



Vahid Arbabi

Assistant Professor

Faculty: Engineering

Department: Mechanical Engineering

Education

Degree	Graduated in	Major	University
BSc	2003	Mechanical Engineering - Solid Design	University of Sistan & Baluchestan
MSc	2006	Mechanical Engineering - Applied Design	Yazd University
Ph.D	2016	Biomechanical Engineering	Delft University of technology
Post Doctoral	2018	Orthopaedic-Biomechanics	University Medical Centre Utrecht

Work Experience

Head of Orthopaedic-Biomechanics Research Group

Actual member of the University Academic Diplomacy Council

Awards

[Runner-up prize for the Best Doctoral Thesis Award in Biomechanics by the European Society of Biomechanics \(ESB\).](#)

Subjects Taught

Selected topics in Orthopaedic-Biomechanics

Course Topics

Vibrations

Dynamic of Machinery

Papers in Journals

1. Vahid Arbabi, Joost HJ van Erp, Willem , & Paul Gielis, Arthur de Gast, Harrie Weinans, Laurens Kaas, Ren M Castelein, Tom PC Schl sser, Unravelling the hip-spine dilemma from the CHECK-cohort: is sagittal pelvic morphology linked to radiographic signs of femoroacetabular impingement?, *HIP International*, Vol. 6, No. 33, pp. 1079-1085, 2022, JCR, Scopus.
2. S. Alireza Zolfaghari, Elham Mohammadi, Mohammadreza Jarkeh, Vahid Arbabi, Effect of resilient architecture in an ancient windmill in the Sistan region on natural ventilation enhancement, *Scientific Reports*, Vol. 12, No. 12, pp. 1-19, 2022, JCR, Scopus.
3. سیدیوسف احمدی بروغنی، هادی نیک بخت، وحید اربابی، تحلیل اجزای محدود و مقایسه توزیع تنش در یک نمونه‌ی مفصل زانوی پرانتری قبل و بعد از انجام عمل مجازی استئوتومی، پژوهش در توانبخشی ورزشی، مجلد ۲۰، شماره ۱۰، شماره ۸۴، صفحات ۷۳-۲۰۲۳، ۲۰۲۳، ISC.
4. سیدیوسف احمدی بروغنی، حسن رایگان، وحید اربابی، بررسی توزیع تنش در مفصل سالم و دارای آرتروز زانو بعد از Journal of Solid and Fluid Mechanics-انطباق فایل‌های سه‌بعدی با تصاویر رادیوگرافی، مکانیک سازه‌ها و شماره‌ها، مجلد ۱، شماره ۱۳، شماره صفحات ۱۴۷-۲۰۲۳، ۱۵۶، ۲۰۲۳، ISC.
5. سیدیوسف احمدی بروغنی، هادی نیک بخت، وحید اربابی، تحلیل اجزای محدود و مقایسه توزیع تنش در غضروف‌ها و منیسک‌های دو نمونه‌ی مفصل زانوی سالم و پرانتری، مهندسی پزشکی زیستی، مجلد ۲، شماره ۱۶، شماره صفحات ۱۵۱-۱۶۰، ۲۰۲۲، ISC.
6. Vahid Arbabi, Behdad Pouran, Amir Raoof, D.A. Matthijs de Winter, Ronald L.A.W. Bleys, Frederik J. Beekman, Amir. A. Zadpoor, Jos Malda, Harrie Weinans, Topographic features of nano-pores within the osteochondral interface and their effects on transport properties—a 3D imaging and modeling study, *Journal of Biomechanics*, Vol. 110504, No. 123, pp. 1-8, 2021, JCR, Scopus.
7. Vahid Arbabi, Joost H. J. van Er, Willem Paul Gielis, Arthur de Gast, Harrie Weinans, Saeed Arbabi, F. Cumhur  ner, Rene Casletien, Tom P. C. Schl sser, Unravelling the knee-hip-spine trilemma from the CHECK study, *Bone & Joint Journal*, Vol. 91, No. 102, pp. 1261-1267, 2020, JCR, Scopus.
8. Vahid Arbabi, Hassan Rayegan, Willem Paul GIELIS, Seyed Yousef Ahmadi Brooghani, Claudia Linder, Tim F Cootes, Pim A de Jong, Harrie Weinans, Roel J H Custers, Predicting the mechanical hip-knee-ankle angle accurately from standard knee radiographs: a cross-validation experiment in 100 patients, *Acta Orthopaedica*, Vol. 91, pp. 1-6, 2020, ISI, JCR, Scopus.
9. Vahid Arbabi, J. Hirvasniemi, W.P. Gielis, S. Arbabi, R. Agricola, W.E. van Spil, H. Weinans, Bone texture analysis for prediction of incident radiographic hip osteoarthritis using machine learning: data from the Cohort Hip and Cohort Knee (CHECK) study, *OSTEOARTHRITIS AND CARTILAGE*, Vol. 6, No. 27, pp. 906-914, 2019, JCR, ISC, Scopus.
10. Vahid Arbabi, Everts V., Fazaeli S., Koolstra J.H., Lobbezoo F., Mirahmadi F., Snabel J., Stoop R., van Lenthe G.H., Weinans H., Aging does not change the compressive stiffness of mandibular condylar cartilage in horses, *OSTEOARTHRITIS AND CARTILAGE*, Vol. 26, pp. 1744-1752, 2018, JCR, ISC, Scopus.
11. Vahid Arbabi, Bajpayee Ambika G., Jurvelin Jukka S., Malda Jos, Pouran Behdad, T?yr?s Juha, van Tiel Jasper, Weinans Harrie, Zadpoor Amir A., Multi-scale imaging techniques to investigate solute transport across articular cartilage, *Journal of Biomechanics*, Vol. 78, pp. 10-20, 2018, JCR, Scopus.
12. Vahid Arbabi, Malda Jos, Moshtagh Parisa R., Pouran Behdad, Ruberti Jeffrey, Snabel Jessica, Stoop

- Reinout, Weinans Harrie, Zadpoor Amir A., Non-enzymatic cross-linking of collagen type II fibrils is tuned via osmolality switch, *JOURNAL OF ORTHOPAEDIC RESEARCH*, Vol. 36, pp. 1929-1936, 2018, JCR.
13. Vahid Arbabi, de Jong Pim A., Gielis Willem Paul, Tuijthof Gabrielle J. M., Tamer Nazli, Weinans Harrie, Zadpoor Amir A., Three dimensional analysis of shape variations and symmetry of the fibula, tibia, calcaneus and talus, *JOURNAL OF ANATOMY*, Vol. 234, pp. 132-144, 2017, JCR.
 14. Vahid Arbabi, Bleys Ronald LAW, Poursan Behdad, Ren van Weeren P., Weinans Harrie, Zadpoor Amir A., Solute transport at the interface of cartilage and subchondral bone plate: Effect of micro-architecture, *Journal of Biomechanics*, Vol. 52, pp. 148-154, 2017, JCR, Scopus.
 15. Vahid Arbabi, Poursan Behdad, Weinans Harrie, Zadpoor Amir. A., An Experimental and Finite Element Protocol to Investigate the Transport of Neutral and Charged Solutes across Articular Cartilage, *Journal of Visualized Experiments*, Vol. 122, No. 122, pp. 1-5, 2017, JCR, Scopus.
 16. Vahid Arbabi, Campoli Gianni, Poursan Behdad, Weinans Harrie, Zadpoor Amir A., Determination of the mechanical and physical properties of cartilage by coupling poroelastic-based finite element models of indentation with artificial neural networks, *Journal of Biomechanics*, Vol. 49, pp. 631-637, 2016, JCR, Scopus.
 17. Vahid Arbabi, Poursan Behdad, Weinans Harrie, Zadpoor Amir A., Multiphasic modeling of charged solute transport across articular cartilage: Application of multi-zone finite-bath model, *Journal of Biomechanics*, Vol. 49, pp. 1510-1517, 2016, JCR, Scopus.
 18. Vahid Arbabi, Korthagen N.M., Moshtagh P.R., Poursan B., Rauker J., van Tiel J., Weinans H., Zadpoor A.A., Zuiddam M.R., Micro- and nano-mechanics of osteoarthritic cartilage: The effects of tonicity and disease severity, *Journal of the Mechanical Behavior of Biomedical Materials*, Vol. 59, pp. 561-571, 2016, JCR, Scopus.
 19. Vahid Arbabi, Poursan Behdad, Weinans Harrie, Zadpoor Amir A., Combined inverse-forward artificial neural networks for fast and accurate estimation of the diffusion coefficients of cartilage based on multi-physics models, *Journal of Biomechanics*, Vol. 49, pp. 2799-2805, 2016, JCR, Scopus.
 20. Vahid Arbabi, Poursan Behdad, Weinans Harrie, Zadpoor Amir A., Isolated effects of external bath osmolality, solute concentration, and electrical charge on solute transport across articular cartilage, *MEDICAL ENGINEERING & PHYSICS*, Vol. 38, pp. 1399-1407, 2016, JCR, Scopus.
 21. Vahid Arbabi, Poursan Behdad, Weinans Harrie, Zadpoor Amir A., Application of multiphysics models to efficient design of experiments of solute transport across articular cartilage, *Computers in Biology and Medicine*, Vol. 78, pp. 91-96, 2016, JCR, Scopus.
 22. Vahid Arbabi, Poursan Behdad, Weinans Harrie, Zadpoor Amir A., Neutral solute transport across osteochondral interface: A finite element approach, *Journal of Biomechanics*, Vol. 49, pp. 3833-3839, 2016, JCR, Scopus.
 23. Vahid Arbabi, Poursan B., Weinans H., Zadpoor A. A., Transport of Neutral Solute Across Articular Cartilage: The Role of Zonal Diffusivities, *JOURNAL OF BIOMECHANICAL ENGINEERING-TRANSACTIONS OF THE ASME*, Vol. 137, pp. 71001-71009, 2015, JCR.
 24. Vahid Arbabi, Ebrahimzadeh I., Effects of wall thickness on microstructures and properties of brasses pipes produced by horizontal continuous casting, *INTERNATIONAL JOURNAL OF CAST METALS RESEARCH*, Vol. 23, pp. 150-157, 2013, JCR, Scopus.
 25. Vahid Arbabi, Heisiattalab S, Keikha M M, Safari M, An investigation into the effect of die temperature and heat treatment on A360 properties produced by the semi-solid forming and cooling slope method, *Proceedings of the Institution of Mechanical Engineers - Part B*, Vol. 225, pp. 377-383, 2011, JCR, Scopus.