



Bahram Jazi

Professor

College: faculty of Physics

Department: Laser and Photonics

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B. Sc. Educational Physics (University of Karazmi (Tarbiat Moallem) – Tehran-Iran-June.1990)

M. Sc in Atomic Physics (University of Karazmi (Tarbiat Moallem) – Tehran-Iran-Oct. 1993)

Title of M. Sc. thesis: "General theory of atomic collisions and its application in excitation of CO₂ molecule"

Supervisor: Dr. Farshad Ebrahimi (Shahid Beheshti University)

Ph. D. in Plasma Physics (Shahid Beheshti University –Tehran-Iran-Dec. 2004)

Title of Ph. D. thesis: "Investigation of surface waves on plasma surfaces and the mechanism of its excitation in modern microwave sources"

Supervisor: Prof. Babak Shokri

Affiliation : Head of microwave Lab.(In progress constructing) and electronic Lab. Physics Dep. of University of Kashan – Kashan-I. R. Iran

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H-Index = 14

Course taught : Plasma physics- Microwave engineering- non-neutral plasma physics- Electrodynamics-Modern Optics-Electronics-Electromagnetic media

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Research Areas:

plasma Physics **Artcles Published**

1**) Filamentation of a subsonic plasma jet by surface waves (B. Shokri & B. Jazi . . Elsevier. Phys. Lett. A 2002)

2**) Ion- acoustic modulation of a magnetized plasma jet by surface waves (B. Shokri, B. Jazi. Elsevier. Phys. Lett. A,2003)

3**) Azimuthal electromagnetic surface waves on an annular magnetized plasma (B. Shokri, B. Jazi. Elsevier. Phys. Lett. A 2003)

4**)Excitation of non- reciprocal electromagnetic surface waves in semi- bounded magnetized plasmas by an electron beam (B. Shokri , B. Jazi. AIP. Phys. of plasmas 2003)

5**) Dispersion relation of azimuthal electromagnetic surface waves on a magnetized plasma column in a dielectric lined slow-wave waveguide (B. Jazi, H. Mehdian . IOP . Plasma Physics and Controlled Fusion . 2004)

6**) Excitation of electromagnetic surface waves by an annular electron beam in a plasma waveguide with a dielectric rod and a magnetized plasma column(B. Jazi, B. Shokri . IOP. Plasma Physics and Controlled Fusion . 2005)

7**) Spatial growth-rate and field profiles of symmetric mode in a rod dielectric Cherenkov maser with a magnetized plasma column (B. Shokri , B. Jazi. Elsevier. Phys. Lett. A 2005)

8**) Time growth-rate of symmetric TM-mode of a rod dielectric Cherenkov plasma Maser (B. Shokri, B. Jazi, AIP . Phys. of plasmas 2005)

9**) The theoretical simulation of magnetized electron beam effects on radially polarized of an annular cylindrical piezoelectric crystal (B. Jazi, B. Khoshnevisan & H. Zeynali . Elsevier. Phys. Lett. A 2006)

10**) Azimuthal electromagnetic surface waves in a rod dielectric magnetized plasma waveguide and their excitation by an annular relativistic rotating electron beam (B. Jazi, B. Shokri & H. Arbab. IOP. Plasma Physics and Controlled Fusion . 2006)

11**)The theoretical investigation of THz electromagnetic waves in a rod degenerate plasma-waveguide (B. Jazi, M. Nejati & A. Salehi, Springer, Int. Jour. of Infrared and Millimeter waves 2006)

12**)Excitation of THz symmetric TM-modes in a cylindrical metallic waveguide with an axial magnetized degenerate plasma rod by an electron beam (B. Jazi, M. Nejati & B. Shokri . Elsevier. Phys. Lett. A 2007)

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14**)A computer tracking system of solar dish with two-axis degree freedoms based on picture processing of bar shadow.[H. Arbab, B. Jazi & M. Rezagholizadeh . Elsevier . renewable energy, 2008]

15**)The single wall carbon nanotube waveguides and excitation of their\$ sigma \$ + \$pi \$ plasmons by electron beam(M. Nejati & C. Javaherian & B. Shokri & B. Jazi. AIP. Physics of

Plasmas. 2009)

16**) Binodal curve measurements for (water + propionic acid + dichloromethane) ternary system by cloud point method (M. Mohsen-Nia & B. Jazi & H. Amiri . Elsevier, The Journal of Chemical Thermodynamics 2009)

17**) Effects of external electromagnetic field on binodal curve of (water + propionic acid + dichloromethane) ternary system(M. Mohsen-Nia & H. Amiri & B. Jazi. Elsevier, The Journal of Chemical Thermodynamics 2009)

18**) The theoretical simulation of Fabry-Perot interferometer with a cold collisionless plasma layer (B. Jazi & M. Monemzadeh & R. Ramezani-Arani, Springer, Jour. of infrared , millimeter and Terahertz waves, 2009)

19**) Dielectric Constants of Water, Methanol, Ethanol, Butanol and Acetone: Measurement and Computational Study(M. Mohsen-Nia & H. Amiri & B. Jazi, Springer, Journal Of Solution Chem, 2010)

20**) Generation and amplification of terahertz electromagnetic waves in a plasma waveguide with a dielectric rod and an annular degenerate plasma (H. Tashakori, A.R. Niknam, M. Nejati and B. Jazi, Talor & Francis , Waves in Random and Complex Media,2010)

21**) About propagation of electromagnetic waves in the elliptical waveguides made of the materials with anisotropic Hermitian dielectric tensors(B. Jazi, A. Abdoli-Arani, Z. Rahmani, M. Monemzadeh, R. Ramezani-Arani, Talor & Francis , Waves in Random and Complex Media,2010)

22) The dielectric tensor and field equations in the inhomogeneous cold collisionless magnetized drift plasmas with elliptical cross sections (B. Jazi, A. Abdoli-Arani, Z. Rahmani, R. Ramezani-Arani, M. Monemzadeh, Elsevier, Physics letters A, 2010)

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24)Influence of thermal and collisional effects on the dielectric permittivity tensor in a multi layer plasma waveguide with elliptical cross section. (B. Jazi & A. R. Niknam & A. Abdoli-Arani: IEEE: Transaction on Plasma Science 2011)

25)About excitation of electromagnetics waves by elliptical relativistic modulated electron beam in a cylindrical plasma column with elliptical cross section(B. Jazi & A. Abdoli-Arani, IEEE: Transaction on Plasma Science,2012)

26)About excitation of surface plasma waves by elliptical relativistic electron beam in a magnetized dusty plasma column with elliptical cross section(A. Abdoli-Arani & B. Jazi, : AIP, Physics of plasmas , 2012)

27)Scattering an elliptical cylinder plasma for the electromagnetic waves with the wavelength of much greater than the dimensions of the plasma cross section(A. Abdoli-Arani , R.Ramezani-Arani, , B. Jazi , S.Golharani , Talor & Francis , Waves in Random and Complex Media,2012)

28) Analysis of the reflection of electromagnetic waves in an unsteady moving magnetized plasma slab (Z. Rahmani , B. Jazi , B. Shokri , Talor & Francis , Waves in Random and Complex Media,2012)

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32)Acceleration and dynamics of an electron in the degenerate and magnetized plasma elliptical waveguide (A. Abdoli-Arani, B. Jazi ,B. Shokri AIP, Physics of plasmas , 2013)

33)Total transparency of a two-moving-magnetized-plasma-layer structure, (Z. Rahmani , B. Jazi ,B. Shokri, Elsevier, Physics letters A, 2013)

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- beam (TAMRREB)with dielectric rod (B.Jazi, A. Shekari-Firouzjaei , S. Golharani, IEEE: Transaction on Antennas & Propagation, 2013)
- 35)Effect of relativistic elliptical beam modulation on excitation of surface plasma waves in a magnetized dusty plasma column with elliptical cross section(A.Abdoli-Arani-B. Jazi, Talor & Francis , Waves in Random and Complex Media,2013)
- 36)Interference simulation in a cold collisionless moving magnetized plasma slab (Z. Rahmani, B. Jazi & A. Abdoli-Arani. Talor & Francis . Waves in Random and Complex Media,2013)
- 37)Analysis of long wavelength electromagnetic scattering by a magnetized cold plasma prolate spheroid (Y. Ahmadizadeh , B. Jazi & A. Abdoli-Arani, Talor & Francis , Waves in Random and Complex Media,2013)
- 38)Electromagnetic wave scattering fro-m a magnetized plasma column includina a thin annular magnetized relativistic rotating electron beam (TAMRREB)** (B. Jazi & A. Shekari-Firouzjaei, Talor & Francis , Waves in Random and Complex Media,2013)
- 39)Long plasma column with a non-coaxial dielectric rod irradiated by an electromagnetic wave (B. Jazi, S. Golharani and E. Heidari-Semiromi, IEEE: Transaction on Plasma Science, . 2014)
- 40)Energy distribution along the focal axis of a metallic cylindrical parabolic reflector covered with a plasma layer(B. Jazi, B. Davoudi, M. R. Khajehmirzaei and A. R. Niknam, IEEE: Transaction on Plasma Science. 2014)
- 41)Theoretical investigation of resonance frequencies in long wavelength electromagnetic wave scattering process fro-m plasma prolate and oblate spheroids placed in a dielectric layer(Y. Ahmadizadeh, B. Jazi and A. Abdoli-Arani ,Talor & Francis , Waves in Random and Complex Media. 2014)
- 42) The role of resonance frequency of the plasmons in electromagnetic wave scattering process fro-m a dielectric covered metallic rod placed in a plasma antenna(B. Jazi, F. Sadeghi-Nia and Z. Rahmani, Springer, Plasmonics, 2014)
- 43) The response of a rotating magnetized cold plasma prolate spheroid in presence of a long wavelength electromagnetic wave(Y. Ahmadizadeh, B. Jazi, and A. Abdoli-Arani,, IEEE: Transaction on Plasma Science, 2014)
- 44)Electromagnetic modeling of the energy distribution of a metallic cylindrical parabolic reflector covered with a magnetized plasma layer(A. R. Niknam, M. R. Khajehmirzaei, B. Davoudi-Rahaghi, Z. Rahmani, B. Jazi, and A. Abdoli-Arani, AIP, Physics of plasmas , 2014)
- 45)Terahertz electromagnetic wave generation and amplification by an electron beam in the elliptical plasma waveguides with dielectric rod (Z. Rahmani, B. Jazi &E. Heidari-Semiromi, AIP, Physics of plasmas , 2014)
- 46)Magnetic field effects on resonance frequency of the plasmons in electromagnetic wave scattering process F-rom a dielectric covered metallic rod placed in a plasma antenna(B. Jazi, Z. Rahmani F. Sadeghi-Nia and H. Shabani, Springer, Plasmonics, 2014)
- 47)Scattering fr-om an eccentric system, including a dielectric rod placed in a thin annular magnetized relativistic rotating electron beam (TAMRREB)(B. Jazi , S. Golharani ,Z. Rahmani .Talor & Francis , Waves in Random and Complex Media. 2015)
- 48)A theoretical study of hot plasma spheroids in the presence of low frequency electromagnetic waves (Y. Ahmadizadeh, B. Jazi , S.Barjesteh ,Talor & Francis , Waves in Random and Complex Media. 2016)
- 49)The plasma background effect on time growth rate of THz hybrid modes in an elliptical metallic wave guide with two electron beams as energy source(S. Safari, B. Jazi, IEEE: Transaction on Plasma Science, 2016)
- 50)Different roles of electron beam in two stream instability in an elliptical waveguide for generation and amplification of THz electromagnetic waves(S. Safari, B. Jazi, S. Jahanbakht, , AIP, Physics of plasmas , 2016)
- 51)Theoretical modeling of average force acted on nano plasma spheres in presence of radiation of long wavelength point source(Z. Hajijamali-Arani,B. Jazi, and S. Jahanbakht, Springer , Plasmonics, 2016)
- 52)Analytical formulation for the dielectric tensor and field equations of the inhomogeneous drift plasma cylinder in rotating magnetic field(Z. Hajijamali-Arani,B. Jazi,, AIP, Physics of plasmas, 2017)
- 53)The exists of two electron beams in a Cherenkov maser, and its di-ferent behavior for generation and amplification of THz electromagnetic waves(Z. Hajijamali-Arani,B. Jazi,, Springer,,The European Physical Journal Plus, 2017)
- 54) Finite magneto-static field effect on the excitation of THz hybrid modes in an elliptical metallic plasma waveguide with two energy sources(S. Safari,B. Jazi,, AIP, Physics of plasmas, 2017)
- 55)A mathematical description for the scattering phenomena of plane wave elliptical plasma antenna located in oblique static magnetic field(S. Safarii,B. Jazi,, Springer,,The European

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- 56)The classical and theoretical simulation for dominant radiated frequencies of plasma nanowire in presence of a long monopole antenna with long wavelength radiation(S. Safari,B. Jazi,, AIP, Journal of Applied Physics, 2017)
- 57)The role of terahertz surface plasmons in the scattering pattern of electromagnetic waves in an unstable elliptical plasma antenna(S. Safarii,B. Jazi,, AIP, Physics of plasmas, 2017)
- 58) Modeling of a bimetallic eccentric cylindrical plasma waveguide based on a transmission line for TEM-mode (S. Golharani, B. Jazi, Sajad Jahanbakht & A. Moeini-Nashal,Taylor & Francis , Waves in Random and Complex Media, 2017)
- 59) A Theoretical Description for Elliptical Plasma Antenna Response in Presence of Terahertz Electromagnetic Plane Wave Based on Surface Plasmon Concept (S. Safarii,B. Jazi,, SPRINGER, Plasmonics, 2017)
- 60)An electromagnetic description for collisional drift thermal plasmas in presence of rotating magnetic field (Z. Hajijamali-Arani,B. Jazi,, Springer,The European Physical Journal Plus, 2017)
- 61)About background plasma effects on excitation and generation of the waves in a cylindrical metallic waveguide with anisotropic dielectric rod(S. Zahedi,B. Jazi,Z. Rahmani, AIP, Physics of plasmas, 2017)
- 62) The Effects of a Transverse Anisotropy DielectricRod in Excitation and Amplification Phenomenaof Hybrid Electromagnetic Waves ina Cylindrical Metallic Waveguide , Zahedi, Saeed; Jazi, Bahram; Rahmani, Zeinab; Kaabomeir, Shima IEEE: Transaction on Plasma Science, 2018)
- 63)A description on plasma background effect in growth rate of THz waves in a metallic cylindrical waveguide, including a dielectric tube and two current sources (Z. Hajijamali-Arani,B. Jazi,, Springer,The Indian Journal of Physics, 2018)
- 64)Terahertz radiation generation through the nonlinear interaction of Hermite and LaguerreGaussian laser beams with collisional plasma: field profileoptimization(S. Safari,A.R. Niknam, F. Jahangiri and B. Jazi,, AIP, Journal of Applied Physics, 2018)
- 65)Time growth rate optimization of terahertz electromagnetic wave generation with converting occupied plasma region from annular plasma to filled plasma in core, in an elliptical Cherenkov maser with two energy sources(S. Safari, B. Jazi, Springer, Pramana, Journal of Physics, 2018)
- 66)The infrared (far terahertz) generation by nonlinear interactions of two visible laser beams in a metallic background: infrared surface plasmon effect(S. Safari,B. Jazi, Springer , Plasmonics, 2018)
- 67)About generation of terahertz radiation due to the nonlinear interaction of Gaussian and Hermite-cosh-Gaussian laser beams in collisional plasma background: optimization and field profile controlling(S. Safari, B. Jazi, IEEE: Transaction on Plasma Science, 2018)
- 68) The dependence of resonance frequency to landing angle in reciprocal scattering phenomena of the waves from an elliptical plasma dielectric antenna (S. Golharani,Z. Rahmani, B. Jazi, IEEE: Transaction on Plasma Science, 2019)
- 69)The influence of static magnetic field on nonlinear response of a plasma background to presence of two laser beams with different profiles (Hermite and Laguerre Gaussian)(S Safari, B Jazi, A R Niknam, F Jahangiri, IOP , Laser Physics, 2019)
- 70) A theoretical study for temperature effects on dominant color in colloidal nano sphere solutions (Z. Hajijamali-Arani, B. Jazi, IOP, Physica Scripta, 2019)
- 71) About azimuthal acceleration of the electrons by azimuthal surface waves in a dielectric-lined circular waveguide with two thin annular rotating electron beams (Z. Hajijamali-Arani, B. Jazi, IEEE: Transaction on Plasma Science, 2019)
- 72) About the helix plasma antenna: Effective factors on characteristics of radiation, Mansooreh Safi, Bahram Jazi, Samaneh Safari, Taylor & Francis , Waves in Random and Complex Media,2019)
- 73)The mode generation due to the wave transmission phenomena from a loss free isotropic cylindrical metallic waveguide to the semi-bounded plasma waveguide, Samaneh Najari, Bahram Jazi, S.Sajad Jahanbakht,Taylor & Francis , Waves in Random and Complex Media,2019)

74) Theoretical investigation of the presence of the azimuthal backward waves (ABWs) and their amplification in a magnetized plasma waveguide with two annular rotating energy sources beams (Z. Hajijamali-Arani, B. Jazi, Springer, The European Physical Journal D, 2020)

75) The heating phenomenon of a plasma column by electromagnetic wave injection from a semi-bounded waveguide(S. Najari, B. Jazi, Elsevier, Optik, 2020)

76) Plasma covered long cylindrical non-isotropic dielectric lenses for targeted control of energy distribution (S. Golharani, E. Heidari-Semiromi, B. Jazi, Z. Rahmani, Springer, The European Physical Journal Plus, 2020)

77) The role of the filamented multi-electron beams on electron azimuthal acceleration in a plasma waveguide,(Z. Hajijamali-Arani, B. Jazi, Elsevier, Optik, 2020)

78) The description of mode matching method, in electromagnetic wave transmission from a loss free semi-bounded waveguide to the plasma waveguide(S. Najari, B. Jazi,, Springer, The European Physical Journal Plus, 2020)

تولید مد های جدید در فرآیند عبور امواج از میان دو موجبر نیمه کراندا ربا دیواره ی فلزی استوانه ای با حضور(79) یک میله ی پلاسمایی اتلافی در یکی از آنها (سمانه نجاری-بهرام جزی، دانشگاه صنعتی اصفهان مجله پژوهش فیزیک ایران 1400

80) Measurement of Plasma Current in Damavand Tokamak Using Magnetic Probes Assembly as a Discrete Rogowski Coil(Fateme Shakeri,Ardavan Kouhi, Bahram Jazi,Mahsa Moazzemi,Elsevier,Fusion Engineering and Design,2021)

81) The role of adiabatic and non-adiabatic phenomena in passing waves from a semi-bounded loss free waveguide to semi-bounded plasma waveguide,Samaneh Najari, Bahram Jazi, Springer , Indian Journal of Physics , 2021)

82) The cylindrical column lenses and reflectors made of transverse anisotropy plasma and dielectrics and their response to the presence of plane electromagnetic waves,(S. Golharani, B. Jazi, E.Heidari,Z. Rahmani, Elsevier, Optik, 2021)

83) A novel approach in heating phenomena of the drift plasmas in the presence of rotating magnetic field: Appearance of anti-Hermitian part in dielectric tensor(S. Safari, B. Jazi, Pramana – J. Phys. Springer, 2021)

84) تعمیمی برای ضرایب فرزل(عبور و انعکاس) در موجبرهای نیمه کراندار پلاسمایی و تاثیر دمای پلاسما بر آنها(سمانه نجاری-بهرام جزی-نشریه ی پژوهش سیستم های بس ذره ای- دانشگاه شهید چمران اهواز-1400

85) Simulation of Gaussian electromagnetic wave interaction and its effect on the dynamics of metallic nanosphere (repulsion or even elasticity)(F.Khosravi,B.Jazi,A.Abdoli, Springer,The European Physical Journal Plus,2022)

86) The plasma nanosphere cooling rate simulation in presence of the coherent electromagnetic waves with Gaussian profile(F.Khosravi,B.Jazi,A.Abdoli, Springer,The European Physical Journal D,2022)

87) The role of ordinary Bessel function and Hankel function in simulation of plasma valve mechanism in a loss-free metallic cylindrical waveguide(Asghar Karamian,Bahram Jazi,Samaneh Najari, Mathematics Interdisciplinary Research, 2022)

Papers in Conferences

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وضریب خودالقا(درین ارسال سیگنال بر روی آتنن پلاسمایی میله ای، دهمین کنفرانس مهندسی و فیزیک پلاسما، ۱-

۱۲۰۷۲۰۲۳، تهران.

2. اصغر کرمیان، سمانه نجاری، بهرام جزی، شبیه‌سازی عملکرد شیر پلاسمایی در مسیر یک موجبر استوانه‌ای، نهمین کنفرانس مهندسی و فیزیک پلاسمایی، ۱- گند کاووس، ۱۳۰۷۲۰۲۲.
3. مجتبی گلی پزو، فرشته جوکار کاشی، مرتضی شفیعی، بهرام جزی، بررسی اثر پلاسمای سرد اتمسفری بر غیرفعال کردن باکتریهای استافیلوکوکوس اورئوس و ای کولا، نهمین کنفرانس مهندسی و فیزیک پلاسمایی، ۱- گند کاووس، ۱۳۰۷۲۰۲۲.
4. سعیده گلهرانی دارانی، بهرام جزی، ابراهیم حیدری، زینب رحمانی نوش آبادی، فاطمه خسروی، حمید ملکی قاسمی، شبیه سازی پاسخ لنزهای استوانه‌ای طویل محافظت شده با یک لایه‌ی پلاسمایی به حضور امواج مایکروویو تخت به کمک هشتمین کنفرانس مهندسی و فیزیک پلاسمایی، ۱- مازندران، ۱۴۰۷۲۰۲۱، FEM، ۱۴۰۷۲۰۲۱، روش عددی.
5. سعیده گلهرانی دارانی، بهرام جزی، ابراهیم حیدری، زینب رحمانی نوش آبادی، فاطمه خسروی، حمید ملکی قاسمی، شبیه هشتمین کنفرانس FEM، سازی پاسخ لنزهای ستونی پلاسمایی به حضور امواج تخت مایکروویو به کمک روش عددی.
6. فاطمه خسروی، بهرام جزی، عباس عبدالی آرانی، سعیده گلهرانی دارانی، نیروی وارد بر نانوکرات پلاسمایی تحت تابش محوری پرتوهای گاوسی، هشتمین کنفرانس مهندسی و فیزیک پلاسمایی، ۱- مازندران، ۱۴۰۷۲۰۲۱.
7. فاطمه خسروی، بهرام جزی، عباس عبدالی آرانی، سعیده گلهرانی دارانی، عوامل مؤثر بر رشد و یا کاهش سرعت دمای نانوکرات پلاسمایی ناشی از اندرکنش امواج همدوس الکترومغناطیسی با پروفایل گاوسی، هشتمین کنفرانس مهندسی و فیزیک پلاسمایی، ۱- مازندران، ۱۴۰۷۲۰۲۱.
8. سمانه نجاری، بهرام جزی، فرهاد مختاریان، پیمانه ای شدن ضرائب تعیین یافته‌ی فرنل برای انتقال انرژی از یک موجبر نیمه-کراندار استوانه‌ای به یک موجبر نیمه کراندار دیگر شامل یک ستون پلاسمایی، هشتمین کنفرانس مهندسی و فیزیک پلاسمایی، ۱- مازندران، ۱۴۰۷۲۰۲۱.
9. سمانه نجاری، بهرام جزی، فرهاد مختاریان، نرخ رشد دمای ستون‌های پلاسمایی نیمه کراندار در موجبرهای نیمه کراندار از طریق ترزیق امواج الکترومغناطیسی به آن، هشتمین کنفرانس مهندسی و فیزیک پلاسمایی، ۱- مازندران، ۱۴۰۷۲۰۲۱.
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11. زینب حاجی جمالی ارانی، بهرام جزی، خواص انتشاری امواج آهسته در یک موجبر دی الکتریک ناهمسانگرد با دو چشمۀ انرژی، کنفرانس فیزیک ایران، ۱۳۹۷، ۱- قزوین، ۱۴۰۸۲۰۱۸.
12. مرتضی شفیعی، زینب حاجی جمالی ارانی، بهرام جزی، بهبد طول ستون پلاسمایی در پلاسمای جت مایکروویوی طراحی شده در فشار اتمسفری، ششمین کنفرانس مهندسی و فیزیک پلاسمایی، ۱- قزوین، ۱۴۰۷۲۰۱۸.
13. مرتضی شفیعی، زینب حاجی جمالی ارانی، بهرام جزی، بهبد طول ستون پلاسمایی در پلاسمای جت مایکروویوی طراحی شده در فشار اتمسفری، ششمین کنفرانس مهندسی و فیزیک پلاسمایی، ۱- قزوین، ۱۴۰۷۲۰۱۸.

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