



## References

- ABAQUS 6.12, *ABAQUS/CAE User's Manual*, 2012
- Affatato,S., Ruggiero,A., and Merola,M., 2015, Advanced biomaterials in hip joint arthroplasty, 2105, *A review on polymer and ceramics composites as alternative bearings*, Composites Part B 83, 276-283.
- ASM, *Titanium Grade 2*  
<http://asm.matweb.com/search/SpecificMaterial.asp?bassnum=MTU020>  
(Online accessed: December 17<sup>th</sup> 2016)
- AZoM, 2001, *Stainless Steel- Grade 316 (UNS S31600)*
- Baena,J.C., Jingping W, and Zhongxiao P. 2015, Wear Performance of UHMWPE and Reinforced UHMWPE composites in arthroplasty applications: A Review, *Lubricants*, **3**, 413-436
- Barbour,P.S.M., Barton,D.C., and Fisher,J., 1995, The Influence Of Contact Stress On The Wear Of UHMWPE For Total Replacement Hip Prostheses, **181-183**, 250- 257.
- Bergmann,G., Graichen,F., and Rohlmann,A., 1993, Hip Joint Loading During Walking And Running, Measured In Two Patients, *J. Biomechanics*, **26**(8), 969-990.
- Brand,R.A.,Mont,M.A., and Manring,M.M., 2011, Biographical Sketch: Themistocles Gluck (1853–1942), *Clinic Orthopedic Related Research*, **469**(6), 1525–1527.
- Bougherara,H., Rahim,E., Shah,S., Dubov,A., Emil H., Schemitsch, Zdero,R., 2011, A Preliminary Biomechanical Assessment of a Polymer Composite Hip Implant Using an Infrared Thermography Technique Validated. by Strain Gage Measurements, *Journal of Biomechanical Engineering*, Vol. 133 / 074503-1.
- Colica,K., Sedmak,A., Grbovic,A., Tatica,U., Sedmaka,S., Djordjevic,B., 2016, Finite element modeling of hip implant static loading, *Procedia Engineering* ,**149**, 257 – 262.
- Elias,C.N., Lima, J.H.C., Valiev,R., and Meyers M.A., 2008, Biomedical Applications of Titanium and its Alloys, *JOM*.



- El'Sheikh,H.F.,MacDonald,B.J.,Hashmi,M.S.J., 2003, Finite element simulation of the hip joint during stumbling: a comparison between static and dynamic loading, *Journal of Materials Processing Technology*, **143–144**, 249–255.
- Gislason,M.K., Foster,E., Main,D., Fusiek,G., Niewczas,P., Bransby-Zachary,M., Nash,D.H., 2016, Mechanical testing and modelling of the Universal 2 implant, *Medical Engineering and Physics* ,**38**, 511–517.
- Gomez,P.F. and Morcuende,J.A.,2005, A Historical and Economic Perspective on Sir John Charnley, Chas F. Thackray Limited, and the Early Arthroplasty Industry, *Iowa Orthopedic Journal* , **25**, 30–37.
- Guezmil,M., Bensalahb,W., and Mezlinia,S., 2016, Tribological behavior of UHMWPE against TiAl6V4 and CoCr28 Mo alloy sunder dry and lubricated conditions, *Journal of the mechanical behavior of biomedical materials*, **63**,375–385.
- Harvey L., Stein , P. E ., and Ticona L.L.C., 1999, Ultra High Molecular Weight Polyethylene (UHMWPE), *Engineered Materials Handbook Volume 2: Engineering Plastics*, 167-171.
- Heajia Suoer-Metal Co.,Ltd, *Stainless Steel 316/316 L (UNS S31600)*
- Hernigou,P., 2014, Smith–Petersen and early development of hip arthroplasty, *Internation orthopedhic*; **38**(1), 193-198.
- Hendiana,D., 2013, *Desain Implan Sendi Pinggul dan Simulasi Proses Pembuatan Femoral Stem Melalui Proses Cold Forming Pada Material Stainless Steel 316 L Menggunakan Metode Elemen Hingga*, Thesis of bachelorate program mechanical of engineering University of Gadjah Mada
- Knesek,M.,J. , Skendzel,J.G. ,Kelly,B.,T., and Bedi,A., 2012, Approach to the Patient Evaluation Using Static and Dynamic Hip Pathomechanics.
- Martini, F. H., Nath, J.L., and Bartholomew, E.F., 2012, *Fundamental of Anatomy and Physiology* 9<sup>th</sup> edition, Pearson, San Fransisco.
- Michael, H.H, Kristopher, G.S, Michael, A.M, Parvizi,J., 2010, What's new in total hip arthroplasty. *The Journal of Bone: a Hip Surgery*, **92**, 2959-2972
- Miftakhudin, 2015, *Aplikasi Parametric Modelling Dan Analisis Finite Element Pada Perancangan Ulang Artificial Knee Joint Berdasarkan Ukuran Sendi Lutut Populasi Indonesia*, Thesis of bachelorate program mechanical of engineering University of Gadjah Mada.
- Moaveni,S. , 1999, *Finite Element Analysis Theory and Applications With ANSYS*



- Morlock, M.M., Bishop, N., and Huber, G., 2011. Biomechanics of Hip Arthroplasty, TUHH Hamburg University of Technology.
- Oldani, C. and Dominguez, A., 2012, Titanium as a Biomaterial for Implants.
- Pachioga, A., Palade, D. D., and Cosma, S., 2011, Computational simulation of bone personalized hip, *Hip prosthesis assembly*, **73**, 249-262.
- Park, J.B., 2000, Biomaterials, University of Iowa, *Biomedical Engineering Handbook Volume II*, 46
- Park, S-H, Llinas, A., and Goel, V. K., 2000, Bone Repair and Joint Replacement, *Biomedical Engineering Handbook Volume II*, 44.1
- Ramaniraka, N.A., Rakotomanana, L.R., Leyvraz, P.F., 2000, Effects Of Stem Stiffness, Cement Thickness And Roughness Of The Cement-Bone Surface, Vol. 82-B, No. 2.
- Saladin, K., 2009, *Anatomy & Physiology: The Unity of Form and Function* 5th Edition, McGraw-Hills, New York.
- S. Nemat-Nasser, W. G. Guo and J. Y. Cheng, 1999. "Mechanical Properties and Deformation Mechanisms of A Commercially Pure Titanium.", *Acta Mater.* **47**(13), 3705-3720.
- Standard of Care: *Total Hip Arthroplasty, Brigham and Women's Hospital*, 2010.
- Stephan B, Johannes K, Thomas H, Maximilian P, Carl H, Friedrich-wilhelm B, Christian L, Thomas G., 2012, Intra prosthetic fixation techniques in the treatment of periprosthetic fractures-A biomechanical study, *World Journal of Orthopedics*, **3**(10), 162-166.
- Tate, P. , 2012, *Seeley's Principles of Anatomy and Physiology*, McGraw- Hills, New York
- Thielen, T. , Maas, S., Zuerbes, A., Waldmann, D., Anagnostakos, K., Kelm, J., 2009, Mechanical behaviour of standardized, endoskeleton-including hip spacers implanted into composite femurs, *International Journal of Medical Sciences*, **6**, 280-286.
- Van der Werff, H. and Pennings, A.J., 1991, Tensile deformation of high strength and high modulus polyethylene fibers, *Colloid & Polymer Science*, **269**, 747-763.
- Zimmer, *Original Müller<sup>TM</sup> Straight Stem Surgical Technique*