

# Curriculum Vitae

Update (August 6, 2022)



## PERSONAL DATA:

**First Name:** Seyedzafarollah  
**Surname:** Kalantari  
**Address:** Department of Physics, Isfahan University  
of Technology, Isfahan 84156-83111, Iran  
**Tel:** +98 311 3913729  
**Fax:** +98 311 3912376  
**e-mail:** [zafar@iut.ac.ir](mailto:zafar@iut.ac.ir)  
**Date of Birth:** 29 Jan. 1965  
**Nationality:** Iranian  
**Place of Birth:** Ahvaz, Iran  
**Sex:** Male  
**Marital Status:** Married  
**Number of Children:** Two

## ACADEMIC DEGREES:

- Ph.D. in Physics, Shiraz University, Shiraz, Iran, 1992-1996.  
Ph.D. Thesis: Effects of Spin Polarization, Tritium Concentration and Sticking Coefficients on Fusion Dynamics.
- M.Sc. in Physics, Shiraz University, Shiraz, Iran, 1989-1991.  
M.Sc. Thesis: Formulation of Electrodynamics by Considering magnetic Monopoles.
- B.Sc. in Physics, Shiraz University, Shiraz, Iran, 1984-1989.

### **ACADEMIC POSITION:**

- Professor, 2015- present, Isfahan University of Technology.
- Associate Professor, 2005-2014, Isfahan University of Technology.
- Assistant Professor, 1996-2004, Isfahan University of Technology.

### **ADMINISTRATIVE POSITION:**

- Head of Department of Physics, Isfahan University of Technology (2020-present).
- Managing Editor of Iranian Journal of Physics Research (2021-present).
- Vice-President for Student Affairs, Isfahan Univ. of Tech. (2013-2020).
- Member of editorial board of Iranian Journal of Physics Research (2010-present).
- Editor of Iranian Journal of Physics Research (2002-present).  
(the journal is published jointly by the Physics Society of Iran and Isfahan University of Technology).
- Graduate Program Advisor in Department of Physics, Isfahan Univ. of Tech. (2006-2008).
- Deputy of Student Affairs in Department of Physics, Isfahan Univ. of Tech. (2002-2006).

### **TEACHING SUBJECTS:**

- **Undergraduate Courses:** General Physics, Modern Physics, Analytical Mechanics 1 and 2, Mathematical Physics, Electromagnetism, Nuclear Physics 1 and 2, Nuclear Reactor Physics, Advanced Lab. Physics.
- **Graduate Courses:** Classical Mechanics, Special Topics in Nuclear Physics, Advanced Nuclear Physics 1 and 2, Nuclear Fusion.

### **RESEARCH AREA:**

#### **The Main Research Topics:**

- Deeply bound states of K-N systems.
- Boron Neutron Capture Therapy (BNCT).
- Proton Therapy.
- Particle accelerators.
- Interactions of Nuclear Radiations with Matter.

- Radiation Protection.
- Simulation of the Cascade Dynamics of Exotic Atoms.
- Calculation of the cross sections of cascade processes for kaonic atoms.
- Spin Polarization effects on ICF and  $\mu\text{CF}$ .
- Monte-Carlo Simulation of  $\mu\text{CF}$  Cycle.
- Cascade Processes of Muonic and Exotic atoms.
- Experiment and Simulation of the Sonoluminescence(SBSL).
- Inertial Confinement Fusion (ICF).

### SCIENTIFIC COLLABORATIONS:

- Permanent member of the Physics Society of Iran (PSI) (1995-present).
- SIDDHARTA International Collaboration (Silicon Drift Detector for Hadronic Atom Research by Timing Application) INFN, LNF, Frascati, Italy (2006-2007).
- Sabbatical leave in Western Michigan University, USA (2012).
- Member of scientific committee of the 2<sup>nd</sup> Iranian Particle Accelerator Conference, IPM, Tehran, Iran (2015).
- Chair of the 3<sup>rd</sup> Iranian Particle Accelerator Conference, Isfahan University of Technology, Isfahan, Iran (2017).
- Sabbatical leave in INFN, LNF, Italy (Summer 2018).
- Member of scientific committee of the Annual Physics Conference of Iran,(PSI), in several years at:  
Boalisina University, Hamedan, September (2010);  
Isfahan University of Technology, Isfahan, August (2009);  
Kashan University, Kashan, August (2008);  
Yasouj University, Yasouj, August (2007);  
Shahrood University of Technology, Shahrood, August (2006);  
Tehran, August (2004);  
Tabriz University, Tabriz, August (2003);  
Zanjan University, Zanjan, August (2002).

### LIST OF PUBLICATIONS:

#### Published Papers in Journals:

1. *The Equilibrium Configuration of Rotating Neutron Stars*, R. Riahi and S. Z. Kalantari, Iranian Journal of Physics Research (2022).
2. *Vacuum system design for the storage ring of Iranian Light Source Facility*, H. Karimi, S.Z. Kalantari, J. Rahighi, Nuclear Inst. and Methods in Physics Research, A **953** (2020) 163202.

3. *Properties of rotating neutron star in density-dependent relativistic mean-field models*, R. Riahi and S. Z. Kalantari, International Journal of Modern Physics D, **30**, 1 (2021) 215001.
4. *Structure of the  $\Lambda(1405)$  resonance and the  $\gamma+p \rightarrow K^+ + (\pi\Sigma)^0$  reaction*, S. Marri, M. N. Nasrabadi and S.Z. Kalantari, *Physical Review C*, **103**, (2021) 055204.
5. *Structure, formation and decay of  $\bar{K}NN$  system by Faddeev-AGS calculations*, S. Marri, S. Z. Kalantari and J. Esmaili, Chinese Physics C, **43** (2019) 064101.
6. *Universal relations for the Keplerian sequence of rotating neutron stars*, R. Riahi, S. Z. Kalantari and J. A. Rueda, Phys. Rev. D, **99** (2019) 043004.
7. *Investigation of kaon-deuteron interaction and the structure of  $\Lambda(1405)$  resonance using Faddeev method*, S. Marri, S. Z. Kalantari and J. Esmaili, Iranian Journal of Physics Research, **18** (2019) 539-549.
8. *Investigation of  $\bar{K}\bar{K}N$  coupled channel system by Faddeev method*, S. Marri, S. Z. Kalantari and J. Esmaili, Iranian Journal of Physics Research, **18** (2018) 291-299.
9. *Polarization of a probe laser beam due to nonlinear QED effects*, S. Shakeri, S.Z. Kalantari, She-Sheng Xue, PHYSICAL REVIEW A, **95** (2017) 012108-1
10. *Deeply quasi-bound state in single- and double- bar K nuclear clusters K*, Sajjad Marri, S.Z. Kalantari, J. Esmaili, EUROPEAN PHYSICAL JOURNAL A, **52** (2016) 1.
11. *Coupled - channels Faddeev AGS calculation of K-ppn and K-ppp quasi - bound states*, S. Marri and S.Z. Kalantari, Eur. Phys. J. A **52** (2016) 282.
12. *Investigation of Isfahan Miniature Neutron Source Reactor (MNSR) for Boron Neutron Capture Therapy by MCNP Simulation*, Iranian J. of Phys. Research, H. Tavakoli, S.Z. Kalantari and M. Nami Nazari, **4**, 14 (2015) 327.
13. *Investigation of the Source of t Atoms and Muon Catalyzed Fusion in the Multilayer Solids of Hydrogen Isotopes*, J. of Nucl. Sci. and Tech., N. Razavi and S. Kalantari, **68** (2014) 64.
14. *Calculation of neutron flux for the intense neutron source ( CF-INS) in optimum conditions*, M. Chashti and S.Z. Kalantari, Journal of Nuclear Sciences, **1**, 2 (2014) 38.

15. *Theoretical analysis of  $\Lambda(1405) \rightarrow \Sigma\pi^0$  mass spectra produced in  $p+p \rightarrow p+\Lambda(1405)+K^+$  reactions*, M. Hassanvand, S.Z. Kalantari, Y. Akaishi, and T. Yamazaki, Phys. Rev. C **87** (2013) 055202.
16. *Capture of  $K^-$  by the  $^4\text{He}$  atom and the internal Auger effect in the Kaonic atom*, S.Z. Kalantari, Sh. Sanayehajari, and M. Dayyanikelisani, Phys. Rev. C **86** (2012) 024603.
17. *Investigation of the  $\Lambda(1405)$  production in  $p+p \rightarrow p+K^++\Lambda(1405)$  reaction*, M. Hassanvand, S.Z. Kalantari, Y. Akaishi, and T. Yamazaki, Iranian Journal of Physics Research **12**, 4(2012)83.
18. *The investigation of  $KN-\pi\Sigma$  interaction effects on  $K^-pp$  system by Faddeev methods*, J. Esmaili, S.Z. Kalantari, Sh. Maeda, Y. Akaishi, T. Yamazaki, Iranian Journal of Physics Research **12**, 2(2012)18.
19. *Calculation of Cascade Processes rates and Simulation of the Transitions in Kaonic  $^4\text{He}$  atom*, S.Z. Kalantari, Sh. Sanaye and M. Dayyani, Hyperfine Interact., **209** (2012) 145.
20. *Investigation of  $Kp$  and  $Kd$  atom formations and their collisional processes with hydrogen and deuterium targets by Classical-Trajectory Monte Carlo method*, M. Raeisi G. and S.Z. Kalantari, Phys. Rev. A **82** (2010) 042501.
21. *Atomic cascade of  $K-p$  and  $K-d$  atoms and Doppler broadening contribution on x-ray widths*, S.Z. Kalantari and M. Raeisi G., Phys. Rev. C **81** (2010) 014608.
22. *Density dependence of the deexcitation dynamics of kaonic hydrogen and deuterium atoms formed in kaon transmission through gaseous hydrogen and deuterium targets*, M. Raeisi G. and S.Z. Kalantari, Phys. Rev. A **79** (2009) 012510.
23. *Study of Moving Single Bubble Sonoluminescence*, M. Aliasgarian and S.Z. Kalantari, Iranian Journal of Physics Research **8**, No.4(2009)227.
24. *Study of the Dynamics of Cascade Processes of Muonic Atoms by Multi Group Method*, S. Z. Kalantari and H. Pirahmadian, Iranian Journal of Physics Research **6**, No.2(2006)95.
25. *Determination of Time Spectra of Neutrons and Energy Spectra of Muonic Atoms in  $\mu\text{CF}$  by Monte-Carlo Method*, S.Z. Kalantari and J. Esmaili, Iranian Journal of Physics Research **5**, No.2(2005)49.

26. *Investigation of the  $\mu$ CF in the Spin Polarized Condition*, S.Z. Kalantari, Int. J. of Mod. Phys. E **12**, 3(2003)431.
27. *Effects of the Side-Path Model on the Muon Total Sticking Coefficient and Cycling Rate in D/T  $\mu$ CF*, S.Z. Kalantari and M. Sohani, Int. J. of Mod. Phys. E **11**, 6(2002)539-554.
28. *Investigation of Epithermal Molecular Formation and Hyperfine Interaction Effects on Kinetics of  $\mu$ CF*, S.Z. Kalantari and V. Tahani, Hyperfine Interactions, **142**(2002)627-642.
29. *Study of the Total Sticking Coefficient and Determination of Optimum Conditions for D/T  $\mu$ CF With Meta-Stable  $d\mu^-$  Molecule*, S.Z. Kalantari and M.Sohani, Iranian J. of Phys. Research **2**, 4(2001)207.
30. *Efficiency of the  $\mu$ CF in Triple H/D/T Mixtures* , S.Z. Kalantari, Hyperfine Interactions **128**, 4(2000)481-493.
31. *Spin Polarization Effects on D-T and D-3 He in ICF*, S.Z. Kalantari and M.R. Eskandari, Nucl. Sci. J. **33**, 3(1996)163.
32. *Gain Calculation for the D/T in SCAT and CAT Modes With Bremsstrahlung Loss and Reheat Branches*, M.R. Eskandari and S.Z. Kalantari, Iranian J. of Sci. and Tech. **19**, 3(1995)173.

### **Presentations at Conferences:**

1. *Kaonic atoms and Nuclei*,  
S,Z. Kalantari, Annual Nuclear Physics Conference of Iran (ANP), Nuclear Physics Society of Iran, Mashhad, Iran, Ferdowsi University, February (2021).
2. *Investigation of the beam loading effects in a pillbox cavity*,  
R. Kavusi, S.Z. Kalantari, S. Sanayehajarii and F. Ghasemi, Annual Physics Conference of Iran, Physics Society of Iran(PSI), Isfahan, Isfahan University of Technology (2021).
3. *Determining the radius-mass range of a rotating neutron star using the universal relation of Keplerian frequency*,  
R. Riahi and S. Z. Kalantari, Annual Physics Conference of Iran, Physics Society of Iran(PSI), Isfahan, Isfahan University of Technology (2021).
4. *Investigation of the  $\pi\Sigma$  mass spectra in the  $\gamma+p \rightarrow K^+ + (\pi\Sigma)^0$  reaction by AGS Faddeev method*, S. Marri , M. N. Nasrabadi and S.Z. Kalantari, Nuclear Structure and Reactions conference, University of Golestan, Iran (2021).

5. *Calculation of the optimum energy and therapeutic gain in proton therapy of brain tumor using Snyder phantom in MCNP code,*  
S. Rezaei and S.Z. Kalantari, Annual Nuclear Physics Conference of Iran (ANP), Nuclear Physics Society of Iran, Bushehr, Iran, February (2019) 1.
6. *The stability of rotating neutron stars,*  
R. Riahi and S. Z. Kalantari, Annual Physics Conference of Iran, Physics Society of Iran(PSI), International University Imam Khomeini, Ghazvin, Iran, (2018).
7. *Investigation of kaon-deuteron interaction at  $p_{lab}^{\bar{K}} = 1\text{GeV}/c$  by Faddeev method,*  
S. Marri, S. Z. Kalantari and J. Esmaili, Annual Nuclear Physics Conference of Iran (ANP), Nuclear Physics Society of Iran, Tehran, Iran, February (2017) 866.
8. *Investigation of  $\bar{K}KNN$  four-body using Faddeev AGS method,*  
S. Marri, S. Z. Kalantari and J. Esmaili, Annual Nuclear Physics Conference of Iran (ANP), Nuclear Physics Society of Iran, Tehran, Iran, February (2017) 870.
9. *Designing Of Electromagnet For a Small Cyclotron Accelerator,*  
M. Tavakoli and S.Z. Kalantari, Third Iranian Particle Accelerator Conference, Isfahan University of Technology, Isfahan, Iran. Dec. (2017) 158.
10. *Investigation Of The Optimum Conditions For PIG Ion Source,*  
M. Tavakoli and S.Z. Kalantari, Third Iranian Particle Accelerator Conference, Isfahan University of Technology, Isfahan, Iran. Dec. (2017) 154.
11. *Effect of the different equations of state on maximum mass of rotating neutron stars,*  
R. Riahi, S. Z. Kalantari, J. A. Rueda and R. Ruffini, Annual Physics Conference of Iran, Physics Society of Iran(PSI), Yazd University, Yazd, Iran (2017).
12. *Exploring the nonlinear QED effects with a probe laser beam,*  
S. Shakeri, S.Z. Kalantari, and She-Sheng Xue, 7<sup>th</sup> Conference of Particle Physics and Fields, Damghan University, Iran (2017) 58.
13. *Investigation of  $\bar{K}KNN$  four-body using Faddeev AGS method,*  
S. Marri, S. Z. Kalantari and J. Esmaili, Annual Nuclear Physics Conference of Iran, Nuclear Physics Society of Iran, Tehran, Iran, February (2017) 870.

14. *Investigation of the ground states of  $\bar{K}NN$  and  $\bar{K}NNN$  systems by the Faddeev method,*  
S. Marri, S. Z. Kalantari and J. Esmaili, Annual Physics Conference of Iran, Physics Society of Iran(PSI), Ferdowsi University, Mashhad, Iran, August (2015) 359.
15. *Investigation of the atomic and nuclear states of  $K^-^{118}Sn$ ,*  
M. Jafari Shahivand and S.Z. Kalantari, Annual Physics Conference of Iran, Physics Society of Iran(PSI), Ferdowsi University, Mashhad, Iran, August (2015) 2278.
16. *Neutron beam design based on  $^{252}Cf$  neutron source for BNCT,*  
Z. Salehi, S.Z. Kalantari and Y Kasesaz, Annual Physics Conference of Iran, Physics Society of Iran(PSI), Sistan & Balochestan University, Iran, September (2014) 1691.
17. *Calculation of the deeply bound nuclear states of  $K^-^{12}C$  and  $K^-^3He$ ,*  
M. Jafari Shahivand and S.Z. Kalantari, Annual Physics Conference of Iran, Physics Society of Iran(PSI), Sistan & Balochestan University, Iran, September (2014) 1555.
18. *The rule of  $\Lambda(1405)$  resonance in determination of  $K^-pp$  energy,*  
S. Marri, S. Z. Kalantari and J. Esmaili, 21st IPM Physics Spring Conference, IPM, Tehran, Iran, May (2013).
19. *Stability of Particle Motion in the IUT's 7 inches Cyclotron,*  
A. Arefian, S.Z. Kalantari, and S. Mahmoudpour Ghamsar, 1<sup>th</sup> Iranian Particle Accelerator Conference, Amirkabir University of Technology, Tehran, Iran. Nov. (2012).
20. *Calculation of the cross section of  $\Lambda \bar{\Lambda} (1405)$  formation in  $pp$  collision and its decay rate to  $\sum\pi$  channel and fitting to HADES data,*  
M. Hassanvand, S.Z. Kalantari, Annual Physics Conference of Iran, Physics Society of Iran(PSI), Yasd University ,Yazd, Iran, September (2012)355.
21. *Calculation of Cascade Processes rates and Simulation of the Transitions in Kaonic  $4He$  atom,*  
S.Z. Kalantari, Sh. Sanaye and M Dayyani, International Conference on Exotic Atoms and Related Topics - EXA2011, Vienna, September(2011).



22. *Study of the formation possibility of a deeply-bound  $K^-K^-pp$  state in the  $pp \rightarrow K+K^{++}$  reaction,*  
M. Hassanvand, Y. Akaishi, T. Yamazaki and S.Z. Kalantari, Annual Physics Conference of Iran, Physics Society of Iran(PSI), Urmia University ,Urmia, Iran, 5-8 September (2011).

23. *Investigation of the resonant formation of  $^{14}O$  by stopped- $K^-$  absorption in  $d$ ,*  
J. Esmaili, S.Z. Kalantari, Y. Akaishi and T. Yamazaki, Annual Physics Conference of Iran, Physics Society of Iran(PSI), Urmia University ,Urmia, Iran, September (2011).

24. *Neutron Flux Simulation of The Intense Neutron Generator (CF-INS),*  
M. Chashti, S.Z. Kalantari, Annual Physics Conference of Iran, Physics Society of Iran(PSI), Urmia University ,Urmia, Iran, 5-8 September (2011) 1075.

25. *Design a beam shaping assembly (BSA) for Isfahan MNSR reactor for using in BNCT,*  
H. Tavakoli, S.Z. Kalantari, Annual Physics Conference of Iran, Physics Society of Iran(PSI), Urmia University ,Urmia, Iran, 5-8 September (2011) 1051.

26. *Determination of mass and width of  $^{14}O$  by  $\sum\pi$  invariant-mass spectra from  $K^-$  absorption ...,*  
J. Esmaili, S.Z. Kalantari, Y. Akaishi and T. Yamazaki,, Proceeding of the ANP Conference of Iran, Isfahan, Iran, 23-24 February(2011) 464.

27. *Few body calculations of deeply bound states of Kaonic Nuclei by Faddeev method,* J. Esmaili,  
S.Z. Kalantari, Y. Akaishi and T. Yamazaki,, Proceeding of the ANP Conference of Iran, Isfahan, Iran, 23-24 February(2011) 1260.

28. *Simulation of Cascade Transitions and Calculation of X-ray Yields of Kaonic Helium Atoms,*  
S.Z. Kalantari, Sh. SanayeM and Dayyani, Proceeding of the Annual Physics Conference of Iran, Physics Society of Iran(PSI), Boalisina University ,Hamedan, Iran, 12-14 September (2010).

29. *Quantum Mechanical Calculation of Cascade Transition Rates of  $K^4He$  Atoms,*  
S.Z. Kalantari,  
M Dayyani and Sh. Sanaye, Proceeding of the Annual Physics Conference of Iran, Physics Society of Iran(PSI), Boalisina University ,Hamedan, Iran, 12-14 September (2010).

30. *Analysis of cascade dynamics and x-ray yields for K-p and K-d atoms by Monte-Carlo method,*  
S.Z. Kalantari, International Workshop on Hadronic Atoms and Kaonic Nuclei solved puzzles, open problems and future challenges in theory and experiment, ECT<sub>2</sub>, Trento, Italy, October 12-16 (2009).
31. *Nuclear Absorption and Stark mixing effects on the X-ray Yields of Kaonic Hydrogen and Deuterium Atoms,*  
M. Raeisi G. and S.Z. Kalantari, Proceeding of the Annual Physics Conference of Iran, Physics Society of Iran(PSI), Isfahan University of Technology, Isfahan, Iran, 15-18 August (2009)649.
32. *Calculation of Collisional Processes Cross Sections of Kaonic Hydrogen Atom with Hydrogen atom and molecule by CTMC Model,*  
M. Raeisi G. and S.Z. Kalantari, Proceeding of the Annual Physics Conference of Iran, Physics Society of Iran(PSI), Isfahan University of Technology, Isfahan, Iran, 15-18 August (2009)86.
33. *Simulation of Sonoluminescence by Water Hammer in Low Frequencies,*  
S. Mahmoodpour and S.Z. Kalantari, Proceeding of the Annual Physics Conference of Iran, Physics Society of Iran(PSI), Isfahan University of Technology, Isfahan, Iran, 15-18 August (2009)548.
34. *Sonoluminescence Experiment in Low Frequencies by water Hammer,*  
S. Mahmoodpour and S.Z. Kalantari, Proceeding of the Annual Physics Conference of Iran, Physics Society of Iran(PSI), Isfahan University of Technology, Isfahan, Iran, 15-18 August (2009)560.
35. *Study of the Motion and the Temperature of Bubble in Moving Single Bubble Sonoluminescence,*  
S.Z. Kalantari and M. Aliasgarian, Proceeding of the Annual Physics Conference of Iran, Physics Society of Iran(PSI), Kashan University, Kashan, Iran, 25-29 August (2008)45.
36. *Calculation of Muonic atom cascade dynamics in D-T Mixtures,*  
S.Z. Kalantari and M. Raeisi, International Conference on  $\mu$ CF and Related Topics (MCF-07), JINR, Dubna, Russia, June 18-21 (2007).
37. *Study of the strong interaction by calculation of the K series yields in cascade processes of kaonic hydrogen atoms,*  
S.Z. Kalantari and M. Raeisi, Proceeding of the Annual Physics Conference of Iran, Physics Society of Iran(PSI), Yasuj University, Yasuj, Iran, 27-30 August (2007)103.

38. Study of the liquid temperature effects on single bubble sonoluminescence by a hydrochemical model,  
S.Z. Kalantari, M. Hasanvand, A. Moshaii, and R. Rezaei, Proceeding of the Annual Physics Conference of Iran, Physics Society of Iran(PSI), Yasuj University, Yasuj, Iran, 27-30 August (2007)751.
39. *Calculation of relative x-ray yields in cascade processes of muonic deuterium atoms by Monte-Carlo method,*  
S.Z. Kalantari and M. Raeisi, Proceeding of the Annual Physics Conference of Iran, Physics Society of Iran(PSI), Shahrood University, Shahrood, Iran, 28-31 August (2006)242.
40. *Dynamics of cascade processes of muonic atoms,*  
S.Z. Kalantari and H. Pirahmadian, Proceeding of the Annual Physics Conference of Iran, Physics Society of Iran(PSI), Shahrood University, Shahrood, Iran, 28-31 August (2006)238.
41. *Hydrochemical simulation of sonoluminescence from Noble gas bubbles,*  
R. Rezaei-Nasirabad, M. Silatani, K. Imani, A. Moshaii, S.Z. Kalantari, R. Sadighi-Bonabi, Proceeding of the Annual Physics Conference of Iran, Physics Society of Iran(PSI), Shahrood University, Shahrood, Iran, 28-31 August (2006)465.
42. *Simulation of cascade processes of muonic atoms in D/T mixtures by Monte-Carlo method,*  
S.Z. Kalantari and M. Raeisi, Proceeding of the ANP Conference of Iran, Ferdowsi University, Mashhad, Iran, 22-23 February(2005).
43. *Determination of time spectra of neutrons and energy spectra of muonic atoms in  $\mu$ CF by Monte-Carlo method,*  
S.Z. Kalantari and J. Esmaili, Proceeding of the ANP Conference of Iran, Ferdowsi University, Mashhad, Iran, February(2005).
44. *Ultra-High intensity muon beam effects on  $\mu$ CF cycle,*  
S.Z. Kalantari and H. Rabbani, Proceeding of the Annual Physics Conference of Iran, Physics Society of Iran(PSI), Tehran, Iran (2004)115.
45. *Monte-Carlo simulation of the  $\mu$ CF,*  
S.Z. Kalantari, Proceeding of the ANP Conference of Iran, Arak, Iran(2004)190.

46. *Calculation of Spin-Flip rate of  $t\mu 1$  atoms and investigation of spin polarization effects on  $\mu CF$  cycle,*  
S.Z. Kalantari, Proc. of the Annual Phys. Conf. of Iran, Zanjan Univ., Iran, Physics Society of Iran(PSI) (2002)21.
47. *Spin polarization effects on kinetics of  $\mu CF$ ,*  
S.Z. Kalantari, Proceeding of the ANP Conference of Iran, Shahreza, Iran (2002)108.
48. *Thermalization of Muonic Atoms and Calculation of  $\_$  Parameter in  $\mu CF$ ,*  
S.Z. Kalantari and V. Tahani, Proc. of the Annual Phys. Conf. of Iran, Physics Society of Iran(PSI), Teach. Training Univ. of Sabzevar, Iran (2001)104.
49. *Epithermal effects and hyperfine interactions in H/D/T  $\mu CF$ ,*  
S.Z. Kalantari and V. Tahani, Proc. of the Annual Phys. Conf. of Iran, Physics Society of Iran(PSI), Teach. Training Univ. of Sabzevar, Iran (2001)12.
50. *Improvement of the essential parameters in  $\mu CF$  by considering the metastable molecule  $dt\mu^*$ ,*  
S.Z. Kalantari and M. Sohani, Proc. of the Annual Phys. Conf. of Iran, Physics Society of Iran(PSI), Shahrood Univ., Iran (2000)26.
51. *Efficiency of the  $\mu CF$  in triple H/D/T mixtures,*  
S.Z. Kalantari, Proc. of the Annual Phys. Conf. of Iran, Physics Society of Iran(PSI), Mazandaran Univ., Iran (1999)87.
52. *Nuclear Fusion,* S.Z. Kalantari,  $7^{th}$  Phys. Teach. Conf. of Iran, Center of Teach. Training of Yazd (1999).
53. *Tritium concentration effects on  $\mu CF$  cycle efficiency,*  
S.Z. Kalantari, Abs. of the Iranian Annual Phys. Conf., Physics Society of Iran(PSI), Ferdowsi Univ. of Mashhad, Iran (1996)350.
54. *Spin polarization effects on fusion dynamics,*  
S.Z. Kalantari and M.R. Eskandari, Abs. of the Iranian Annual Phys. Conf., Physics Society of Iran(PSI), Urmia Univ., Iran (1995)191.
55. *Neutron production and breeding of  $^{239}Pu$  and  $^3t$  in D-T and D- $^3He$  ICF,* S.Z. Kalantari, Gathering of Phys. Stu., Ferdowsi Univ. of Mashhad, Iran (1995)4.

56. *Gain calculation for the D-T in SCAT and CAT modes with Bremsstrahlung loss and Reheat branches*, M.R. Eskandari and S.Z. Kalantari, Abs. of Seventh Inter. Conf. on Emerging Nuclear Energy Systems, Makuhari, Chiba, Japan, (1993)123.
57. *Kinetics of D-T fusion by ICF in SCAT and CAT modes*, M.R. Eskandari and S.Z. Kalantari, Abs. of the Iranian Annual Phys. Conf., Physics Society of Iran(PSI), Razi Univ., Kermanshah, Iran (1993)85.
58. *Safety studies on Pool-Type research reactors*, M.R. Eskandari, A. Ghasemi and S.Z. Kalantari, Proc. of 3<sup>rd</sup> Int. Conf. on Nuclear Power Plants Safety ..., Obninsk, Russia (1993)131.
59. *Evaluation of depletion function of any index of  $k \geq 3$  for isotope transmutation*, M.R. Eskandari and S.Z. Kalantari, Proc. of Inter. Congress on Computational Method in Engineering, Vol.1, Shiraz Univ., Iran (1993)177.
60. *Generalized Hertz Potentials*, M.M. Golshan and S.Z. Kalantari, Abs. of the Iranian Annual Phys. Conf., Physics Society of Iran(PSI), Alzahra Univ., Tehran, Iran (1992)12.
61. *Derivation of the Maxwell equations in the presence of magnetic Monopoles by spatial relativity*, M.M. Golshan and S.Z. Kalantari, Abs. of the Iranian Annual Phys. Conf., Physics Society of Iran(PSI), Isfahan Univ., Isfahan, Iran (1991)50.

#### **AWARDS:**

The Physical Society of Iran Award, for the Best Physics Research in Iran, September 1995.