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Education

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Publication

Journal papers:

- 1- Mohammad Salar Ghasemi Nasab , Hanieh Niroomand-Oscuii * , Hossein Bazmara , Majid Soltani, Multi-scale model of lumen formation via inverse membrane blebbing mechanism during sprouting angiogenesis process, *Journal of Theoretical Biology* 556, 111312, 2023.
- 2- N Sarrafzadeh Ghadimi, F Ghalichi, H Niroomand-Oscuii, N Fatourae, Study of Leaflet Radial Curve Effect on Polymeric Valve Performance By Finite Element Method, 2022, *Iranian Journal of Biomedical Engineering* 15 (4), 351-360.
- 3- Mohammad Salar Ghasemi Nasab , Hanieh Niroomand-Oscuii * , Hossein Bazmara , Majid Soltani, Morphogenetic Mechanisms of Endothelial Cells During Lumen Formation in Sprouting Angiogenesis, *Multidisciplinary Cancer Investigation*, April 2022, Volume 6, Issue 2; DOI: 10.30699/mci.6.2.523-1.
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- 6- Kohyar Yazdanpanh-Ardakani And Hanieh Niroomand-Oscuii, Computational Study On The Performance Of A Centrifugal Lvad With The Impeller Designed By Industrial Method: Proposing

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 - 9- Seyed Hamidreza Attaran; Hanieh Niroomand-Oscuii, Reflection behavior of the porous tube boundary condition for FSI simulations of the truncated vascular network, *Progress in Computational Fluid Dynamics*, 2020, 20
 - 10- رضا صاحبی (د. ارشد); اسکویی هانیه نیرومند (راهنما); کهیار یزدانپناه - فصلنامه علمی پژوهشی مهندسی پزشکی زیستی, , ۲۰۲۰ ۱۳
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 - 11- Yazdanpanah-Ardakani K, Niroomand-Oskui H. Designing Centrifugal Impeller of a Left Ventricular Assist Pump using Point-by-Point Method. *Modares Mechanical Engineering*. 20 (2) :371-380, 2020.
 - 12- Pejman Shojaee, **Hanieh Niroomand-Oscuii**, A comparative study of drug transport between the homogeneous and vasculature solid tumor, December 2019, *Journal of Porous Media*, DOI:10.1615/JPorMedia.2019026047.
 - 13- Pejman Shojaee, **Hanieh Niroomand-Oscuii**, Mostafa Sefidgar, Lida Alinezhad, Effect of nanoparticle size, magnetic intensity, and tumor distance on the distribution of the magnetic nanoparticles in a heterogeneous tumor microenvironment, <https://doi.org/10.1016/j.jmmm.2019.166089>.
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 - 27- Erfan Nammakie, **Hanieh Niroomand-Oscuii**, Mojtaba Koochaki, Farzan Ghalichi, Computational fluid dynamics-based study of possibility of Generating pulsatile blood flow via a continuous-flow VAD, *Med Biol Eng Comput*, 2017 Jan;55(1):167-178.
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- 39- Mojtaba Koochaki & **Hanieh Niroomand-Oscuii** , A new design and computational fluid dynamics study of an implantable axial blood pump, *Australas Phys Eng Sci Med* 2013, DOI 10.1007/s13246-013-0225-x
- ۴۰- حامد خالص، **هانیه نیرومند اسکوئی**، فرزانه قالیچی ، بررسی بازسازی دیواره شریان الاستیک تحت تاثیر بارهای استاتیکی و دینامیکی، *مجله مهندسی پزشکی زیستی*، شماره ۲، دوره پنجم، تابستان ۱۳۹۰، ۱۴۳-۱۵۰
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- ۴۴- **هانیه نیرومند اسکوئی**، فرزانه قالیچی، محمد تفضلی شادپور، بررسی تغییرات خواص بیومکانیکی بازسازی شریان براکیال با تغییر سن با استفاده از روش اندرکنش سیال-جامد، *فصلنامه مهندسی پزشکی*، ویژه نامه بیومکانیک، دوره دوم، شماره اول، بهار ۱۳۸۷، صفحه ۱-۸.
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- ۴۷- **هانیه نیرومند اسکوئی**، محمد تفضلی شادپور، فرزانه قالیچی، مطالعه اثر الاستیسیته شریان بر الگوی تنش برشی دیواره و پاسخ سلول های اندوتلیال، *مجله دانشگاه علوم پزشکی تبریز*، دوره ۳۰ شماره ۲ تابستان ۱۳۸۷ صفحات ۱۳۲-۱۲۷.
- 48- **H. Niroomand oscuii**, M. Tafazzoli Shadpour and Farzan Ghalichi, Biomechanical Analysis of Wall Remodeling in Elastic Arteries with Application of Fluid-Solid Interaction Methods, *Journal of Mechanics in Medicine and Biology*, Vol. 7, No. 4 (2007) 433-447.

Conference papers:

- 1- Nima Sarrafzadeh-Ghadimi, Farzan Ghalichi, Hanieh Niroomand-Oscuii, Nasser Fatouraei, Effect of Leaflets Radial and Circumferential Curves on Polymeric Aortic Valve Performance. A Finite Element Study, 5th International Iranian Conference on Biomedical Engineering, National and International Conference on Biomedical Engineering, 14-16 December 2011, Tehran, Iran.
- 2- غلامرضا محمدی خونسارکی، هانیه نیرومند اسکویی، مدل سازی رفتار اسکلت سلولی به کمک ساختارهای تنسگریتی شش و دوازده میله ای برای آزمایش AFM و بررسی سفتی داربست، اولین کنفرانس بین المللی دستاوردهای نوین پژوهشی در مکانیک، مکترونیک و بیومکانیک، خرداد ۹۵- دانشگاه امیر کبیر.
- 3- N. Meghdadi, H. Niroomand-Oscuii, M. Soltani, F. Ghalichi, M. Pourgolmohammad, Brain Tumor Growth Simulation: Model Validation through Uncertainty Quantification, IREC2016, 26-28 April 2016, Sahand University of Technology, Tabriz, Iran.
- 4- سید حمید رضا عطاران، هانیه نیرومند اسکویی، بررسی اثر پارامترهای لوله، ۲۴ امین همایش سالانه بین المللی مهندسی مکانیک ایران، اردیبهشت ۹۵، یزد.
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- 6- غلامرضا محمدی خونسارکی، هانیه نیرومند اسکویی، محسن ربانی، مروری بر ساختارهای مکانیکی ارائه شده برای تخمین رفتار مکانیکی سلولهای زنده،
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- 8- Arezoo Amirpourabasi, Hanieh Niroomand-Oscuii, Mohammad Pourgol-Mohammad, Determination of Success Criteria in Transient Thermal Stresses: A Biomechanical Case Study of Cell Cryopreservation, IREC2014 4-5 February 2014, Mechanical Engineering Department and New Technologies Research Center, Amirkabir University of Technology, Tehran, Iran.
- 9- نرگس مقدادی، هانیه نیرومند اسکویی، شبیه سازی عددی اثر جریان سوزن بر پارامترهای همودینامیکی جریان داخل گرفت همودیالیز، بیست و یکمین همایش سالانه بین المللی مهندسی مکانیک ایران، ISME2013، دانشکده مهندسی مکانیک، دانشگاه صنعتی خواجه نصیرالدین طوسی، تهران، ایران، ۱۷ لغایت ۱۹ اردیبهشت ۱۳۹۲.
- 10- Erfan Abdollahzadeh, Hanieh Niroomand Oscuii, Habib Badri Ghavifekr, Sajjad Nasiri Khalil Abad, Arash Sedghi Ghadikolaei, Numerical Simulation of Droplet Movement Based on Electrowetting Effect, 21st Annual International Conference on Mechanical Engineering- ISME2013 7-9 May, 2013, School of Mechanical Eng., K.N.Toosi University, Tehran, Iran.
- 11- هانیه نیرومند اسکویی، محمد نیکدست، عسگر اشرفی. مقایسه پاسخ حرارتی پوست به تابش لیزر با بهره گیری از مدل های انتقال حرارت زیستی، بیست و یکمین همایش سالانه بین المللی مهندسی مکانیک ایران، ISME2013، دانشکده مهندسی مکانیک، دانشگاه صنعتی خواجه نصیرالدین طوسی، تهران، ایران، ۱۷ لغایت ۱۹ اردیبهشت ۱۳۹۲.
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- 13- Hajar Hassani Ardekani, Farzan Ghalichi, Hanieh Niroomand Oskuii, Velocity Comparison Between Doppler Ultrasound Velocitometry And Numerical Simulation Of Blood Flow Through Internal Carotid Artery, ISB 2011, the 3th to the 7th of July 2011, Brussels.
- 14- Mr.Mohammad Haddadi, Dr. Hanieh Niroomand Oscuii and Dr. Farzan Ghalichi, Mr.Cyrus Raghaghi, An Investigation On Tip Clearance Effect On Pvad's Performance, ISB 2011, the 3th to the 7th of July 2011, Brussels.
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- 16- Hessam Noori, Davood Jalali-Vahid and **Hanieh Niroomand Oscuii**, Analysis Of Elastohydrodynamic Lubrication Under Squeeze Film Motion In Artificial Hip Joint Using Fluid-Structure Interaction Method, ISB 2011, the 3th to the 7th of July 2011, Brussels.
- 17- Zahra Nabizadeh Farashah, **Hanieh Niroomand Oscuii** and Farzan Ghalichi, Numerical Simulation Effect Of Femoral Bifurcation Angle On Hemodynamics With Applying Structure Interaction Method, ISB 2011, the 3th to the 7th of July 2011, Brussels.
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- 19- Mohammad Sarmast, **Hanieh Niroomand Oscuii**, Farzan Ghalichi and Ehsan Samiei, Numerical Investigation Of The Effects Of Anastomosis Angle On Hemodynamic Alterations Within A Hemodialysis Vascular Access Graft, 13th Annual & 2nd International Fluid Dynamics conference Fd2010-26-28 Oct. Shiraz University, Shiraz, Iran.
- 20- Soheil Bajelan, Mahmood Reza Azghani, **Hanieh Niroomand Oscuii**, A Novel Design of Sit-to-stand Assistive Device for Elderly and Infirm People, 6th World Congress of Biomechanics, 1-6 August 2010, Singapore Suntec Convention Centre.
- 21- Mohammad Haddadi, **Hanieh Niroomand Oscuii**, Farzan Ghalichi, Numerical Optimization of Flow Path in a Typical Axial Heart Pump, 6th World Congress of Biomechanics, 1-6 August 2010, Singapore Suntec Convention Centre.
- 22- Zahra Nabizadeh Farashah, **Hanieh Niroomand Oscuii**, Farzan Ghalichi, Simulation Of Hemodynamics Influence Of Geometrical Dissimilarities In Cardiovascular Bifurcations, 6th World Congress of Biomechanics, 1-6 August 2010, Singapore Suntec Convention Centre.
- 23- Naser Asgari, Farzan Ghalichi, **Hanieh Niroomand Oscuii**, Investigation the Influence of Elastic Arterial Wall on Blood Flow Parameters in Critical Stenosed ICA Considering Fluid-Structure Interaction, 6th World Congress of Biomechanics, 1-6 August 2010, Singapore Suntec Convention Centre.
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- 25- M. Sarmast, **H. Niroomand Oscuii**, F. Ghalichi and E. Samiei, A Comparative Study of the Hemodynamics in Two Types of Grafts of 6 mm Versus 6-8 mm as an Upper Arm Straight Graft Hemodialysis Access, 6th World Congress of Biomechanics, 1-6 August 2010, Singapore Suntec Convention Centre.
- 26- Mohammad Sarmast, **Hanieh Niroomand Oscuii**, Farzan Ghalichi, Numerical Simulation Of The Hemodynamics In 6 Mm And 6-8 Mm Hemodialysis Grafts And Investigation Of Biomechanical Consequences, Proceedings of the ASME 2010 10th Biennial Conference on Engineering Systems Design and Analysis, ESDA2010, July 12-14, 2010, Istanbul, Turkey.
- ۲۷- ناصر عسکری، فرزانه قالیچی، **هانیه نیرومند اسکویی**، تاثیر الاستیسیته دیواره شریان کاروتید داخلی بر رژیم جریان و پارامترهای وابسته به آن در شرایط گرفتگی با در نظر گرفتن برهمکنش سیال-ساختار، شانزدهمین کنفرانس مهندسی پزشکی، ۱۰-۹ دی ماه ۱۳۸۸، تهران، دانشگاه علوم پزشکی تهران.
- ۲۸- ناصر عسکری، فرزانه قالیچی، **هانیه نیرومند اسکویی**، تخمین ارتباط درصد گرفتگی شریان و تغییر پارامترهای جریان پالسی با رژیم مغشوش در کاروتید داخلی، شانزدهمین کنفرانس مهندسی پزشکی، ۱۰-۹ دی ماه ۱۳۸۸، تهران، دانشگاه علوم پزشکی تهران.
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۳۱- حامد خالصی، هانیه نیرومند اسکویی، فرزان قالیچی، بررسی بازسازی دیواره شریان الاستیک تحت تاثیر بارهای استاتیکی و دینامیکی، شانزدهمین کنفرانس مهندسی پزشکی، ۹-۱۰ دی ماه ۱۳۸۸، تهران، دانشگاه علوم پزشکی تهران.

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36- S. Najarian, H. Niroomand, Effect of variable viscosity of peripheral layer in peristaltic transport of non-Newtonian power-law fluid model, 9th Iranian Conference of Biomedical Engineering, March 1999, Tehran, Iran.

37- S. Najarian, H. Niroomand, Peristaltic transport of a power-law fluid with variable consistency, European Society of Biomechanics, 27th-30th August 2000, Dublin, Ireland.

Work Experience

1. Academic staff of Sahand University of Technology (associate professor)
2. Member of Iranian Society for Biomedical Engineering
3. Member of Iranian society of Official experts in medical devices
4. Cooperation with IROST (Iranian Research Organization for Science & Technology)
 - Design & Manufacturing of heat exchanger of IROST 2001D Dialysis machine.
 - Design & Manufacturing of ultrafiltration control system of IROST 2001D Dialysis machine
 - Research about deaeration systems in medical devices
 - Research about heat transport phenomena in blood warmer
 - Research & mechanical design of peritoneal Dialysis machine
 - Judgment of projects in Khwarizmi International Festival

Teaching

1. Bioinstrumentation
2. BioFluid Mechanics
3. Bio heat and mass transport in biological systems
4. Artificial Organs
5. Fluid mechanics
6. Basic Rehabilitation & Devices

Interests

1. cardiovascular biomechanics
2. fluid-solid interaction in biological systems
3. modeling and design of Ventricular Assist Devices
4. wave propagation in blood vessels
5. remodeling of blood vessels
6. modeling biofluid flows
7. modeling of cancer growth
8. cell mechanics
9. rehabilitation

Projects

1. Design and Simulation of a Centrifugal Micropump, Ph.D. Project.
2. Hemodynamic Analysis of Diastolic Augmentation Pumping function by Fluid Structure Interaction Method, Ph.D. Project
3. Development and analysis of mathematical models of brain tumors growth considering the heterogeneity of the tissue based on,"Ph.D. project"
4. Numerical investigation of dissociation of captured leukocyte from macroscopic and microscopic points of view ,"Ph.D. project"
5. Studying the effect of different treatments on glioma cell growth model in different regions of the human brain medical images Member of Iranian Society for Biomedical Engineering"MS.C. project"
6. Numerical Simulation of Osteocyte Cell in Response to Mechanical Loadings with considering of Lacunar-Canalicular Interstitial Fluid Flow. "MS.C. project"
7. Biological Cell Quantitative Failure Analysis under Transient Mechanical Stresses: Setting Success Criteria and Quantification of Reliability Index of Cellular Function. "MS.C. project"

8. Computational Study Of Cell Structure Behavior In A 3d Modeling With Subcellular Organelles Under Mechanical Loading”MS.C. project”

Proposals

1. Patient based Prediction of the growth and anti-cancer drug transport in brain tumors
2. Numerical modelling of extracellular fluid effect on Chondrocyte Cell behavior