



افشان شیرکوند

استادیار

محل خدمت: سازمان جهاددانشگاهی علوم پزشکی تهران



سوابق تحصیلی			
مقطع تحصیلی	سال اخذ مدرک	رشته و گرایش تحصیلی	دانشگاه
کارشناسی	۱۳۷۸	فیزیک کاربردی	الزهرای(س)
کارشناسی ارشد	۱۳۸۵	فیزیک پزشکی	دانشگاه علوم پزشکی تهران
دکترای تخصصی	۱۳۹۹	فیزیک	دانشگاه شهید بهشتی

اطلاعات استخدامی				
محل خدمت	عنوان سمت	نوع استخدام	نوع همکاری	پایه
سازمان جهاددانشگاهی علوم پزشکی تهران	عضو هیات علمی	پیمانی	تمام وقت	

سوابق اجرایی

مدیر گروه پژوهشی فتودینامیک، سازمان جهاد دانشگاهی علوم پزشکی تهران

عضو هیئت علمی سازمان جهاد دانشگاهی علوم پزشکی تهران

جوایز و تقدیر نامه ها

عضو هیئت علمی منتخب کشوری جهاد دانشگاهی -1403

پژوهشگر برتر سازمان جهاد دانشگاهی علوم پزشکی تهران- 1402 و 1403

عضو بنیاد نخبگان استان تهران- 1399

پژوهشگر برتر جوان - کنگره بین المللی فیزیک پزشکی شیراز-1390

موضوعات تدریس تخصصی

بیوفیزیک

رادیوبیولوژی/ زیست پرتوی

فیزیک و برهم کنش لیزر

فعالیت های علمی و اجرایی

عضو هیئت تحریریه فصلنامه علمی پژوهشی لیزر پزشکی
عضو داوران علمی ژورنال لیزر در علوم پزشکی
عضو داوران علمی ژورنال فیزیک پزشکی ایران
عضو داوران علمی ژورنال بین المللی فتومدیسن و لیزر سرجری
عضو کمیته علمی و اجرایی و بین المللی کنگره زخم و ترمیم بافت
عضو کمیته علمی و دبیر اجرایی سمینار بین المللی لیزر و فوتونیک زیست پزشکی

زمینه های تدریس

فیزیک پزشکی- لیزر پزشکی

عضویت در هیات تحریریه مجلات علمی و پژوهشی

عضویت در هیات تحریریه فصلنامه علمی پژوهشی لیزر پزشکی

مقالات در همایش ها

-
1. Afshan Shirkavand. Nanophotosensitizers in Photodynamic therapy. International Day of light .webinar. Tehran, Iran, May ۲۰۲۴.
 2. Afshan Shirkavand. Fundamentals of Photodynamic therapy, ۲۲nd annual congress of Iranian society of dermatology, Tehran, Iran, ۲۰۲۴, Feb.
 3. Afshan Shirkavand. Laser Physics. ۴nd international school of laser dentistry. Tehran, Iran, ۲۰۲۴, Aug.
 4. Afshan Shirkavand ,Quantitative Autofluorescence Imaging of A375 Human Melanoma Cells ,Saratov Fall Meeting SFM'23 11th International Symposium on Optics and Biophotonics ,Saratov, Russia ,Sep 2023.
 5. Afshan Shirkavand ,Light/Laser Application in Drug Delivery in Photodynamic therapy ,Saratov Fall Meeting SFM'23 12th International Symposium on Optics and Biophotonics ,SARATOVE, RUSSIA ,Sep , 2024.
 6. Afshan Shirkavand ,Experimental Study of Combination Therapy of 980nm Low-Level Laser and Electron Radiation Therapy on Non-Melanoma Human Squamous Cell Cancer (SCC) ,PBM2024 ,London, UK ,Sep , 2024.
 7. Afshan Shirkavand ,Laser Assisted Drug Delivery in therapy ,Science and Technology ,Salaleh, Oman ,Oct 2-024.
 8. Afshan Shirkavand ,Treatment response monitoring of human melanoma skin cancer using Diffuse Reflectance Spectroscopy ,Women in Biophotonics ,Jena, Germany ,Dec 2023.

مقالات در نشریات

-
1. Z Heidary, E Nahvifar, Afshan Shirkavand, E. Mohajerani, A Smart phone-based spectral imaging setup and quantifying a skin lesion model towards clinical application. Laser Medicine Journal, ۲۰۲۳.

2. Majdeh Babadi, Afshan Shirkavand, Maryam Sadat Ghorshi. Review of Photo-nanotechnology . Applications in Virology. *Laser Medicine Journal*. ۲۰۲۳
3. S M Tabaie, M Naderi, P Hemmati, Afshan Shirkavand, MH Soheilifar. Study of Proliferation of Mesenchymal Stem cells under carboxy therapy and low-level laser. *Laser Medicine Journal*. ۲۰۲۳
4. M Ghorashi, Afshan Shirkavand, Sonocatalytic degradation of antibiotics by nanoparticles. *Laser Medicine Journal*. ۲۰۲۳
5. Fashtami, M. H. و Afshan Shirkavand, S. Farivar, E. Mohajerani, L. Ataie Ghazimoradi. Monitoring the response of skin Melanoma cell line (A۳۷۵) to treatment with vemurafenib: A Pilot in-vitro Optical spectroscopic study. *Photomedicine and laser surgery journal*. ۲۰۲۰
6. Afshan Shirkavand, N. Zand, L. Ataie Fashtami. Photobiomodulation Therapy in COVID-19. *Laser Medicine Journal*. ۲۰۲۰
7. Afshan Shirkavand, L. Mohammadzadeh, M.E. Zibaie, N Zand, the induced heat modeling using COMSOL software in nerve due to Nd: YAG laser irradiation. *Laser Medicine Journal*. ۲۰۲۰
8. Afshan Shirkavand, M. Akhavan Tavakkoli. A review on phototherapy in wound healing. *Laser Medicine Journal*. ۲۰۲۰
9. Afshan Shirkavand, A Rahimi, M Babadi. Laser applications in oral cancer diseases. *Laser Medicine Journal*. ۲۰۱۹
10. Afshan Shirkavand , L. Ataie Fashtami, Z. Korourian. Applied Lasers in Acne Scar Treatment: A Brief Review. *Laser Medicine Journal*. ۲۰۱۹
11. Afshan. Shirkavand, P. Mokhtari Hesari, S. Akhlaghpour, A. Azarkeivan, M. Hashemieh. Renal iron load estimation in Thalassemia Patients using T۲* Magnetic Resonance Imaging. *International Journal of Medical Research & Health Sciences*. ۲۰۱۹
12. F Habibi, H Mehrzad, E Mohajerani, Afshan Shirkavand. Super plasmonic visible for biosensing. *Laser Medicine Journal*. ۲۰۱۹
13. Afshan Shirkavand, M. Babadi, E. Najafzadeh. Laser in medical sciences: Review from past to now. *Laser Medicine Journal*. ۲۰۱۹
14. P. Menshari, E. Mohajerani, Afshan Shirkavand, M Zarabi. Quantitative determination of Hemoglobin Spectral absorption coefficient due to Optical Mechanical Clearing of Skin in Diffuse Reflective Spectroscopy Method. *Laser Medicine Journal*. ۲۰۱۹
15. Afshan Shirkavand, S. Farivar, Optogenetics, importance and limitations. *Laser Medicine Journal*. ۲۰۱۹
16. Fashtami, N. Zand, S.B Jalali, Afshan Shirkavand. Study the ۵۸۵ nm و A. Soroosh, L Ataie Pulsed Dye laser prophylactic efficacy in scar reduction after thyroidectomy. *Laser Medicine Journal*. ۲۰۱۸
17. M. Babadi, E. Mohajerani, Afshan Shirkavand, L. Ataie Fashtami, N. Zand. Application of diffuse reflectance spectroscopy in quantitative evaluation of the skin erythema following laser hair removal. *Laser Medicine Journal*. ۲۰۱۷
18. N. Zand, Afshan Shirkavand. Laser assisted skin healing. *Dermatology and Cosmetic*. ۲۰۱۵
19. Fashtami, N. Zand. Importance of laser safety in laser medical applications. *Laser Medicine Journal*. ۲۰۱۵
20. Afshan Shirkavand, M. E. Zibaie, Applications of Graphene Nano-sensor in DNA sequencing. *Laser Medicine Journal*. ۲۰۱۵
21. H. Shoughi, M. Hejazi, M. A. Oghabian, R. Massoudi, H. Mohammadreza, Afshan Shirkavand. Evaluation of reflection optical imaging characteristics using fluorescence with near infrared wavelength at different depths of tissue equivalent phantom. *Laser Medicine Journal*. ۲۰۰۸
22. M Hakimi, R Shiari, Afshan Shirkavand, S Farivar, M Razzaghi, Expression of Apoptotic Genes Induced by Flaxseed Extract in Human Prostate Cancer Cell Line, *J Medicinal plant*, 2024
23. A Shorakaie, E Nahvifard, Afshan Shirkavand, L. Ataie Fashtami, E Mohajerani, CO2 Fractional

Laser Induced Skin Micro-Tunnel Thermal Damage Patterns: A Simulation Study, *Journal of Lasers Med Sci*, 2024

Afshan Shirkavand, A Azarkeivan, M Akhavan Tavakkoli, M Magsoudlou, A Arab Khazaeli, M Amin, Epidemicologic, Study of COVID-19 in Iranian Beta-Thalassemia Patients According to Disease Severity, *Arch Clin Infect Di*, 2023

Afshan Shirkavand, L Ataie Fashtami, A Azarkeivan, Z Zahedi, Dermatopathological Drug Reaction in Thalassemia Major: A Case Report and a Brief Review, *Reviews in Clinical Medicine*, 2023

Afshan Shirkavand, M Babadi, L. Ataie Fashtami, E Mohajerani, Spectroscopy in Diagnosis and Monitoring Breast Cancers: A Technical Review, *clinical spectroscopy*, 2023

Afshan Shirkavand, M Akhavan Tavakoli, Z Ebrahimpour, A Brief Review of Low- Level Light Therapy in Depression Disorder: LLLT in depression, *Journal of Lasers Med Sci*, 2023

N Zand, S Najafi, M Fateh, J Sadighi, P Mansouri, M Farhadi, L Ataie, & Fashtami, A Nikoofar, H Mahdavi, Afshan Shirkavand, Non-thermal CO₂ Laser Therapy (NTCLT): A Novel Photobiomodulative Approach for Immediate Pain Relief of Patchy Oral Mucositis Due to Chemotherapy of Solid Tumors: NTCLT/ pain relief of COM., *Journal of Lasers Med Sci*, 2023

SM Tabaie, Afshan Shirkavand, P Mansouri, S Farshi, Evaluation of the effects of Carboxytherapy in treatment of periorbital dark circles, *Cosmetic journal of Dermatology*, 2023

Afshan Shirkavand, Sh Akhlaghpour, A Azarkeivan, Z Razzaghi, M Karimi, Evaluation of Adrenal Glands and Kidneys Using MRI T2* in Iranian Thalassemia Patients, *Reviews in Clinical Medicine*, 2023

Afshan Shirkavand, M Hakimi, G Geraily, L Ataie Fashtami, MH Soheilifar, SM Tabaie, Near infrared low-level laser effect on electron radiation therapy of non-melanoma human squamous cell cancer: An in-vitro study, *Radiation Physics and Chemistry*, 2023

P Mansouri, M Tabaie, M Naderi, K Kebriti, G Esmaeeli Djavid, Afshan Shirkavand, Systemic Photodynamic Therapy with Chlorine e6 as a Photosensitizer for the Treatment of nodular BCC: A Case Report, *Journal of Lasers Med Sci*, 2022

MH Soheilifar, N Masoudi-Khoram, Afshan Shirkavand, S Ghorbanifar, non-coding RNAs in photoaging-related mechanisms: a new paradigm in skin health, *Biogerontology*, 2022

M Karimi, T Zarei, S Haghpanah, A Azarkeivan, M Naderi, S Matin, A Bazrafshan, Z Zahedi, Afshan Shirkavand, P pishdad, V De Sancti, Efficacy and safety of Sino pharm vaccine for sars-cov-2 and breakthrough infections in iranian patients with hemoglobinopathies: a preliminary report, *Mediterranean Journal of Hematology and Infectious Diseases*, 2022

Afshan Shirkavand, F. Jahangiri, E. Mohajerani, V.V Tuchin, a review on terahertz non-destructive applications for wound and diabetic foot screening, *Quantum optics and photonics*, 2022

E Shojaei, S Zare, Afshan Shirkavand, E Eslami, S Fathollah, P Mansouri, Biophysical evaluation of treating Adipose Tissue-Derived Stem Cells using Non-Thermal Atmospheric Pressure Plasma, *Scientific Reports*, 2022

E. Allahdadi, Afshan Shirkavand, E. Mohajerani, P. Mansouri, A. Almasi, S Sherafat, A Pilot Study of Relation Between Skin Response and Pulsed Dye Laser Energy in Treatment of Hemangioma Based on the Diffusion Reflectance Spectroscopy., *Cosmetic journal of Dermatology*, 2022

S. Afzali, Afshan Shirkavand, S. Farivar, S Shiyari, Human Cell Receptors and Downstream Cascades: A Review of Molecular Aspects and Potential Therapeutic Targets in COVID-19, *Archives of Pediatric Infectious Diseases*, 2021

Afshan Shirkavand, Nasrin Zand, Parvin Mansouri, Leila Ataie Fashtami, Mohsen Fateh, The Immediate pain-relieving effects of non-thermal CO₂ Laser Therapy (NTCLT) on oral aphthous ulcers of behcet's disease: a case report, *Journal of Lasers Med Sci*, 2021

MR Razzaghi, MH Ghazimoradi, Sh Afzali, E Kamani, E Mohajerani, Afshan Shirkavand, Shirin

- Farivar, Effect of a Low-Level Laser on Liposomal Doxorubicin Efficacy in a Melanoma Cell Line, *Journal of Lasers Med Sci*, 2021
- Afshan Shirkavand, E. Mohajerani, S. Farivar, L. Ataie, & Fashtami, M.H. .41
- Ghazimoradi, Quantitative autofluorescence of A375 human melanoma cell samples: A pilot imaging study, *Journal of Lasers Med Sci*, 2020
- M. Karimi, A. Azarkeivan, S. Haghpanah, Z. Zahedi, T. Zarei, Akhavan Tavakkoli, A. .42
- Bazrafshan, Afshan Shirkavand, V. Desanctis, Prevalence and Mortality due to Outbreak of Novel Coronavirus Disease (COVID-19) in β -Thalassemia: The Nationwide Iranian Experience, *The British Journal of Hematology*, 2020
- M. Karimi, S. Haghpanah, T. Zarei, A. Azarkeivan, Afshan Shirkavand, S. Matin, M. Akhavan Tavakkoli, Z. Zahedi, V. De Sanctis, Prevalence and severity of Coronavirus disease 2019 (COVID-19) in Transfusion Dependent and Non-Transfusion Dependent β -thalassemia patients and effects of associated comorbidities: An Iranian nationwide study, *Acta Biomed*, 2020
- Afshan Shirkavand, S. Farivar, E. Mohajerani, L. Ataie, & Fashtami, M. Hossein .44
- Ghazimoradi, Non-invasive reflectance spectroscopy for normal and cancerous skin cells refractive index determination: An in-vitro study, *Laser and Surgery in medicine*, 2019
- M. Babadi, E. Mohajerani, Afshan Shirkavand, L. Ataie, & Fashtami, N. Zand, Quantitative .45
- analysis of skin erythema due to laser hair removal: A diffuse optical spectroscopy analysis, *Journal of Lasers Med Sci*, 2019
- N. Zand, Afshan Shirkavand, Letter regarding. Effect of laser on pain relief and wound healing .46
- of recurrent aphthous stomatitis: a systematic review, *Lasers in Med Sci*, 2017
- Afshan Shirkavand, S. Sarkar, L. Ataie, & Fashtami, H. Mohammadreza, Detection of .47
- Melanoma Skin Cancer by Elastic Scattering Spectrums: A Proposed Classification Method, *Iranian journal of medical physics*, 2017
- N. Zand, P. Mansouri, M. Fateh, L. Ataie, & Fashtami, S. Rezaee Khiabanloo, F. Safar, R. .48
- Chalangari, K. Martits, Afshan Shirkavand, Relieving Pain in Oral Lesions of Pemphigus Vulgaris Using the Non-ablative, non-thermal, CO₂ Laser Therapy (NTCLT): Preliminary Results of a Novel Approach, *J Lasers Med Sci*, 2017
- A. Azarkeivan, M. Hashemieh, Afshan Shirkavand, K. Sheibani, Correlation between Heart, .49
- Liver and Pancreas Hemosiderosis Measured by MRI T₂* among Thalassemia Major Patients from Iran, *Archives of Iranian medicine*, 2016
- A. Azarkeivan, M. Hashemieh, S. Akhlaghpour, A. Shirkavand, M. Yaseri, K. Sheibani, Relation .50
- between serum ferritin and liver and heart MRI T₂* in beta thalassaemia major patients, *East Mediterr Health J*, 2013
- Nasrin Zand 1, Mohsen Fateh, Leila Ataie, Fashtami, Gholamreza Esmaeeli Djavid, Seyyed, .51
- Mostafa Fatemi, Afshan Shirkavand, Promoting Wound Healing in Minor Recurrent Aphthous Stomatitis by Non-Thermal, Non-Ablative, Photomedicine and laser surgery journal, 2012
- Hashemieh M, Akhlaghpour S, Azarkeivan A, Shirkavand A, Sheibani K, Partial radiofrequency .52
- ablation of the spleen in thalassemia, *Diagn Interv Radiol*, 2012
- Hashemieh M, Azarkeivan A, Akhlaghpour S, Shirkavand A, Sheibani K, T₂-star (T₂*) .53
- magnetic resonance imaging for assessment of kidney iron overload in thalassemia patients, *Arch Iran Med*, 2012
- Afshan Shirkavand, L. Ataie, & Fashtami, S. Sarkar, M. R. Alinaghizadeh, M. Fateh, Gh. Javid, .54
- N. Zand, Thermal damage patterns of diode hair removal lasers according to various skin types and hair densities and colors: A simulation study, *Photomedicine and laser surgery journal*, 2012
- L. Ataie, & Fashtami, Afshan Shirkavand, S. Sarkar, M. R. Alinaghizadeh, M. Hejazi, M. Fateh, .55
- Gh. Djavid, N. Zand, H. Mohammadreza, Simulation of Heat Distribution and Thermal Damage Patterns of Diode Hair Removal lasers: An Applicable Method for Optimizing, *Photomedicine and laser surgery journal*, 2011
- S. Akhlaghpour, M. Alinaghizadeh, A. Arjmand Shabestari, A.H. Jafari, Afshan Shirkavand, .56

„Cardiac and Liver T2* Measurement in 2000 Thalassemia Patients, Iranian Journal of Radiology, 2009

Afshan Shirkavand¹, Saeed Sarkar^{1,2}, Marjaneh Hejazi¹, Leila Ataie, & Fashtami^{3,4}, and Mohammad Reza Alinaghizadeh⁵, A new Monte Carlo code for absorption simulation of laser-skin tissue interaction, CHINESE OPTICS LETTERS, pp. 238-240, 2007

Afshan. Shirkavand, S. Sarkar, M. Hejazi, L. Ataie, & Fashtami, M. R. Alinaghizadeh, Evaluation of LITCIT software for thermal simulation of superficial lasers like hair removal Lasers, Indian Journal of Dermatology, pp. 145-149, 2007

پایان نامه‌ها

1. Gene expression assessment of Optogenetics stimulation of semi neural Mesenchymal stem cell, Shahid Beheshti University, Mohammad Amin Fereydounian, ۱۴۰۳/۶/۲۴

2. Modeling the effect of laser parameters on photothermal skin damage to optimize the laser-assisted drug delivery process, Ali Shorakaie, ۱۴۰۲/۶/۱۵

3. Study and quantification of Tissue specifications by fluorescence spectroscopy for diagnostic application, Ziba Heydari, ۱۴۰۲/۶/۱۵

4. Optogenetics stimulation of semi neural Mesenchymal stem cell, Shahriyar Bourbour, ۱۴۰۲/۴/۵

کتاب‌ها

1. نانوتکنولوژی در پزشکی مدرن ترمیم و تشخیص نوری

2. لیزر کم توان در دندانپزشکی

3. فرهنگ اصطلاحات تالاسمی

4. ژن درمانی در تالاسمی

5. پیوند مغز استخوان

6. همه چیز درباره تالاسمی برای کودکان

7. مفاهیم و آزمایشات فیزیک نور برای دانش آموزان و پژوهشگران

8. درباره تالاسمی: آلفا- بتا - سیکل سل