertation	
	PHY 3101-001	90
	PHY 3101H-0201	10
	PHY 3905-025	2
	PHY 3955-0P61	1
	PHY 4912-001	3
PHY 7980-0022	1	

Physics Education Grants:

Co-PI in NSF Award in the Transforming Undergraduate Education in Science, Technology, Engineering, and Mathematics (TUES) program entitled "Active Learning Strategies for Algebra-based Introductory Physics at UCF". The award intended to implement a two-pronged activity-based curriculum in introductory algebra-based physics courses to enhance student learning of physics concepts, to solidify problem-solving skills, to facilitate faculty professional development, and to promote class attendance – all of which should contribute to better retention in STEM disciplines.

PI (one from four) of America Physics Society's PhysTEC Supported Comprehensive Site. The award is granted to build a physics and physical science teacher education program, with the goal of producing a significant number of highly qualified secondary physics teachers in response to the dire need in the rapidly growing greater Orlando area. PhysTEC project complement existing efforts to produce more graduates with degrees in STEM by promoting our new program which offers physics majors the opportunity to pursue teaching certification.

PI in NSF sponsored Collaborative Research Project: Southeast Conference for Undergraduate Women in Physics. The Conference was hosted by UCF Physics Department in January 2013. Around 100 undergraduates came to UCF for the conference, which featured speakers from a variety of physics careers, panel discussions, workshops, and a Science Cafe.

Co-Director in NATO multi-year Science for Peace awarded grant "Radiation Resistant High-speed Transistors for Security Applications". The project is devoted to understanding the impact of gamma irradiation on AlGaN/GaN and InAlN/GaN

heterostructure fundamental properties (majority and minority carrier transport; radiative and non-radiative recombination) as well as on performance of III-N/GaN High Electron Mobility Transistors (HEMTs). As such, the project indirectly access the effects, which may have a significant impact on the reliability of devices deployed in space borne, military, or scientific applications.

Physics Education:

Participated in the Multimedia Course Innovation Project, Fall 2014, organized by UCF Faculty Center for Teaching and Learning;

Attendance to Florida Campus Compact STEM Faculty Scholars Institute, May 13-14, 2013, Orlando, FL;

Participated at Service Learning STEM Project, Spring 2011, organized by UCF Faculty Center for Teaching and Learning;

Attendance to WAUG, WebAssign Users Group Meeting, June 2013, 2012, 2011, Raleigh, NC;

Participated at Sustainability Course Innovation Project, Spring 2010, organized by UCF Faculty Center for Teaching and Learning;

Winter Faculty Development Conference, December 15 -17, 2009, organized by UCF Faculty Center for Teaching and Learning;

Attendance to NSF sponsored Physics Education Workshop, "Activity Based Physics Faculty Institute" Dickinson College, June 15 – June 20, 2008, University of Oregon;

Attendance to International Conference on Education and Information Systems, July 21 – 25, 2009, Orlando, FL;

Attendance to Physics Education Workshop "LivePhoto Physics Faculty Workshop (LPPFW)", January 5-7, 2010, UCF, FL;

Participated in the "Engaging STEM Course Innovation Project" organized by Faculty Center for Teaching and Learning, Spring 2011, UCF, Orlando, FL.

Undergraduate Theses: **Mathew Falanga.** “Material characterization and semiconductor physics. (Served as a member of BS thesis preparation and defense committee in the CREOL, UCF).

Venceslav Gaydarzhiev. Served as a member of BS thesis preparation and defense committee in the College of Engineering and Computer sciences at the UCF.

Justin Luther. Served as a member of BS thesis preparation and defense committee in the College of Engineering and Computer sciences and in the Burnet Honors College at the UCF.

Juan Carlos Gonzales. Served as a member of BS thesis preparation and defense committee in Physics Department and in the Burnet Honors College at the UCF.

Evelyn Sprung. Served as a member of BS thesis preparation and defense committee in CREOL, and in Burnet Honors College, UCF).

Master Theses:

Casey Schwarz, “*Electron beam induced current profiling of ZnO p-n homojunctions*”, Chair of the Defense Committee, Spring 2009;

Anupama Yadav, “*Studies of Gamma-radiation effects in III-Nitrides Semiconductors*”, Chair of the Defense Committee, Spring 2012;

Alvar Rodriguez, “*Single-molecule magnet-based single-electron transistor*”, Member of the Defense Committee, Fall 2012.

Ph-D Theses:

Casey Schwarz, “*Cathodoluminescence Studies of Electron Injection Effects in Wide-Band-Gap Semiconductors*”, Chair of the Defense Committee, Spring 2012;

Other Student Advising and Supervision:

Served as Thesis Preparation and Defense Committee Member for Frank McDonald: “An Investigation of Student’s Problem Solving Skills in an Introductory Physics Class” submitted for degree of *Doctor of Education* in the Department of Teaching and Learning Principles in the College of Education at the UCF;

Member of Thesis Preparation and Defense Committee for Sergiy Kaim: “Theoretical study of Laser Beam Propagation Through Volume Bragg Gratings and Optical Wave guides”, Physics Department, UCF.

Undergraduate Research
Supervision:

Luther Wang. Studies of Gamma-radiation effects in GaN

Johnnie Green. Electron Microscopy of Wide- Band Gap Semiconductors

Nicholas Espinosa, Kattie Corini, Seth Jessen. Set up for the Hall experiment in the Department’s Shared Facility Lab

Pettis Duane. “Spectrometer design for ^{24}Al measurements in cosmic ray exposed samples”.

Wright Amanda. “ γ -spectrometric analysis of cosmic ray exposed samples”.

Thomas Kevin. “Spectrometer design for ^{24}Al measurements in cosmic ray exposed samples”.

Michael Perez. “Material characterization of NTD Germanium”.

Daniel Yates. “Optical spectroscopy of NTD gallium nitride”.

Evelyn Todd. “Hall effect apparatus setting and measurements to confirm the type of NTD germanium conductivity”.

Robert Lemieux. “Gamma-spectrometer design”.

Service

Undergraduate Program Director, Department of Physics UCF

Associate Chair of the Department of Physics, UCF

Undergraduate Curriculum Committee Member, College of Science, UCF.

Chair of Undergraduate Curriculum Committee, Department of Physics, UCF.

University Radiation Safety Committee Member, UCF.

Undergraduate Lab Coordinator, Department of Physics, UCF

Review Committee Member for Senior Design Projects evaluation, College of Engineering and Computer sciences, UCF, 2004 – present.

Committee member on thesis defense for the degree of Bachelors of Science, College of Engineering and Computer sciences, UCF, 2005, 2006, 2008, 2009, 2010, 2011, 2012, 2013

Panelist, REU (Research Experience for Undergraduates) program, CRDF (Civil Rights Development Foundation), National Science Foundation, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013

Textbook search Committee, Department of Physics, UCF, 2005, 2008, 2009

Referred Publications

1. Ya-His Hwang, Yueh-Ling Hsieh, Lei Lei, Shun Li, Fan Ren, Stephen J. Pearton, Anupama Yadav, Casey Schwarz, M. L. Shatkhin, Luther Wang, Elena Flitsiyan, Leonid Chernyak, Albert G. Baca, Andrew A. Allerman, Carlos A. Sanchez, and I.I.Kravchenko, Effect of low dose gamma-irradiation on DC performance of circular AlGaIn/GaN high electron mobility transistors, *Journal of Vacuum Science and Technology B*, v.32 (2014) 031203.
2. Anupama Yadav, Casey Schwarz, Max Shatkhin, Luther Wang, Elena Flitsiyan, Leonid Chernyak, Lu Liu, Y.H. Hwang, Fan Ren, Stephen J. Pearton, and Igor Lubomirsky, Effect of Annealing on Electronic Carrier Transport Properties of Gamma-Irradiated AlGaIn/GaN High Electron Mobility Transistors, *ECS Trans.*, 2014 61(4): 171-177.
3. Ya-Hsi Hwang, Yueh-Ling Hsieh, L Lei, Shun Li, Fan Ren, Stephen J. Pearton, Anupama Yadav, Casey Schwarz, Max Shatkhin, L Wang, Elena Flitsiyan, Leonid Chernyak, Albert G Baca, A Allerman, Carlos A Sanchez, and I. I. Kravchenko, Effect of Gamma Irradiation on DC Performance of Circular-Shaped AlGaIn/GaN High Electron Mobility Transistors, *ECS Trans.*, 2014 61(4): 205-210.
4. Schwarz, C; Yadav, A; Shatkhin, M; Flitsiyan, E; Chernyak, L; Kasiyan, V; Liu, L; Xi, YY; Ren, F; Pearton, SJ; Lo, CF; Johnson, JW; Danilova, E., Gamma irradiation impact on electronic carrier transport in AlGaIn/GaN high electron mobility transistors, *Appl. Phys. Lett.*, v.102, (2013) 062102.

5. Kasiyan, V; Dashevsky, Z; Schwarz, CM; Shatkhin, M; Flitsiyan, E; Chernyak, L; Khokhlov, D, Infrared detectors based on semiconductor p-n junction of PbSe, *Jornal of Applied Physics*, v.112 (2012) 086101.
6. Lo, CF; Liu, L; Kang, TS; Ren, F; Schwarz, C; Flitsiyan, E; Chernyak, L; Kim, HY; Kim, J; Yun, SP; Laboutin, O; Cao, Y; Johnson, JW; Pearton, SJ, Degradation of dc characteristics of InAlN/GaN high electron mobility transistors by 5 MeV proton irradiation, *Journal of Vacuum Science and Technology B*, v.30 (2012) 031202.
7. Elena Flitsiyan, Leonid Chernyak, Casey Schwarz, Book Chapter in "Cathodoluminescence", (2012) ISBN 978-953-51-0362-2
8. E. Flitsiyan, C. Schwarz, L. Chernyak, R.E. Peale, Z. Dashevsky, W. Vernetson (2011), Neutron Irradiation-Induced Enhancement of Electronic Carrier Transport in ZnO, *Radiation Effects and Defects in Solids*, 166 (2), 104-11.
9. Y. Lin, M. Shatkhin, E. Flitsiyan, L. Chernyak, Z. Dashevsky, S. Chu, J.L. Liu (2011), Minority carrier transport in p-ZnO nanowires, *J. Appl. Phys.*, **109**, 016107.
10. C. Schwarz, E. Flitsiyan, L. Chernyak, V. Casian, R. Schneck, Z. Dashevsky, S. Chu, J.L. Liu (2011), Impact of forward bias injection on minority carrier transport in p-type ZnO nanowires, *J. Appl. Phys.*, **110**, 056108
11. Casey Schwarz, Yuging Lin, Max Shatkhin, Elena Flitsiyan and Leonid Chernyak, Cathodoluminescence Studies of electron Irradiation Effects in n-type ZnO, *J. Phys.: Condense. Matter* **23** (2011) 334204.
12. E. Flitsiyan, Z. Dashevsky and L. Chernyak (2011), *Minority carrier transport in ZnO and related materials*, in *GaN and ZnO-based Materials and Device*, edited by S.J. Pearton, Springer Series in Material Science 156, Book chapter, pp.317-361.
13. C.Schwarz, E.Flitsiyan, L.Chernyak, V.Casian, R.Schneck, Z.Dashevsky, S.Chu, and J.L.Liu, Impact of Forward Bias Injection on Minority Carrier Transport in p-type ZnO nanowires, *Jornal of Applied Physics*, 110, (2011)

- 14.L. Chernyak, E. Flitsiyan, M. Shatkhin, and Z. Dashevsky (2010) Studies of Electron Trapping in ZnO Semiconductor, *ECS Transactions*, 28, Issue 4, pp.3-11.
- 15.2. Z. Dashevsky, E. Shufer, V. Kasiyan, E. Flitsiyan and L. Chernyak (2010), Influence of oxygen treatment on transport properties of PbTe:In polycrystalline films, *Physica B*, 405, pp.2380-2384, 2010.
- 16.3. E. Shufer, Z. Dashevsky, V. Kasiyan, E. Flitsiyan, L. Chernyak, K. Gartsman (2010), *Electrical conductivity and minority carrier diffusion in thermally oxidized PbTe thin films*, *Physica B*, 405, pp.1058-1061.
- 17.4. Z. Dashevsky, R. Kreizman, E. Shufer, V. Kasiyan, E. Flitsiyan, M. Shatkhin, and L. Chernyak, *Nanocrystalline PbTe Films* (2009), *J. Nanoelectronics and Optoelectronics*, Volume 4, pp. 296-301.
- 18.5. Z. Dashevsky, V. Kasiyan, S. Asmontas, J. Gradauskas, E. Shirmulis, E. Flitsiyan, L. Chernyak, (2009), *Photothermal effect in narrow band gap PbTe semiconductor*, *J. Appl. Phys.*, 106, 076105.
- 19.Z. Dashevsky, R. Kreizman, E. Shufer, V. Kasiyan, E. Flitsiyan, M. Shatkhin, and L. Chernyak, *Nanocrystalline PbTe Films*, *J. Nanoelectronics and Optoelectronics*, Volume 4, 3, 1–6, 2009
- 20.E. Shufer, Z. Dashevsky, V. Kasiyan, E. Flitsiyan, L. Chernyak, K. Gartsman, *Electrical conductivity and minority carrier diffusion in thermally oxidized PbTe thin films*, *Physica B*, **405**, 1058-1061, 2009.
- 21.Z. Dashevsky, V. Kasiyan, S. Asmontas, J. Gradauskas, E. Shirmulis, E. Flitsiyan, L. Chernyak, *Photothermal effect in narrow band gap PbTe semiconductor*, *J. Appl. Phys.*, 106, 076105, 2009.
- 22.Y. Lin, E. Flitsiyan, L. Chernyak, T. Malinauskas, R. Aleksiejunas, K. Jarasiunas, W. Lim, S.J. Pearton, K. Gartsman, *Optical and electron beam studies of carrier transport in quasibulk GaN*, *Appl. Phys. Lett.*, 95, 092101, 2009
- 23.E. Flitsiyan, C. Schwarz, R.E. Peale, O. Lupan, L. Chernyak, L. Chow, W.G. Vernetson, Z. Dashevsky, *Neutron Transmutation Doping and Radiation Hardness for Solution-Grown Bulk and Nano-Structured ZnO*, *Mater.*

- Res.Soc.Symp.Proc., Performance and Reliability of Semiconductor Devices, Vol.1108, 1108-A05-03(2009).
24. Chernyak, C. Schwarz, E. Flitsiyan, S. Chu, J.L. Liu, and K. Gartsman, *Electron beam induced current profiling of ZnO p-n homojunctions*, Applied Physics Letters, Volume 92, Issue 2, (2008).
 25. E. S. Flitsiyan, Yu. N. Koblik, and P. D. Ioannou, *The Coulomb Potential for a Nuclear System at the Scission Point upon Fission*, Bulletin of the Russian Academy of Sciences: Physics, Vol. 72, No. 10, 2008, 1387.
 26. Lopatiuk-Tirpak, O.; Nootz, G.; Flitsiyan, E.; Chernyak, L.; Mandalapu, L. J.; Yang, Z.; Liu, J. L.; Gartsman, K.; Osinsky, A., *Influence of electron injection on the temporal response of ZnO homojunction photodiodes*, Applied Physics Letters, Volume 91, Issue 4, (2007).
 27. Yu.N.Koblik, E.S.Flitsiyan, V.P.Pikul, B.S.Yuldashev, P.D.Ioannou, *Nucleus Shape at the Scission Point at Different Kinetic Energies of Fission Fragments*, Bull.Rus.Acad.Sci.Phys. 71, 3, 420-425 (2007).
 28. Khugaev A.V., Flitsiyan E.S., Koblik Yu.N., Pikul V.P., Ioannou P.D., *Measurements and analysis of mass and energy distributions of yields of fission products of ^{239}Pu nucleus by thermal neutrons*, Bul. of Russian Acad. of Sci., Physical series, 70, 5, 673-676, (2006)
 29. Khugaev A.V., Flitsiyan E.S., Koblik Yu.N., Pikul V.P., Ioannou P.D., *To the calculation of proton and neutron distribution in fissioning nucle*", Bulletin of Russian Academy of Science, Physical series, 70, 5, p.677-679, 2006.
 30. Yu.N.Koblik, V.P.Pikul, A.V.Khugaev, E.S.Flitsiyan, B.S.Yuldashev, P.D.Ioannou, *Analysis of mass distributions of fission products from ^{239}Pu nuclei*, Izvestiâ RAN, Seria Fiziceskaâ, Vol.27, 8, pp.673-686, 2006
 31. Khugaev A.V., Koblik Yu.N., Ioannou P.D., Flitsiyan E.S., *Investigation of the Coulomb potential of the nuclear system*, Atomic Science and Industry, Series of Nuclear Reactors, 2, p.7-10, 2006.
 32. E. W. Nelson, M.V.Dolguikh, E. S. Flitsiyan, R. E. Peale, S. H. Kleckley, C.J.Fredericsen, W. G. Vernetson, *Neutron Transmutation Doped Far-infrared p-Ge laser*, J.Appl.Phys. 96, 1, (2004).

33. E.W.Nelson, M.V.Dolguikh, E.S.Flitsiyan, A. V. Muravjov, R. E. Peale, S. H. Kleckley, W. G. Vernetson, *"Uniform acceptor distribution in neutron transmutation doped far-infrared p-Ge laser"*, edited by W.E. Thompson and P.H. Merritt, Proc.SPIE Int. Soc. Opt. Eng. 5087, 133 (2003).
34. E.W.Nelson, E.S.Flitsiyan, A.V. Muravjov, M.V. Dolguikh, R.E. Peale, S.H. Kleckley, W.G.Vernetson, V.Z. Tsipin, *'Neutron transmutation doped far-infrared p-Ge laser'*, in "High-Power Fiber and Semiconductor Lasers". Edited by Fallahi, Mahmoud; Moloney, Jerome V. Proceedings of the SPIE, Volume 4993, pp. 10-19 (2003)
35. E.S. Flitsiyan, M.V.Dolguikh, A.V.Muravijov, E.W.Nelson, T.W.Du Bosq, R.E.Peale, C.J.Fredricksen, W.G.Vernetson, *"Gain improvement for THz p-Ge laser using neutron transmutation doped active crystal"*, Edited by R.J.Hwu, D.L.Woolard, SPIE Int. Soc. Opt. Eng. 5411, 216-228 (2004).
36. N. Marcos, M. Siitari-Kauppi, J. Suksi, K. Rasilainen, R.J. Finch, E. Flitsiyan, K.-H. Hellmuth: Discussion on the use of matrix diffusion model after a multidisciplinary study of a granitic boulder sample. In: *Scientific Basis For Nuclear Waste Management XXIV* (edited by Kaye P. Hart and Gregory R. Lumpkin) Materials Research Society Proceedings Volume 663, pp. 1053-1063 (2002).
37. M.Siitari-Kauppi, E.Flitsiyan, P.Klobes, *'Rock Matrix Studies with [¹⁴C]Polymethyl Methacrylate Method'*, Radiochemistry, Volume 43, Number 5, September 2001 , pp. 471-474(4)
38. E.S.Flitsiyan, A.A.Kist, Thermoradiation effects in YBa₂Cu₃O_{7-x} ceramics, J. Analytical Chemistry, v.5, 24, (2000).
39. J.Suksi, M.Siitari-Kauppi, H.Ervanne, N.Marcos, A. Lindberg, E. Flitsiyan, K-H. Hellmuth, *'Postglacial uranium migration in a granitic rock'*, Materials Research Society Proceedings Volume 650, pp.1234-1242 (2000)
40. Siitari-Kauppi, M., Flitsiyan, E.S., Klobes, P. Meyer, K., Hellmuth, K-H., *Progress in physical rock matrix characterization: structure of the pore space*. In: Scientific Basis for Nuclear Waste Management XXI, Mater. Res. Soc. Symp. Proc. 506, 671-678, 1998.

41. E.Flitsiyan, *Using neutron-activation techniques for studying elemental distributions. Application to geochemistry.* J of Alloys and Compounds, 275 - 279, 918 (1998).
42. E.S.Flitsiyan, *Neutron-activation methods in studying the elemental distributions.* Radiation Measurements, v.28, 1-6, 369., (1997)
43. E.S.Flitsiyan, *Application of activation radiography in experimental investigations.* Nuclear Tracks and Radiation Measurement, v.21, 3, 353, (1995).
44. Flitsiyan E.S, *Study of matrix elements distributions in YBa₂Cu₃O_{7-x} ceramics.* J. of Radioanalytical and Nuclear Chemistry, v.167, 2, 475 (1994).
45. E.S.Flitsiyan, A.A.Kist, *Investigation of elemental content of HTSC ceramics by neutron-activation techniques,* J. Analytical Chemistry, v.1, 37, (1994).
46. E.S.Flitsiyan *Study of matrix element distributions in YBa₂Cu₃O_{7-x} ceramics,* J. of Radioanalytical and Nuclear Chemistry, v.167, 2, 475(1994).
47. E.S.Flitsiyan, *Using the activation radiography in geological and geochemical studies.* J. of Radioanalytical and Nuclear Chemistry, v.168, 1, 69 - 81, (1993).
48. Flitsiyan E.S., Ibragimova E.M *Investigation of oxygen radiation-stimulated diffusion in YBa₂Cu₃O_{7-x} ceramics by (n,α)-radiography technique.* Nuclear Tracks and Radiation Measurements, v.21, 3, 353, (1993).
49. E.S.Flitsiyan, S.A.Bakiev *Application of ²⁵²Cf in elemental analysis.* J. Radioanalytical and Nuclear Chemistry, v.147, 1, 59, (1991).
50. M.K.Ashurov, E.S.Flitsiyan *Neutron-activation investigation of monocrystals content.* DAN of USSR, v. 261, 2, (1989).
51. E.S.Flitsiyan, *Oxygen distribution study in YBa₂Cu₃O_{7-x} ceramics by (n,α)-radiography technique,* Journal of Radioanalytical and Nuclear Chemistry, Vol. 167, No. 2 (1993) 475-480
52. E. S. Flitsiyan, A. V. Romanovskii, L. G. Gurvich, and A. A. Kist, *Analysis of the size, shape, and spatial distributions of microinclusions by neutron-activation radiography,* Atomnaya Energya, Vol. 37, No. 5, pp. 434-435, November, 1994.

53. S.V. Malinko, E.S. Flitsiyan, "Neutron-activation study of trace elements in commercial borosilicates", *Geochemistry international*, 30(5), 1993, pp. 112-121
54. L.V. Navalikhin, E.S. Flitsiyan, N.A. Kryzhenkova, and A.A. Kist, *Study of neutron flux distributions from (n,He⁴)-reaction on tritium target*, *Atomnaya Energiya*, Vol. 24, No. 2, pp. 247-253, May, 1989.
55. E. Flitsiyan, *In-situ Studies of Point Defect Creation CsI Scintillators Under 8.63 MeV ⁸⁶Kr Ion Irradiation*, *Nuclear Instruments and Methods in Physics Research A*, 420, 441 - 445 (1999)
56. E.S. Flitsiyan, *Radiation stimulated oxygen diffusion in YBa₂Cu₃O_{7-x} ceramics*, *Japanese Journal of Applied Physics*, V.36, 8, 5057-5063 (1997)
57. N.P. Ermolaev, V.P. Perelygin, S.G. Stetsenko, E.S. Flitsiyan, "A new aspect of research on the emplacement of stratiform Pb-Zn ores", *Geochemistry international*, 27(9), 1990, pp. 31-39
58. N. P. Ermolaev, A. A. Kist, E. S. Flitsiyan, and V. L. Khoroshilov, *Track radiography of heavy elements in minerals*, *Atomic Energy*, V.74,3,pp.214-217,1993.
59. N.P. Ermolaev, E.S. Flitsiyan, and V.P. Perelygin, *Comparison of X-ray and neutron tomography investigations of geological materials*, *Geochemistry*, 2 (1990), p. 195.

Graduate and postgraduate advisors:

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Proposals and Awards:

"Gain, Power, and Duty Enhancement for the Far-infrared p-Ge Laser by Neutron Transmutation Doping", Department of Defense BMDO award, 2004;

"Search and Investigation of Modes of Super Asymmetrical Fission of Actinide Atomic Nuclei", NATO-STCU Collaborative Grant award, 2006

“Active Learning Strategies for Algebra-based Introductory Physics at UCF”, NSF (TUES), 2013.

PhysTEC Comprehensive Site Grant, APS, PhysTEC, 2013.

Collaborative Research Grant: Southeast Conference for Undergraduate Woomen in Physics, 2013.

"Radiation Resistant High-speed Transistors for Security Applications", NATO, Science for Peace, 2013 .