REFERENCES

[1] Q. Chen, G.A. Thouas, Metallic implant biomaterials, Materials Science and Engineering: R: Reports 87 (2015) 1-57.

[2] L. Ghasemi-Mobarakeh, D. Kolahreez, S. Ramakrishna, D. Williams, Key terminology in biomaterials and biocompatibility, Current Opinion in Biomedical Engineering 10 (2019) 45-50.

[3] H. Li, Y. Zheng, Recent advances in bulk metallic glasses for biomedical applications, Acta biomaterialia 36 (2016) 1-20.

[4] W.-F. Ho, A comparison of tensile properties and corrosion behavior of cast Ti–7.5 Mo with cp Ti, Ti–15Mo and Ti–6Al–4V alloys, Journal of Alloys and Compounds 464(1-2) (2008) 580-583.

[5] D. Mareci, R. Chelariu, G. Bolat, A. Cailean, V. Grancea, D. Sutiman, Electrochemical behaviour of Ti alloys containing Mo and Ta as β-stabilizer elements for dental application, Transactions of Nonferrous Metals Society of China 23(12) (2013) 3829-3836.

[6] Y. Wang, Y. Zheng, Corrosion behaviour and biocompatibility evaluation of low modulus Ti–16Nb shape memory alloy as potential biomaterial, Materials Letters 63(15) (2009) 1293-1295.

[7] Y.L. Zhou, M. Niinomi, T. Akahori, H. Fukui, H. Toda, Corrosion resistance and biocompatibility of Ti–Ta alloys for biomedical applications, Materials Science and Engineering: A 398(1-2) (2005) 28-36.

[8] A. Aherwar, A.K. Singh, A. Patnaik, Cobalt Based Alloy: A Better Choice Biomaterial for Hip Implants, Trends in Biomaterials & Artificial Organs 30(1) (2016).

[9] W. Wang, K. Yang, Q. Wang, P. Dai, H. Fang, F. Wu, Q. Guo, P.K. Liaw, N. Hua, Novel Ti-Zr-Hf-Nb-Fe refractory high-entropy alloys for potential biomedical applications, Journal of Alloys and Compounds 906 (2022) 164383.

[10] M. Niinomi, Metallic biomaterials, Journal of Artificial Organs 11 (2008) 105-110.

[11] Y. Kuroda, M. Komada, R. Murakami, S. Fukumoto, N. Tsuchida, Y. Harada, K. Fukaura, Metal Injection Molding of Nickel-Free Austenitic Stainless-Steels I-Manufacturing Process, Advanced Materials Research 26 (2007) 15-18.

[12] J. Breme, E. Steinhäuser, G. Paulus, Commercially pure titanium Steinhäuser plate-screw system for maxillofacial surgery, Biomaterials 9(4) (1988) 310-313.

[13] M.B. Nasab, M.R. Hassan, B.B. Sahari, Metallic biomaterials of knee and hip-a review, Trends Biomater. Artif. Organs 24(1) (2010) 69-82.

[14] S. Ponader, C. Von Wilmowsky, M. Widenmayer, R. Lutz, P. Heinl, C. Körner, R.F. Singer, E. Nkenke, F.W. Neukam, K.A. Schlegel, In vivo performance of selective electron beam-melted Ti-6Al-4V structures, Journal of Biomedical Materials Research Part A: An Official Journal of The Society for Biomaterials, The Japanese Society for Biomaterials, and The Australian Society for Biomaterials and the Korean Society for Biomaterials 92(1) (2010) 56-62.

[15] M. Long, H. Rack, Titanium alloys in total joint replacement—a materials science perspective, Biomaterials 19(18) (1998) 1621-1639.

[16] M. Niinomi, Recent metallic materials for biomedical applications, Metallurgical and materials transactions A 33 (2002) 477-486.

[17] R. Adell, U. Lekholm, B. Rockler, P.-I. Brånemark, A 15-year study of osseointegrated implants in the treatment of the edentulous jaw, International journal of oral surgery 10(6) (1981) 387-416.

[18] A. Sidambe, W. Choong, H. Hamilton, I. Todd, Correlation of metal injection moulded Ti6Al4V yield strength with resonance frequency (PCRT) measurements, Materials Science and Engineering: A 568 (2013) 220-227.

[19] D. Bombač, M. Brojan, P. Fajfar, F. Kosel, R. Turk, Review of materials in medical applications Pregled materialov v medicinskih aplikacijah, RMZ–Materials and Geoenvironment 54(4) (2007) 471-499.

[20] M. Niinomi, T. Akahori, S. Katsura, K. Yamauchi, M. Ogawa, Mechanical characteristics and microstructure of drawn wire of Ti–29Nb–13Ta–4.6 Zr for biomedical applications, Materials Science and Engineering: C 27(1) (2007) 154-161.

[21] D. Kuroda, H. Kawasaki, A. Yamamoto, S. Hiromoto, T. Hanawa, Mechanical properties and microstructures of new Ti–Fe–Ta and Ti–Fe–Ta–Zr system alloys, Materials Science and Engineering: C 25(3) (2005) 312-320.

[22] S. Nag, R. Banerjee, H. Fraser, Microstructural evolution and strengthening mechanisms in Ti–Nb–Zr–Ta, Ti–Mo–Zr–Fe and Ti–15Mo biocompatible alloys, Materials Science and Engineering: C 25(3) (2005) 357-362.

[23] M. Geetha, A.K. Singh, R. Asokamani, A.K. Gogia, Ti based biomaterials, the ultimate choice for orthopaedic implants–a review, Progress in materials science 54(3) (2009) 397-425.

[24] O. Prymak, D. Bogdanski, M. Köller, S.A. Esenwein, G. Muhr, F. Beckmann, T. Donath, M. Assad, M. Epple, Morphological characterization and in vitro biocompatibility of a porous nickel–titanium alloy, Biomaterials 26(29) (2005) 5801-5807.

[25] J. Veverkova, D. Bartkova, A. Weiser, A. Dlouhy, P. Babula, P. Stepka, M. Pavkova Goldbergova, Effect of Ni ion release on the cells in contact with NiTi alloys, Environmental Science and Pollution Research 27 (2020) 7934-7942.

[26] R. Manik, M.R. Sahu, Biocompatibility of NiTi, Nickel-Titanium Smart Hybrid Materials, Elsevier2022, pp. 173-190.

[27] Y. Oshida, F. Farzin-Nia, Response of Ti–Ni alloys for dental biomaterials to conditions in the mouth, Shape memory alloys for biomedical applications, Elsevier2009, pp. 101-149.

[28] W. Yang, Y. Liu, S. Pang, P.K. Liaw, T. Zhang, Bio-corrosion behavior and in vitro biocompatibility of equimolar TiZrHfNbTa high-entropy alloy, Intermetallics 124 (2020) 106845.

[29] J. Brechtl, S. Chen, C. Lee, Y. Shi, R. Feng, X. Xie, D. Hamblin, A.M. Coleman, B. Straka, H. Shortt, A review of the serrated-flow phenomenon and its role in the deformation behavior of high-entropy alloys, Metals 10(8) (2020) 1101.

[30] C.-C. Juan, M.-H. Tsai, C.-W. Tsai, C.-M. Lin, W.-R. Wang, C.-C. Yang, S.-K. Chen, S.-J. Lin, J.-W. Yeh, Enhanced mechanical properties of HfMoTaTiZr and HfMoNbTaTiZr refractory high-entropy alloys, Intermetallics 62 (2015) 76-83.

[31] Y.-f. Xu, Y.-f. Xiao, D.-q. Yi, H.-q. Liu, W. Liang, W. Jing, Corrosion behavior of Ti–Nb–Ta–Zr–Fe alloy for biomedical applications in Ringer's solution, Transactions of Nonferrous Metals Society of China 25(8) (2015) 2556-2563.

[32] C. Shang, E. Axinte, W. Ge, Z. Zhang, Y. Wang, High-entropy alloy coatings with excellent mechanical, corrosion resistance and magnetic properties prepared by mechanical alloying and hot pressing sintering, Surfaces and interfaces 9 (2017) 36-43.

[33] J. Chen, X. Zhou, W. Wang, B. Liu, Y. Lv, W. Yang, D. Xu, Y. Liu, A review on fundamental of high entropy alloys with promising high–temperature properties, Journal of Alloys and Compounds 760 (2018) 15-30.

[34] S. Shuang, Z. Ding, D. Chung, S. Shi, Y. Yang, Corrosion resistant nanostructured eutectic high entropy alloy, Corrosion Science 164 (2020) 108315.

[35] Y. Tian, C. Lu, Y. Shen, X. Feng, Microstructure and corrosion property of CrMnFeCoNi high entropy alloy coating on Q235 substrate via mechanical alloying method, Surfaces and Interfaces 15 (2019) 135-140.

[36] E.P. George, W.A. Curtin, C.C. Tasan, High entropy alloys: A focused review of mechanical properties and deformation mechanisms, Acta Materialia 188 (2020) 435-474.

[37] H. Yao, Z. Tan, D. He, Z. Zhou, Z. Zhou, Y. Xue, L. Cui, L. Chen, G. Wang, Y. Yang, High strength and ductility AlCrFeNiV high entropy alloy with hierarchically heterogeneous microstructure prepared by selective laser melting, Journal of Alloys and Compounds 813 (2020) 152196.

[38] F. Průša, M. Cabibbo, A. Šenková, V. Kučera, Z. Veselka, A. Školáková, D. Vojtěch, J. Cibulková, J. Čapek, High-strength ultrafine-grained CoCrFeNiNb high-entropy alloy prepared by mechanical alloying: Properties and strengthening mechanism, Journal of Alloys and Compounds 835 (2020) 155308.

[39] O.A. Waseem, H.J. Ryu, Combinatorial synthesis and analysis of AlxTayVz-Cr20Mo20Nb20Ti20Zr10 and Al10CrMoxNbTiZr10 refractory high-entropy alloys: Oxidation behavior, Journal of Alloys and Compounds 828 (2020) 154427.

[40] S.-P. Wang, J. Xu, TiZrNbTaMo high-entropy alloy designed for orthopedic implants: As-cast microstructure and mechanical properties, Materials Science and Engineering: C 73 (2017) 80-89.

[41] M. Todai, T. Nagase, T. Hori, A. Matsugaki, A. Sekita, T. Nakano, Novel TiNbTaZrMo high-entropy alloys for metallic biomaterials, Scripta Materialia 129 (2017) 65-68.

[42] T. Nagase, M. Todai, T. Hori, T. Nakano, Microstructure of equiatomic and non-equiatomic Ti-Nb-Ta-Zr-Mo high-entropy alloys for metallic biomaterials, Journal of Alloys and Compounds 753 (2018) 412-421.

[43] Y. Yuan, Y. Wu, Z. Yang, X. Liang, Z. Lei, H. Huang, H. Wang, X. Liu, K. An, W. Wu, Formation, structure and properties of biocompatible TiZrHfNbTa high-entropy alloys, Materials Research Letters 7(6) (2019) 225-231.

[44] G. Popescu, B. Ghiban, C. Popescu, L. Rosu, R. Truscă, I. Carcea, V. Soare, D. Dumitrescu, I. Constantin, M. Olaru, New TiZrNbTaFe high entropy alloy used for medical applications, IOP Conference Series: Materials Science and Engineering, IOP Publishing, 2018, p. 022049.

[45] B. Cantor, I. Chang, P. Knight, A. Vincent, Microstructural development in equiatomic multicomponent alloys, Materials Science and Engineering: A 375 (2004) 213-218.

[46] V. Nguyen, M. Qian, Z. Shi, T. Song, L. Huang, J. Zou, Compositional design of strong and ductile (tensile) Ti-Zr-Nb-Ta medium entropy alloys (MEAs) using the atomic mismatch approach, Materials Science and Engineering: A 742 (2019) 762-772.

[47] V. Nguyen, M. Qian, Z. Shi, T. Song, L. Huang, J. Zou, A novel quaternary equiatomic Ti-Zr-Nb-Ta medium entropy alloy (MEA), Intermetallics 101 (2018) 39-43.

[48] Y. Zou, S. Maiti, W. Steurer, R. Spolenak, Size-dependent plasticity in an Nb25Mo25Ta25W25 refractory high-entropy alloy, Acta Materialia 65 (2014) 85-97.

[49] Y. Wu, Y. Cai, T. Wang, J. Si, J. Zhu, Y. Wang, X. Hui, A refractory Hf25Nb25Ti25Zr25 high-entropy alloy with excellent structural stability and tensile properties, Materials Letters 130 (2014) 277-280.

[50] H. Huang, Y. Wu, J. He, H. Wang, X. Liu, K. An, W. Wu, Z. Lu, Phase-transformation ductilization of brittle high-entropy alloys via metastability engineering, Advanced Materials 29(30) (2017) 1701678.

[51] Z. Lei, X. Liu, Y. Wu, H. Wang, S. Jiang, S. Wang, X. Hui, Y. Wu, B. Gault, P. Kontis, Enhanced strength and ductility in a high-entropy alloy via ordered oxygen complexes, Nature 563(7732) (2018) 546-550.

[52] J.W. Yeh, S.K. Chen, S.J. Lin, J.Y. Gan, T.S. Chin, T.T. Shun, C.H. Tsau, S.Y. Chang, Nanostructured high-entropy alloys with multiple principal elements: novel alloy design concepts and outcomes, Advanced engineering materials 6(5) (2004) 299-303.

[53] J.-W. Yeh, S.-J. Lin, T.-S. Chin, J.-Y. Gan, S.-K. Chen, T.-T. Shun, C.-H. Tsau, S.-Y. Chou, Formation of simple crystal structures in Cu-Co-Ni-Cr-Al-Fe-Ti-V alloys with multiprincipal metallic elements, Metallurgical and Materials Transactions A 35 (2004) 2533-2536.

[54] Y. Zhang, T.T. Zuo, Z. Tang, M.C. Gao, K.A. Dahmen, P.K. Liaw, Z.P. Lu, Microstructures and properties of high-entropy alloys, Progress in materials science 61 (2014) 1-93.

[55] J.-W. Yeh, Alloy design strategies and future trends in high-entropy alloys, Jom 65 (2013) 1759-1771.

[56] M.-H. Tsai, J.-W. Yeh, High-entropy alloys: a critical review, Materials Research Letters 2(3) (2014) 107-123.

[57] O.N. Senkov, G. Wilks, J. Scott, D.B. Miracle, Mechanical properties of Nb25Mo25Ta25W25 and V20Nb20Mo20Ta20W20 refractory high entropy alloys, Intermetallics 19(5) (2011) 698-706.

[58] S.-P. Wang, E. Ma, J. Xu, New ternary equi-atomic refractory medium-entropy alloys with tensile ductility: Hafnium versus titanium into NbTa-based solution, Intermetallics 107 (2019) 15-23.

[59] V. Soni, O. Senkov, B. Gwalani, D. Miracle, R. Banerjee, Microstructural design for improving ductility of an initially brittle refractory high entropy alloy, Scientific reports 8(1) (2018) 8816.

[60] D.B. Miracle, O.N. Senkov, A critical review of high entropy alloys and related concepts, Acta Materialia 122 (2017) 448-511.

[61] Y. Jien-Wei, Recent progress in high entropy alloys, Ann. Chim. Sci. Mat 31(6) (2006) 633-648.

[62] G. Sheng, C.T. Liu, Phase stability in high entropy alloys: Formation of solid-solution phase or amorphous phase, Progress in Natural Science: Materials International 21(6) (2011) 433-446.

[63] X. Yang, Y. Zhang, Prediction of high-entropy stabilized solid-solution in multi-component alloys, Materials Chemistry and Physics 132(2-3) (2012) 233-238.

[64] S. Guo, Phase selection rules for cast high entropy alloys: an overview, Materials Science and Technology 31(10) (2015) 1223-1230.

[65] F. Otto, Y. Yang, H. Bei, E.P. George, Relative effects of enthalpy and entropy on the phase stability of equiatomic high-entropy alloys, Acta Materialia 61(7) (2013) 2628-2638.

[66] K.-Y. Tsai, M.-H. Tsai, J.-W. Yeh, Sluggish diffusion in co–cr–fe–mn–ni high-entropy alloys, Acta Materialia 61(13) (2013) 4887-4897.

[67] N. Guo, L. Wang, L. Luo, X. Li, R. Chen, Y. Su, J. Guo, H. Fu, Effect of composing element on microstructure and mechanical properties in Mo–Nb–Hf–Zr–Ti multi-principle component alloys, Intermetallics 69 (2016) 13-20.

[68] F. He, Z. Wang, P. Cheng, Q. Wang, J. Li, Y. Dang, J. Wang, C. Liu, Designing eutectic high entropy alloys of CoCrFeNiNbx, Journal of Alloys and Compounds 656 (2016) 284-289.

[69] S. Maiti, W. Steurer, Structural-disorder and its effect on mechanical properties in single-phase TaNbHfZr high-entropy alloy, Acta Materialia 106 (2016) 87-97.

[70] J. Jensen, B. Welk, R. Williams, J. Sosa, D. Huber, O. Senkov, G. Viswanathan, H. Fraser, Characterization of the microstructure of the compositionally complex alloy Al1Mo0. 5Nb1Ta0. 5Ti1Zr1, Scripta Materialia 121 (2016) 1-4.

[71] E. Jumaev, S.H. Hong, J.T. Kim, H.J. Park, Y.S. Kim, S.C. Mun, J.-Y. Park, G. Song, J.K. Lee, B.H. Min, Chemical evolution-induced strengthening on AlCoCrNi dual-phase

high-entropy alloy with high specific strength, Journal of Alloys and Compounds 777 (2019) 828-834.

[72] W.D. Callister Jr, Materials science and engineering an introduction, 2007.

[73] R. Abbaschian, R.E. Reed-Hill, Physical metallurgy principles-SI version, Cengage Learning2009.

[74] R.E. Smallman, R.J. Bishop, Modern physical metallurgy and materials engineering, Butterworth-Heinemann1999.

[75] Z. Wang, Y. Huang, Y. Yang, J. Wang, C. Liu, Atomic-size effect and solid solubility of multicomponent alloys, Scripta Materialia 94 (2015) 28-31.

[76] C. Lee, G. Song, M.C. Gao, R. Feng, P. Chen, J. Brechtl, Y. Chen, K. An, W. Guo, J.D. Poplawsky, Lattice distortion in a strong and ductile refractory high-entropy alloy, Acta Materialia 160 (2018) 158-172.

[77] Z. Li, K.G. Pradeep, Y. Deng, D. Raabe, C.C. Tasan, Metastable high-entropy dual-phase alloys overcome the strength–ductility trade-off, Nature 534(7606) (2016) 227-230.

[78] Y. Zhang, Y.J. Zhou, J.P. Lin, G.L. Chen, P.K. Liaw, Solid-solution phase formation rules for multi-component alloys, Advanced engineering materials 10(6) (2008) 534-538.

[79] F. Tian, L.K. Varga, N. Chen, J. Shen, L. Vitos, Empirical design of single phase high-entropy alloys with high hardness, Intermetallics 58 (2015) 1-6.

[80] Y. Zhang, T. Zuo, Y. Cheng, P.K. Liaw, High-entropy alloys with high saturation magnetization, electrical resistivity and malleability, Scientific reports 3(1) (2013) 1455.

[81] C.-W. Tsai, Y.-L. Chen, M.-H. Tsai, J.-W. Yeh, T.-T. Shun, S.-K. Chen, Deformation and annealing behaviors of high-entropy alloy Al0. 5CoCrCuFeNi, Journal of Alloys and compounds 486(1-2) (2009) 427-435.

[82] H.-P. Chou, Y.-S. Chang, S.-K. Chen, J.-W. Yeh, Microstructure, thermophysical and electrical properties in AlxCoCrFeNi (0≤ x≤ 2) high-entropy alloys, Materials Science and Engineering: B 163(3) (2009) 184-189.

[83] J.-W. Yeh, S.-Y. Chang, Y.-D. Hong, S.-K. Chen, S.-J. Lin, Anomalous decrease in X-ray diffraction intensities of Cu–Ni–Al–Co–Cr–Fe–Si alloy systems with multi-principal elements, Materials chemistry and physics 103(1) (2007) 41-46.

[84] Y.-F. Kao, S.-K. Chen, T.-J. Chen, P.-C. Chu, J.-W. Yeh, S.-J. Lin, Electrical, magnetic, and Hall properties of AlxCoCrFeNi high-entropy alloys, Journal of alloys and compounds 509(5) (2011) 1607-1614.

[85] C.-Y. Hsu, C.-C. Juan, W.-R. Wang, T.-S. Sheu, J.-W. Yeh, S.-K. Chen, On the superior hot hardness and softening resistance of AlCoCrxFeMo0. 5Ni high-entropy alloys, Materials Science and Engineering: A 528(10-11) (2011) 3581-3588.

[86] S.-Y. Chang, Y.-C. Huang, C.-E. Li, H.-F. Hsu, J.-W. Yeh, S.-J. Lin, Improved diffusion-resistant ability of multicomponent nitrides: from unitary TiN to senary high-entropy (TiTaCrZrAlRu) N, Jom 65 (2013) 1790-1796.

[87] C.-W. Tsai, M.-H. Tsai, J.-W. Yeh, C.-C. Yang, Effect of temperature on mechanical properties of Al0. 5CoCrCuFeNi wrought alloy, Journal of Alloys and Compounds 490(1-2) (2010) 160-165.

[88] T.-T. Shun, C.-H. Hung, C.-F. Lee, Formation of ordered/disordered nanoparticles in FCC high entropy alloys, Journal of Alloys and Compounds 493(1-2) (2010) 105-109.

[89] S. Ranganathan, Alloyed pleasures: Multimetallic cocktails, Current science 85(5) (2003) 1404-1406.

[90] O. Senkov, G. Wilks, D. Miracle, C. Chuang, P. Liaw, Refractory high-entropy alloys, Intermetallics 18(9) (2010) 1758-1765.

[91] O. Senkov, S. Senkova, D. Miracle, C. Woodward, Mechanical properties of low-density, refractory multi-principal element alloys of the Cr–Nb–Ti–V–Zr system, Materials Science and Engineering: A 565 (2013) 51-62.

[92] O.N. Senkov, S.V. Senkova, C. Woodward, D.B. Miracle, Low-density, refractory multi-principal element alloys of the Cr–Nb–Ti–V–Zr system: Microstructure and phase analysis, Acta Materialia 61(5) (2013) 1545-1557.

[93] O. Senkov, S. Senkova, C. Woodward, Effect of aluminum on the microstructure and properties of two refractory high-entropy alloys, Acta Materialia 68 (2014) 214-228.

[94] D.B. Miracle, J.D. Miller, O.N. Senkov, C. Woodward, M.D. Uchic, J. Tiley, Exploration and development of high entropy alloys for structural applications, Entropy 16(1) (2014) 494-525.

[95] L. Huang, L. Wang, M. Qian, J. Zou, High tensile-strength and ductile titanium matrix composites strengthened by TiB nanowires, Scripta Materialia 141 (2017) 133-137.

[96] L. Huang, M. Qian, L. Wang, Z.-G. Chen, Z. Shi, V. Nguyen, J. Zou, High-tensile-strength and ductile novel Ti-Fe-NB alloys reinforced with TiB nanowires, Materials Science and Engineering: A 708 (2017) 285-290.

[97] A. Miedema, P. De Chatel, F. De Boer, Cohesion in alloys—fundamentals of a semi-empirical model, Physica B+ c 100(1) (1980) 1-28.

[98] Z. Wang, S. Guo, C.T. Liu, Phase selection in high-entropy alloys: from nonequilibrium to equilibrium, Jom 66 (2014) 1966-1972.

[99] S. Guo, C. Liu, Phase stability in HEAs: Formation of solid-solution phase or amorphous phase, Progress in Materials Science: Materials International.–2011.–21.–P 433-446.

[100] Y. Zhang, X. Yang, P. Liaw, Alloy design and properties optimization of high-entropy alloys, Jom 64 (2012) 830-838.

[101] Y. Ye, C. Liu, Y. Yang, A geometric model for intrinsic residual strain and phase stability in high entropy alloys, Acta Materialia 94 (2015) 152-161.

[102] F. Wang, Y. Zhang, G. Chen, H.A. Davies, Tensile and compressive mechanical behavior of a CoCrCuFeNiAl 0.5 high entropy alloy, International Journal of Modern Physics B 23(06n07) (2009) 1254-1259.

[103] Z. Fu, W. Chen, H. Wen, D. Zhang, Z. Chen, B. Zheng, Y. Zhou, E.J. Lavernia, Microstructure and strengthening mechanisms in an FCC structured single-phase nanocrystalline Co25Ni25Fe25Al7. 5Cu17. 5 high-entropy alloy, Acta Materialia 107 (2016) 59-71.

[104] T. Nagase, Y. Iijima, A. Matsugaki, K. Ameyama, T. Nakano, Design and fabrication of Ti–Zr-Hf-Cr-Mo and Ti–Zr-Hf-Co-Cr-Mo high-entropy alloys as metallic biomaterials, Materials Science and Engineering: C 107 (2020) 110322.

[105] F. Otto, A. Dlouhý, K.G. Pradeep, M. Kuběnová, D. Raabe, G. Eggeler, E.P. George, Decomposition of the single-phase high-entropy alloy CrMnFeCoNi after prolonged anneals at intermediate temperatures, Acta Materialia 112 (2016) 40-52.

[106] B. Schuh, F. Mendez-Martin, B. Völker, E.P. George, H. Clemens, R. Pippan, A. Hohenwarter, Mechanical properties, microstructure and thermal stability of a nanocrystalline CoCrFeMnNi high-entropy alloy after severe plastic deformation, Acta Materialia 96 (2015) 258-268.

[107] D. Ma, M. Yao, K.G. Pradeep, C.C. Tasan, H. Springer, D. Raabe, Phase stability of non-equiatomic CoCrFeMnNi high entropy alloys, Acta Materialia 98 (2015) 288-296.

[108] K. Pradeep, N. Wanderka, P. Choi, J. Banhart, B. Murty, D. Raabe, Atomic-scale compositional characterization of a nanocrystalline AlCrCuFeNiZn high-entropy alloy using atom probe tomography, Acta Materialia 61(12) (2013) 4696-4706.

[109] X. Xu, P. Liu, S. Guo, A. Hirata, T. Fujita, T. Nieh, C. Liu, M. Chen, Nanoscale phase separation in a fcc-based CoCrCuFeNiAl0. 5 high-entropy alloy, Acta Materialia 84 (2015) 145-152.

[110] J. He, W. Liu, H. Wang, Y. Wu, X. Liu, T. Nieh, Z. Lu, Effects of Al addition on structural evolution and tensile properties of the FeCoNiCrMn high-entropy alloy system, Acta Materialia 62 (2014) 105-113.

[111] M.A. Hemphill, T. Yuan, G. Wang, J. Yeh, C. Tsai, A. Chuang, P. Liaw, Fatigue behavior of Al0. 5CoCrCuFeNi high entropy alloys, Acta Materialia 60(16) (2012) 5723-5734.

[112] M.-H. Chuang, M.-H. Tsai, W.-R. Wang, S.-J. Lin, J.-W. Yeh, Microstructure and wear behavior of AlxCo1. 5CrFeNi1. 5Tiy high-entropy alloys, Acta Materialia 59(16) (2011) 6308-6317.

[113] N. Guo, L. Wang, L. Luo, X. Li, R. Chen, Y. Su, J. Guo, H. Fu, Hot deformation characteristics and dynamic recrystallization of the MoNbHfZrTi refractory high-entropy alloy, Materials Science and Engineering: A 651 (2016) 698-707.

[114] C.-C. Juan, K.-K. Tseng, W.-L. Hsu, M.-H. Tsai, C.-W. Tsai, C.-M. Lin, S.-K. Chen, S.-J. Lin, J.-W. Yeh, Solution strengthening of ductile refractory HfMoxNbTaTiZr high-entropy alloys, Materials Letters 175 (2016) 284-287.

[115] M. Heidelmann, M. Feuerbacher, D. Ma, B. Grabowski, Structural anomaly in the high-entropy alloy ZrNbTiTaHf, Intermetallics 68 (2016) 11-15.

[116] G. Dirras, L. Lilensten, P. Djemia, M. Laurent-Brocq, D. Tingaud, J.-P. Couzinié, L. Perrière, T. Chauveau, I. Guillot, Elastic and plastic properties of as-cast equimolar TiHfZrTaNb high-entropy alloy, Materials Science and Engineering: A 654 (2016) 30-38.

[117] G. Dirras, H. Couque, L. Lilensten, A. Heczel, D. Tingaud, J.-P. Couzinié, L. Perrière, J. Gubicza, I. Guillot, Mechanical behavior and microstructure of Ti20Hf20Zr20Ta20Nb20 high-entropy alloy loaded under quasi-static and dynamic compression conditions, Materials Characterization 111 (2016) 106-113.

[118] J.-P. Couzinié, L. Lilensten, Y. Champion, G. Dirras, L. Perrière, I. Guillot, On the room temperature deformation mechanisms of a TiZrHfNbTa refractory high-entropy alloy, Materials Science and Engineering: A 645 (2015) 255-263.

[119] O. Senkov, J. Scott, S. Senkova, F. Meisenkothen, D. Miracle, C. Woodward, Microstructure and elevated temperature properties of a refractory TaNbHfZrTi alloy, Journal of Materials Science 47 (2012) 4062-4074.

[120] N. Stepanov, N.Y. Yurchenko, D. Skibin, M. Tikhonovsky, G. Salishchev, Structure and mechanical properties of the AlCrxNbTiV (x= 0, 0.5, 1, 1.5) high entropy alloys, Journal of Alloys and Compounds 652 (2015) 266-280.

[121] N. Stepanov, D. Shaysultanov, G. Salishchev, M. Tikhonovsky, Structure and mechanical properties of a light-weight AlNbTiV high entropy alloy, Materials Letters 142 (2015) 153-155.

[122] M. Poletti, S. Branz, G. Fiore, B. Szost, W. Crichton, L. Battezzati, Equilibrium high entropy phases in X-NbTaTiZr (X= Al, V, Cr and Sn) multiprincipal component alloys, Journal of Alloys and Compounds 655 (2016) 138-146.

[123] Y. Zhang, Y. Liu, Y. Li, X. Chen, H. Zhang, Microstructure and mechanical properties of a refractory HfNbTiVSi0. 5 high-entropy alloy composite, Materials Letters 174 (2016) 82-85.

[124] K.M. Youssef, A.J. Zaddach, C. Niu, D.L. Irving, C.C. Koch, A novel low-density, high-hardness, high-entropy alloy with close-packed single-phase nanocrystalline structures, Materials Research Letters 3(2) (2015) 95-99.

[125] X. Yang, S. Chen, J. Cotton, Y. Zhang, Phase stability of low-density, multiprincipal component alloys containing aluminum, magnesium, and lithium, Jom 66 (2014) 2009-2020.

[126] V.H. Hammond, M.A. Atwater, K.A. Darling, H.Q. Nguyen, L.J. Kecskes, Equal-channel angular extrusion of a low-density high-entropy alloy produced by high-energy cryogenic mechanical alloying, Jom 66 (2014) 2021-2029.

[127] L.J. Santodonato, Y. Zhang, M. Feygenson, C.M. Parish, M.C. Gao, R.J. Weber, J.C. Neuefeind, Z. Tang, P.K. Liaw, Deviation from high-entropy configurations in the atomic distributions of a multi-principal-element alloy, Nature communications 6(1) (2015) 5964.

[128] F. Otto, A. Dlouhý, C. Somsen, H. Bei, G. Eggeler, E.P. George, The influences of temperature and microstructure on the tensile properties of a CoCrFeMnNi high-entropy alloy, Acta Materialia 61(15) (2013) 5743-5755.

[129] Y. Zhang, S. Ma, J. Qiao, Morphology transition from dendrites to equiaxed grains for AlCoCrFeNi high-entropy alloys by copper mold casting and Bridgman solidification, Metallurgical and Materials Transactions A 43 (2012) 2625-2630.

[130] S. Ma, S. Zhang, M. Gao, P. Liaw, Y. Zhang, A successful synthesis of the CoCrFeNiAl 0.3 single-crystal, high-entropy alloy by Bridgman solidification, Jom 65 (2013) 1751-1758.

[131] S. Ma, S. Zhang, J. Qiao, Z. Wang, M. Gao, Z. Jiao, H. Yang, Y. Zhang, Superior high tensile elongation of a single-crystal CoCrFeNiAl0. 3 high-entropy alloy by Bridgman solidification, Intermetallics 54 (2014) 104-109.

[132] T. Zuo, X. Yang, P.K. Liaw, Y. Zhang, Influence of Bridgman solidification on microstructures and magnetic behaviors of a non-equiatomic FeCoNiAlSi high-entropy alloy, Intermetallics 67 (2015) 171-176.

[133] I. Kunce, M. Polanski, J. Bystrzycki, Structure and hydrogen storage properties of a high entropy ZrTiVCrFeNi alloy synthesized using Laser Engineered Net Shaping (LENS), International Journal of Hydrogen Energy 38(27) (2013) 12180-12189.

[134] I. Kunce, M. Polanski, K. Karczewski, T. Plocinski, K. Kurzydlowski, Microstructural characterisation of high-entropy alloy AlCoCrFeNi fabricated by laser engineered net shaping, Journal of Alloys and Compounds 648 (2015) 751-758.

[135] A.V. Kuznetsov, D.G. Shaysultanov, N.D. Stepanov, G.A. Salishchev, O.N. Senkov, Tensile properties of an AlCrCuNiFeCo high-entropy alloy in as-cast and wrought conditions, Materials Science and Engineering: A 533 (2012) 107-118.

[136] T.-t. Zuo, S.-b. Ren, P.K. Liaw, Y. Zhang, Processing effects on the magnetic and mechanical properties of FeCoNiAl 0.2 Si 0.2 high entropy alloy, International Journal of Minerals, Metallurgy, and Materials 20 (2013) 549-555.

[137] G. Laplanche, P. Gadaud, O. Horst, F. Otto, G. Eggeler, E. George, Temperature dependencies of the elastic moduli and thermal expansion coefficient of an equiatomic, single-phase CoCrFeMnNi high-entropy alloy, Journal of Alloys and Compounds 623 (2015) 348-353.

[138] O.A. Waseem, H.J. Ryu, Powder metallurgy processing of a WxTaTiVCr high-entropy alloy and its derivative alloys for fusion material applications, Scientific reports 7(1) (2017) 1926.

[139] H.-l. Wang, T.-x. Gao, J.-z. Niu, P.-j. Shi, J. Xu, Y. Wang, Microstructure, thermal properties, and corrosion behaviors of FeSiBAlNi alloy fabricated by mechanical alloying and spark plasma sintering, International Journal of Minerals, Metallurgy, and Materials 23 (2016) 77-82.

[140] C. Wang, W. Ji, Z. Fu, Mechanical alloying and spark plasma sintering of CoCrFeNiMnAl high-entropy alloy, Advanced Powder Technology 25(4) (2014) 1334-1338.

[141] Y. Liu, J. Wang, Q. Fang, B. Liu, Y. Wu, S. Chen, Preparation of superfine-grained high entropy alloy by spark plasma sintering gas atomized powder, Intermetallics 68 (2016) 16-22.

[142] O. Maulik, V. Kumar, Synthesis of AlFeCuCrMgx (x= 0, 0.5, 1, 1.7) alloy powders by mechanical alloying, Materials Characterization 110 (2015) 116-125.

[143] W. Ji, J. Zhang, W. Wang, H. Wang, F. Zhang, Y. Wang, Z. Fu, Fabrication and properties of TiB2-based cermets by spark plasma sintering with CoCrFeNiTiAl high-entropy alloy as sintering aid, Journal of the European Ceramic Society 35(3) (2015) 879-886.

[144] W. Ji, W. Wang, H. Wang, J. Zhang, Y. Wang, F. Zhang, Z. Fu, Alloying behavior and novel properties of CoCrFeNiMn high-entropy alloy fabricated by mechanical alloying and spark plasma sintering, Intermetallics 56 (2015) 24-27.

[145] Z. Fu, W. Chen, H. Wen, S. Morgan, F. Chen, B. Zheng, Y. Zhou, L. Zhang, E.J. Lavernia, Microstructure and mechanical behavior of a novel Co20Ni20Fe20Al20Ti20 alloy fabricated by mechanical alloying and spark plasma sintering, Materials Science and Engineering: A 644 (2015) 10-16.

[146] Z. Chen, W. Chen, B. Wu, X. Cao, L. Liu, Z. Fu, Effects of Co and Ti on microstructure and mechanical behavior of Al0. 75FeNiCrCo high entropy alloy prepared by mechanical alloying and spark plasma sintering, Materials Science and Engineering: A 648 (2015) 217-224.

[147] W. Ji, Z. Fu, W. Wang, H. Wang, J. Zhang, Y. Wang, F. Zhang, Mechanical alloying synthesis and spark plasma sintering consolidation of CoCrFeNiAl high-entropy alloy, Journal of Alloys and Compounds 589 (2014) 61-66.

[148] S. Mridha, S. Samal, P.Y. Khan, K. Biswas, Govind, Processing and consolidation of nanocrystalline Cu-Zn-Ti-Fe-Cr high-entropy alloys via mechanical alloying, Metallurgical and Materials Transactions A 44 (2013) 4532-4541.

[149] N. Koundinya, C. Sajith Babu, K. Sivaprasad, P. Susila, N. Kishore Babu, J. Baburao, Phase evolution and thermal analysis of nanocrystalline AlCrCuFeNiZn high entropy alloy produced by mechanical alloying, Journal of materials engineering and performance 22 (2013) 3077-3084.

[150] S. Praveen, B. Murty, R.S. Kottada, Alloying behavior in multi-component AlCoCrCuFe and NiCoCrCuFe high entropy alloys, Materials Science and Engineering: A 534 (2012) 83-89.

[151] K. Zhang, Z. Fu, J. Zhang, W. Wang, S. Lee, K. Niihara, Characterization of nanocrystalline CoCrFeNiTiAl high-entropy solid solution processed by mechanical alloying, Journal of alloys and compounds 495(1) (2010) 33-38.

[152] S. Varalakshmi, G. Appa Rao, M. Kamaraj, B. Murty, Hot consolidation and mechanical properties of nanocrystalline equiatomic AlFeTiCrZnCu high entropy alloy after mechanical alloying, Journal of materials science 45 (2010) 5158-5163.

[153] Y.-L. Chen, Y.-H. Hu, C.-A. Hsieh, J.-W. Yeh, S.-K. Chen, Competition between elements during mechanical alloying in an octonary multi-principal-element alloy system, Journal of alloys and compounds 481(1-2) (2009) 768-775.

[154] S. Varalakshmi, M. Kamaraj, B. Murty, Processing and properties of nanocrystalline CuNiCoZnAlTi high entropy alloys by mechanical alloying, Materials Science and Engineering: A 527(4-5) (2010) 1027-1030.

[155] Z. Fu, W. Chen, S. Fang, D. Zhang, H. Xiao, D. Zhu, Alloying behavior and deformation twinning in a CoNiFeCrAl0. 6Ti0. 4 high entropy alloy processed by spark plasma sintering, Journal of Alloys and Compounds 553 (2013) 316-323.

[156] M.-H. Tsai, J.-W. Yeh, J.-Y. Gan, Diffusion barrier properties of AlMoNbSiTaTiVZr high-entropy alloy layer between copper and silicon, Thin Solid Films 516(16) (2008) 5527-5530.

[157] V. Braic, A. Vladescu, M. Balaceanu, C. Luculescu, M. Braic, Nanostructured multi-element (TiZrNbHfTa) N and (TiZrNbHfTa) C hard coatings, Surface and Coatings Technology 211 (2012) 117-121.

[158] M. Niinomi, D. Kuroda, K.-i. Fukunaga, M. Morinaga, Y. Kato, T. Yashiro, A. Suzuki, Corrosion wear fracture of new β type biomedical titanium alloys, Materials Science and Engineering: A 263(2) (1999) 193-199.

[159] M. Atapour, A. Pilchak, G. Frankel, J. Williams, Corrosion behavior of β titanium alloys for biomedical applications, Materials Science and Engineering: C 31(5) (2011) 885-891.

[160] H. Dong, X. Li, T. Bell, Hardening response and tempering behaviour of electron beam surface melted Ti–8.5 Si alloy, Journal of alloys and compounds 283(1-2) (1999) 231-240.

[161] E. Collings, The physical metallurgy of titanium alloys, ASM Series in Metal Processing, Cleveland, Metals Park, OH: American Society for Metals (1984).

[162] M.O. Alam, A. Haseeb, Response of Ti–6Al–4V and Ti–24Al–11Nb alloys to dry sliding wear against hardened steel, Tribology International 35(6) (2002) 357-362.

[163] A. Choubey, B. Basu, R. Balasubramaniam, Tribological behaviour of Ti-based alloys in simulated body fluid solution at fretting contacts, Materials Science and Engineering: A 379(1-2) (2004) 234-239.

[164] N. Hua, W. Wang, Q. Wang, Y. Ye, S. Lin, L. Zhang, Q. Guo, J. Brechtl, P.K. Liaw, Mechanical, corrosion, and wear properties of biomedical Ti–Zr–Nb–Ta–Mo high entropy alloys, Journal of Alloys and Compounds 861 (2021) 157997.

[165] M. Akmal, H.-K. Park, H.J. Ryu, Plasma spheroidized MoNbTaTiZr high entropy alloy showing improved plasticity, Materials Chemistry and Physics 273 (2021) 125060.

[166] J. Berger, A. Jorge Jr, G. Asato, V. Roche, Formation of self-ordered oxide nanotubes layer on the equiatomic TiNbZrHfTa high entropy alloy and bioactivation procedure, Journal of Alloys and Compounds 865 (2021) 158837.

[167] S. Gurel, M. Yagci, D. Canadinc, G. Gerstein, B. Bal, H. Maier, Fracture behavior of novel biomedical Ti-based high entropy alloys under impact loading, Materials Science and Engineering: A 803 (2021) 140456.

[168] M. Akmal, A. Hussain, M. Afzal, Y.I. Lee, H.J. Ryu, Systematic study of (MoTa) xNbTiZr medium-and high-entropy alloys for biomedical implants-In vivo biocompatibility examination, Journal of Materials Science & Technology 78 (2021) 183-191.

[169] A. Savin, M.L. Craus, A. Bruma, F. Novy, S. Malo, M. Chlada, R. Steigmann, P. Vizureanu, C. Harnois, V. Turchenko, Microstructural analysis and mechanical properties of TiMo20Zr7Ta15Six alloys as biomaterials, Materials 13(21) (2020) 4808.

[170] A. Motallebzadeh, N.S. Peighambardoust, S. Sheikh, H. Murakami, S. Guo, D. Canadinc, Microstructural, mechanical and electrochemical characterization of TiZrTaHfNb and Ti1. 5ZrTa0. 5Hf0. 5Nb0. 5 refractory high-entropy alloys for biomedical applications, Intermetallics 113 (2019) 106572.

[171] U. Bhandari, H. Ghadimi, C. Zhang, F. Gao, S. Yang, S. Guo, Computational exploration of biomedical HfNbTaTiZr and Hf0. 5Nb0. 5Ta0. 5Ti1. 5Zr refractory high-entropy alloys, Materials Research Express 8(9) (2021) 096534.

[172] S. Gurel, A. Nazarahari, D. Canadinc, H. Çabuk, B. Bal, Assessment of biocompatibility of novel TiTaHf-based high entropy alloys for utility in orthopedic implants, Materials Chemistry and Physics 266 (2021) 124573.

[173] S. Gurel, M. Yagci, B. Bal, D. Canadinc, Corrosion behavior of novel Titanium-based high entropy alloys designed for medical implants, Materials Chemistry and Physics 254 (2020) 123377.

[174] T. Ishimoto, R. Ozasa, K. Nakano, M. Weinmann, C. Schnitter, M. Stenzel, A. Matsugaki, T. Nagase, T. Matsuzaka, M. Todai, Development of TiNbTaZrMo bio-high entropy alloy (BioHEA) super-solid solution by selective laser melting, and its improved mechanical property and biocompatibility, Scripta Materialia 194 (2021) 113658.

[175] J. González-Masís, J.M. Cubero-Sesin, A. Campos-Quirós, K. Edalati, Synthesis of biocompatible high-entropy alloy TiNbZrTaHf by high-pressure torsion, Materials Science and Engineering: A 825 (2021) 141869.

[176] W. Yang, S. Pang, Y. Liu, Q. Wang, P.K. Liaw, T. Zhang, Design and properties of novel Ti–Zr–Hf–Nb–Ta high-entropy alloys for biomedical applications, Intermetallics 141 (2022) 107421.

[177] J. Shittu, M. Pole, I. Cockerill, M. Sadeghilaridjani, L.V.K. Reddy, G. Manivasagam, H. Singh, H.S. Grewal, H.S. Arora, S. Mukherjee, Biocompatible high entropy alloys with excellent degradation resistance in a simulated physiological environment, ACS Applied Bio Materials 3(12) (2020) 8890-8900.

[178] C. Li, Y. Ma, X. Yang, M. Hou, New TiTaNbZrMo high-entropy alloys for metallic biomaterials, Materials Research Express 8(10) (2021) 105403.

[179] N.E. Koval, J.I. Juaristi, R.D. Muiño, M. Alducin, Elastic properties of the TiZrNbTaMo multi-principal element alloy studied from first principles, Intermetallics 106 (2019) 130-140.

[180] G. Perumal, H.S. Grewal, M. Pole, L.V.K. Reddy, S. Mukherjee, H. Singh, G. Manivasagam, H.S. Arora, Enhanced biocorrosion resistance and cellular response of a dual-phase high entropy alloy through reduced elemental heterogeneity, ACS Applied Bio Materials 3(2) (2020) 1233-1244.

[181] A.S. Navi, S.E. Haghighi, M. Haghpanahi, A. Momeni, Investigation of microstructure and corrosion of TiNbTaZrMo high-entropy alloy in the simulated body fluid, Journal of Bionic Engineering 18 (2021) 118-127.

[182] J. Normand, R. Moriche, C. García-Garrido, R.E. Sepúlveda Ferrer, E. Chicardi, Development of a TiNbTaMoZr-Based High Entropy Alloy with Low Young´ s Modulus by Mechanical Alloying Route, Metals 10(11) (2020) 1463.

[183] K. Alagarsamy, A. Fortier, M. Komarasamy, N. Kumar, A. Mohammad, S. Banerjee, H.-C. Han, R.S. Mishra, Mechanical properties of high entropy alloy al 0.1 cocrfeni for peripheral vascular stent application, Cardiovascular engineering and technology 7 (2016) 448-454.

[184] J. Gao, Y. Jin, Y. Fan, D. Xu, L. Meng, C. Wang, Y. Yu, D. Zhang, F. Wang, Fabricating antibacterial CoCrCuFeNi high-entropy alloy via selective laser melting and in-situ alloying, Journal of Materials Science & Technology 102 (2022) 159-165.

[185] S.-H. Chang, S.-K. Wu, B.-S. Liao, C.-H. Su, Selective leaching and surface properties of CoNiCr-based medium-/high-entropy alloys, Applied Surface Science 515 (2020) 146044.

[186] E. Zhou, D. Qiao, Y. Yang, D. Xu, Y. Lu, J. Wang, J.A. Smith, H. Li, H. Zhao, P.K. Liaw, A novel Cu-bearing high-entropy alloy with significant antibacterial behavior against corrosive marine biofilms, Journal of Materials Science & Technology 46 (2020) 201-210.

[187] T. Nagase, M. Todai, T. Nakano, Liquid Phase Separation in Ag-Co-Cr-Fe-Mn-Ni, Co Cr-Cu-Fe-Mn-Ni and Co-Cr-Cu-Fe-Mn-Ni-B High Entropy Alloys for Biomedical Application, Crystals 10(6) (2020) 527.

[188] A.A. Alamdari, U. Unal, A. Motallebzadeh, Investigation of microstructure, mechanical properties, and biocorrosion behavior of Ti1. 5ZrTa0. 5Nb0. 5W0. 5 refractory high-entropy alloy film doped with Ag nanoparticles, Surfaces and Interfaces 28 (2022) 101617.

[189] N. Tüten, D. Canadinc, A. Motallebzadeh, B. Bal, Microstructure and tribological properties of TiTaHfNbZr high entropy alloy coatings deposited on Ti6Al4V substrates, Intermetallics 105 (2019) 99-106.

[190] A. Motallebzadeh, M. Yagci, E. Bedir, C. Aksoy, D. Canadinc, Mechanical properties of TiTaHfNbZr high-entropy alloy coatings deposited on NiTi shape memory alloy substrates, Metallurgical and Materials Transactions A 49(6) (2018) 1992-1997.

[191] C. Aksoy, D. Canadinc, M. Yagci, Assessment of Ni ion release from TiTaHfNbZr high entropy alloy coated NiTi shape memory substrates in artificial saliva and gastric fluid, Materials Chemistry and Physics 236 (2019) 121802.

[192] N.S. Peighambardoust, A.A. Alamdari, U. Unal, A. Motallebzadeh, In vitro biocompatibility evaluation of Ti1. 5ZrTa0. 5Nb0. 5Hf0. 5 refractory high-entropy alloy film for orthopedic implants: Microstructural, mechanical properties and corrosion behavior, Journal of Alloys and Compounds 883 (2021) 160786.

[193] A. Motallebzadeh, M. Yagci, E. Bedir, C. Aksoy, D. Canadinc, Mechanical properties of TiTaHfNbZr high-entropy alloy coatings deposited on NiTi shape memory alloy substrates, Metallurgical and Materials Transactions A 49 (2018) 1992-1997.

[194] D. Liu, Z. Ma, H. Zhao, L. Ren, W. Zhang, Nano-indentation of biomimetic artificial bone material based on porous Ti6Al4V substrate with Fe22Co22Ni22Ti22Al12 high entropy alloy coating, Materials Today Communications 28 (2021) 102659.

[195] Y. Guo, X. Li, Q. Liu, A novel biomedical high-entropy alloy and its laser-clad coating designed by a cluster-plus-glue-atom model, Materials & Design 196 (2020) 109085.

[196] M. López Ríos, P.P. Socorro Perdomo, I. Voiculescu, V. Geanta, V. Crăciun, I. Boerasu, J.C. Mirza Rosca, Effects of nickel content on the microstructure, microhardness and corrosion behavior of high-entropy AlCoCrFeNix alloys, Scientific Reports 10(1) (2020) 21119.

[197] P.P. Socorro-Perdomo, N.R. Florido-Suárez, I. Voiculescu, J.C. Mirza-Rosca, Comparative eis study of alxcocrfeni alloys in ringer's solution for medical instruments, Metals 11(6) (2021) 928.

[198] J.F.Q. Rodrigues, G.S. Padilha, A.D. Bortolozo, W.R. Osorio, Effect of sintering time on corrosion behavior of an Ag/Al/Nb/Ti/Zn alloy system, Journal of Alloys and Compounds 834 (2020) 155039.

[199] A. Razazzadeh, M. Atapour, M.H. Enayati, Corrosion characteristics of TiNbMoMnFe high entropy thin film deposited on AISI316L for biomedical applications, Metals and Materials International (2021) 1-12.

[200] T. Hori, T. Nagase, M. Todai, A. Matsugaki, T. Nakano, Development of non-equiatomic Ti-Nb-Ta-Zr-Mo high-entropy alloys for metallic biomaterials, Scripta Materialia 172 (2019) 83-87.

[201] Y. Iijima, T. Nagase, A. Matsugaki, P. Wang, K. Ameyama, T. Nakano, Design and development of Ti–Zr–Hf–Nb–Ta–Mo high-entropy alloys for metallic biomaterials, Materials & Design 202 (2021) 109548.

[202] W.C. Oliver, G.M. Pharr, An improved technique for determining hardness and elastic modulus using load and displacement sensing indentation experiments, Journal of materials research 7(6) (1992) 1564-1583.

[203] T. Xiang, P. Du, Z. Cai, K. Li, W. Bao, X. Yang, G. Xie, Phase-tunable equiatomic and non-equiatomic Ti-Zr-Nb-Ta high-entropy alloys with ultrahigh strength for metallic biomaterials, Journal of Materials Science & Technology 117 (2022) 196-206.

[204] L. Bolzoni, E.M. Ruiz-Navas, E. Gordo, Feasibility study of the production of biomedical Ti–6Al–4V alloy by powder metallurgy, Materials Science and Engineering: C 49 (2015) 400-407.

[205] A. Amigó-Mata, M. Haro-Rodriguez, Á. Vicente-Escuder, V. Amigó-Borrás, Development of Ti–Zr alloys by powder metallurgy for biomedical applications, Powder Metallurgy 65(1) (2022) 31-38.

[206] S. Ehtemam-Haghighi, H. Attar, M.S. Dargusch, D. Kent, Microstructure, phase composition and mechanical properties of new, low cost Ti-Mn-Nb alloys for biomedical applications, Journal of Alloys and Compounds 787 (2019) 570-577.

[207] R. Van Noort, Titanium: the implant material of today, Journal of Materials Science 22(11) (1987) 3801-3811.

[208] T. Akahori, M. Niinomi, Fracture characteristics of fatigued Ti–6Al–4V ELI as an implant material, Materials Science and Engineering: A 243(1-2) (1998) 237-243.

[209] S. Sanivarapu, S. Moogla, R.S. Kuntcham, L.K. Kolaparthy, Implant fractures: Rare but not exceptional, Journal of Indian Society of Periodontology 20(1) (2016) 6.

[210] Y. Li, C. Yang, H. Zhao, S. Qu, X. Li, Y. Li, New developments of Ti-based alloys for biomedical applications, Materials 7(3) (2014) 1709-1800.

[211] M.F. López, J.A. Jiménez, A. Gutierrez, Corrosion study of surface-modified vanadium-free titanium alloys, Electrochimica Acta 48(10) (2003) 1395-1401.

[212] M. Niinomi, M. Nakai, J. Hieda, Development of new metallic alloys for biomedical applications, Acta biomaterialia 8(11) (2012) 3888-3903.

[213] I. Kopova, J. Stráský, P. Harcuba, M. Landa, M. Janeček, L. Bačákova, Newly developed Ti–Nb–Zr–Ta–Si–Fe biomedical beta titanium alloys with increased strength and enhanced biocompatibility, Materials Science and Engineering: C 60 (2016) 230-238.

[214] X. Yang, C.R. Hutchinson, Corrosion-wear of β-Ti alloy TMZF (Ti-12Mo-6Zr-2Fe) in simulated body fluid, Acta biomaterialia 42 (2016) 429-439.

[215] P. Mohan, T. Osman, V. Amigo, A. Mohamed, Effect of Fe content, sintering temperature and powder processing on the microstructure, fracture and mechanical behaviours of Ti-Mo-Zr-Fe alloys, Journal of Alloys and Compounds 729 (2017) 1215-1225.

[216] P.S. Nnamchi, C. Obayi, I. Todd, M. Rainforth, Mechanical and electrochemical characterisation of new Ti–Mo–Nb–Zr alloys for biomedical applications, Journal of the mechanical behavior of biomedical materials 60 (2016) 68-77.

[217] M. Bartmanski, A. Zielinski, B. Majkowska-Marzec, G. Strugala, Effects of solution composition and electrophoretic deposition voltage on various properties of nanohydroxyapatite coatings on the Ti13Zr13Nb alloy, Ceramics International 44(16) (2018) 19236-19246.

[218] M. Long, H. Rack, Subsurface deformation and microcrack formation in Ti–35Nb–8Zr–5Ta–O (x) during reciprocating sliding wear, Materials Science and Engineering: C 25(3) (2005) 382-388.

[219] K. Shemtov-Yona, D. Rittel, On the mechanical integrity of retrieved dental implants, Journal of the mechanical behavior of biomedical materials 49 (2015) 290-299.

[220] K.-K. Tseng, C.-C. Juan, S. Tso, H.-C. Chen, C.-W. Tsai, J.-W. Yeh, Effects of Mo, Nb, Ta, Ti, and Zr on mechanical properties of equiatomic Hf-Mo-Nb-Ta-Ti-Zr alloys, Entropy 21(1) (2018) 15.

[221] M. Niinomi, Design and development of metallic biomaterials with biological and mechanical biocompatibility, Journal of Biomedical Materials Research Part A 107(5) (2019) 944-954.

[222] A. Takeuchi, A. Inoue, Classification of bulk metallic glasses by atomic size difference, heat of mixing and period of constituent elements and its application to characterization of the main alloying element, Materials transactions 46(12) (2005) 2817-2829.

[223] Z. Fu, W. Chen, Z. Chen, H. Wen, E.J. Lavernia, Influence of Ti addition and sintering method on microstructure and mechanical behavior of a medium-entropy Al0. 6CoNiFe alloy, Materials Science and Engineering: A 619 (2014) 137-145.

[224] M. Hussein, C. Suryanarayana, N. Al-Aqeeli, Fabrication of nano-grained Ti–Nb–Zr biomaterials using spark plasma sintering, Materials & Design 87 (2015) 693-700.

[225] D.A. Porter, K.E. Easterling, Phase transformations in metals and alloys (revised reprint), CRC press2009.

[226] G. Le, A. Godfrey, N. Hansen, Structure and strength of aluminum with sub-micrometer/micrometer grain size prepared by spark plasma sintering, Materials & Design 49 (2013) 360-367.

[227] B. Henriques, D. Soares, F. Silva, Microstructure, hardness, corrosion resistance and porcelain shear bond strength comparison between cast and hot pressed CoCrMo alloy for metal–ceramic dental restorations, Journal of the mechanical behavior of biomedical materials 12 (2012) 83-92.

[228] S. Ali, M. Irfan, U.M. Niazi, A.M.A. Rani, A. Rashedi, S. Rahman, M.K.A. Khan, M.A. Alsaiari, S. Legutko, J. Petrů, Microstructure and mechanical properties of modified 316L stainless steel alloy for biomedical applications using powder metallurgy, Materials 15(8) (2022) 2822.

[229] S.S.d. Rocha, G.L. Adabo, G.E.P. Henriques, M.A.d.A. Nóbilo, Vickers hardness of cast commercially pure titanium and Ti-6Al-4V alloy submitted to heat treatments, Brazilian dental journal 17 (2006) 126-129.

[230] T. Narushima, New-generation metallic biomaterials, Metals for biomedical devices, Elsevier2019, pp. 495-521.

[231] D. Seshagirirao, S. Raju, K.M. Mantrala, Evaluation of Compression, Wear and Electrochemical Behavior of CoCrMo Alloy Samples Fabricated with Direct Metal Laser Sintering, Journal of Materials Engineering and Performance 32(17) (2023) 7633-7639.

[232] P.H.S. Masooth, G. Bharathiraja, V. Jayakumar, K. Palani, Microstructure and mechanical characterisation of ZrO2 reinforced Ti6Al4V metal matrix composites by powder metallurgy method, Materials Research Express 9(2) (2022) 020003.

[233] W. Zhang, S. Zhang, H. Liu, L. Ren, Q. Wang, Y. Zhang, Effects of surface roughening on antibacterial and osteogenic properties of Ti-Cu alloys with different Cu contents, Journal of Materials Science & Technology 88 (2021) 158-167.

[234] X. Tong, D. Zhang, X. Zhang, Y. Su, Z. Shi, K. Wang, J. Lin, Y. Li, J. Lin, C. Wen, Microstructure, mechanical properties, biocompatibility, and in vitro corrosion and degradation behavior of a new Zn–5Ge alloy for biodegradable implant materials, Acta biomaterialia 82 (2018) 197-204.

[235] L. Chézeau, A. Tchinda, G. Pierson, P. Bravetti, L. Ferrari, O. Joubert, M. Zaiou, B.H. Rihn, In Vitro Molecular Study of Titanium-Niobium Alloy Biocompatibility, Biomedicines 10(8) (2022) 1898.

[236] A. Falanga, P. Laheurte, H. Vahabi, N. Tran, S. Khamseh, H. Saeidi, M. Khodadadi, P. Zarrintaj, M.R. Saeb, M. Mozafari, Niobium-treated titanium implants with improved cellular and molecular activities at the tissue–implant interface, Materials 12(23) (2019) 3861.

[237] Y. Bai, Y. Deng, Y. Zheng, Y. Li, R. Zhang, Y. Lv, Q. Zhao, S. Wei, Characterization, corrosion behavior, cellular response and in vivo bone tissue compatibility of titanium–niobium alloy with low Young's modulus, Materials Science and Engineering: C 59 (2016) 565-576.

[238] M. Navarro, A. Michiardi, O. Castano, J. Planell, Biomaterials in orthopaedics, Journal of the royal society interface 5(27) (2008) 1137-1158.

[239] P. Wang, L. Wu, Y. Feng, J. Bai, B. Zhang, J. Song, S. Guan, Microstructure and mechanical properties of a newly developed low Young's modulus Ti–15Zr–5Cr–2Al biomedical alloy, Materials Science and Engineering: C 72 (2017) 536-542.

[240] T. Devine, F. Kummer, J. Wulff, Wrought cobalt-chromium surgical implant alloys, Journal of Materials Science 7(1) (1972) 126-128.

[241] J. Cohen, R. Rose, J. Wulff, Recommended heat treatment and alloy additions for cast Co-Cr surgical implants, Journal of Biomedical Materials Research 12(6) (1978) 935-937.

[242] X. Wu, R. Liu, X. Zhang, M.X. Yao, Microstructure and performance characterization of a novel cobalt high-entropy alloy, Metallurgical and Materials Transactions A 52 (2021) 4066-4089.

[243] C. Xiang, H. Fu, Z. Zhang, E.-H. Han, H. Zhang, J. Wang, G. Hu, Effect of Cr content on microstructure and properties of Mo0. 5VNbTiCrx high-entropy alloys, Journal of Alloys and Compounds 818 (2020) 153352.

[244] A. Biesiekierski, J. Wang, M.A.-H. Gepreel, C. Wen, A new look at biomedical Ti-based shape memory alloys, Acta biomaterialia 8(5) (2012) 1661-1669.

[245] B.S. Murty, J.-W. Yeh, S. Ranganathan, P. Bhattacharjee, High-entropy alloys, Elsevier2019.

[246] M. Ogawa, Y. Tohma, H. Ohgushi, Y. Takakura, Y. Tanaka, Early fixation of cobalt-chromium based alloy surgical implants to bone using a tissue-engineering approach, International Journal of Molecular Sciences 13(5) (2012) 5528-5541.

[247] Y. Saberi, S.M. Zebarjad, G.H. Akbari, On the role of nano-size SiC on lattice strain and grain size of Al/SiC nanocomposite, Journal of alloys and compounds 484(1-2) (2009) 637-640.

[248] V.K. Pandey, Y. Shadangi, V. Shivam, J. Basu, K. Chattopadhyay, B. Majumdar, B. Sarma, N.K. Mukhopadhyay, Synthesis, characterization and thermal stability of nanocrystalline MgAlMnFeCu low-density high-entropy alloy, Transactions of the Indian Institute of Metals 74 (2021) 33-44.

[249] R.P. Kolli, A. Devaraj, A review of metastable beta titanium alloys, Metals 8(7) (2018) 506.

[250] Z. Fu, W. Chen, H. Xiao, L. Zhou, D. Zhu, S. Yang, Fabrication and properties of nanocrystalline Co0. 5FeNiCrTi0. 5 high entropy alloy by MA–SPS technique, Materials & Design 44 (2013) 535-539.

[251] C. Suryanarayana, Mechanical alloying and milling, Progress in materials science 46(1-2) (2001) 1-184.

[252] S. Lei, J. Zhang, X. An, Y. Guo, X. Xu, Z. Ma, W. Yao, Q. Kong, Mechanical and corrosion properties of Ti–29Nb–13Ta-4.6 Zr alloy prepared by cryomilling and spark plasma sintering, Vacuum 215 (2023) 112316.

[253] G. Walunj, J. Desai, S. Bohara, R. Contieri, C. Kothapalli, E. Ivanov, T. Borkar, Light weight-low modulus biocompatible titanium alloys processed via spark plasma sintering, Journal of Alloys and Metallurgical Systems 3 (2023) 100018.

[254] T. Xiang, Z. Cai, P. Du, K. Li, Z. Zhang, G. Xie, Dual phase equal-atomic NbTaTiZr high-entropy alloy with ultra-fine grain and excellent mechanical properties fabricated by spark plasma sintering, Journal of Materials Science & Technology 90 (2021) 150-158.

[255] F. Xie, X. He, Y. Lv, M. Wu, X. He, X. Qu, Selective laser sintered porous Ti–(4–10) Mo alloys for biomedical applications: Structural characteristics, mechanical properties and corrosion behaviour, Corrosion Science 95 (2015) 117-124.

[256] H. Ibrahim, S.N. Esfahani, B. Poorganji, D. Dean, M. Elahinia, Resorbable bone fixation alloys, forming, and post-fabrication treatments, Materials Science and Engineering: C 70 (2017) 870-888.

[257] Y. Wu, Y. Cai, X. Chen, T. Wang, J. Si, L. Wang, Y. Wang, X. Hui, Phase composition and solid solution strengthening effect in TiZrNbMoV high-entropy alloys, Materials & Design 83 (2015) 651-660.

[258] J. Gan, C. Berndt, Plasma surface modification of metallic biomaterials, Surface coating and modification of metallic biomaterials, Elsevier2015, pp. 103-157.

[259] N. Guo, L. Wang, L. Luo, X. Li, Y. Su, J. Guo, H. Fu, Microstructure and mechanical properties of refractory MoNbHfZrTi high-entropy alloy, Materials & Design 81 (2015) 87-94.

[260] W. Murphy, J. Black, G.W. Hastings, Handbook of biomaterial properties, Springer2016.

[261] Z. Lei, H. Zhang, E. Zhang, J. You, X. Ma, X. Bai, Antibacterial activities and biocompatibilities of Ti-Ag alloys prepared by spark plasma sintering and acid etching, Materials Science and Engineering: C 92 (2018) 121-131.

[262] Y. Kao, G. Tu, C. Huang, T. Liu, A study on the hardness variation of α-and β-pure titanium with different grain sizes, Materials Science and Engineering: A 398(1-2) (2005) 93-98.

[263] A. Nocivin, D. Raducanu, B. Vasile, C. Trisca-Rusu, E.M. Cojocaru, A. Dan, R. Irimescu, V.D. Cojocaru, Tailoring a low young modulus for a beta titanium alloy by combining severe plastic deformation with solution treatment, Materials 14(13) (2021) 3467.

[264] M. Jenko, M. Gorenšek, M. Godec, M. Hodnik, B.Š. Batič, Č. Donik, J.T. Grant, D. Dolinar, Surface chemistry and microstructure of metallic biomaterials for hip and knee endoprostheses, Applied Surface Science 427 (2018) 584-593.

[265] C.K. Srivastav, R. Kapoor, D. Khan, Fatigue behaviour of dental implant using finite element method, Materials Today: Proceedings 56 (2022) 1143-1150.

[266] C. Kumar Srivastav, D. Khan, Constitutive models based on titanium and its alloys for studying deformation and stresses in dental prosthesis: A comprehensive review, Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science 0(0) 09544062231215587.

[267] M.Z. Ibrahim, A.A. Sarhan, F. Yusuf, M. Hamdi, Biomedical materials and techniques to improve the tribological, mechanical and biomedical properties of orthopedic implants–A review article, Journal of Alloys and Compounds 714 (2017) 636-667.

[268] E. Eisenbarth, D. Velten, M. Müller, R. Thull, J. Breme, Biocompatibility of β-stabilizing elements of titanium alloys, Biomaterials 25(26) (2004) 5705-5713.

[269] D. Lin, J.C. Lin, C.-P. Ju, Structure and properties of Ti–7.5 Mo–xFe alloys, Biomaterials 23(8) (2002) 1723-1730.

[270] D.M. Findlay, K. Welldon, G.J. Atkins, D.W. Howie, A.C. Zannettino, D. Bobyn, The proliferation and phenotypic expression of human osteoblasts on tantalum metal, Biomaterials 25(12) (2004) 2215-2227.

[271] I. Milošev, CoCrMo alloy for biomedical applications, Biomedical Applications (2012) 1-72.

[272] M. Moravej, A. Purnama, M. Fiset, J. Couet, D. Mantovani, Electroformed pure iron as a new biomaterial for degradable stents: In vitro degradation and preliminary cell viability studies, Acta biomaterialia 6(5) (2010) 1843-1851.

[273] K. Sriraman, S.G.S. Raman, S. Seshadri, Influence of crystallite size on the hardness and fatigue life of steel samples coated with electrodeposited nanocrystalline Ni–W alloys, Materials Letters 61(3) (2007) 715-718.

[274] L. Lü, M.O. Lai, Mechanical alloying, Springer Science & Business Media1997.

[275] Y. Shen, H.H. Hng, J.T. Oh, Synthesis and characterization of high-energy ball milled Ni–15% Fe–5% Mo, Journal of alloys and compounds 379(1-2) (2004) 266-271.

[276] Y. Guo, M. Li, C. Chen, P. Li, W. Li, Q. Ji, Y. Zhang, Y. Chang, Oxide dispersion strengthened FeCoNi concentrated solid-solution alloys synthesized by mechanical alloying, Intermetallics 117 (2020) 106674.

[277] H. Jiang, Z. Ni, J. Wang, D. Qiao, Y. Lv, G. Zhang, L. Liu, Effect of electric current pulse on microstructure and mechanical properties of AlCoCrFeNi2. 1 eutectic high entropy alloy, Materials Characterization 201 (2023) 112952.

[278] Y. Yan, A. Neville, D. Dowson, Tribo-corrosion properties of cobalt-based medical implant alloys in simulated biological environments, Wear 263(7-12) (2007) 1105-1111.

[279] Z. Doni, A. Alves, F. Toptan, J. Gomes, A. Ramalho, M. Buciumeanu, L. Palaghian, F. Silva, Dry sliding and tribocorrosion behaviour of hot pressed CoCrMo biomedical alloy as compared with the cast CoCrMo and Ti6Al4V alloys, Materials & Design (1980-2015) 52 (2013) 47-57.

[280] I. Cvijović-Alagić, Z. Cvijović, S. Mitrović, V. Panić, M. Rakin, Wear and corrosion behaviour of Ti–13Nb–13Zr and Ti–6Al–4V alloys in simulated physiological solution, Corrosion science 53(2) (2011) 796-808.

[281] P.A. Dearnley, B. Mallia, The chemical wear (corrosion-wear) of novel Cr based hard coated 316L austenitic stainless steels in aqueous saline solution, Wear 306(1-2) (2013) 263-275.

[282] M. Wang, Y. Ji, D.-H. Xia, D. Zhou, Y. Zhu, Z. Gao, Z. Qin, W. Hu, Effect of substrate orientations on the electrochemical and localized corrosion behavior of a quad-layer Al alloy composite, Journal of Materials Science & Technology 176 (2024) 57-68.

[283] S. Fajardo, D.M. Bastidas, M. Criado, J. Bastidas, Electrochemical study on the corrosion behaviour of a new low-nickel stainless steel in carbonated alkaline solution in the presence of chlorides, Electrochimica Acta 129 (2014) 160-170.

[284] Q. Zhou, S. Sheikh, P. Ou, D. Chen, Q. Hu, S. Guo, Corrosion behavior of Hf0. 5Nb0. 5Ta0. 5Ti1. 5Zr refractory high-entropy in aqueous chloride solutions, Electrochemistry Communications 98 (2019) 63-68.

[285] X. Cheng, Y. Huang, B. Zhou, P. Xue, H. Fan, J. Sun, Electrochemical and XPS studies of a Nb-containing Ti-based glass-forming alloy system in H2SO4 solution, Electrochemistry Communications 60 (2015) 139-143.

[286] A. Lasia, Electrochemical Impedance Spectroscopy EIS, and Corrosion, (2011).

[287] S.L. de Assis, S. Wolynec, I. Costa, Corrosion characterization of titanium alloys by electrochemical techniques, Electrochimica Acta 51(8-9) (2006) 1815-1819.

[288] I.C. Lavos-Valereto, S. Wolynec, I. Ramires, A.C. Guastaldi, I. Costa, Electrochemical impedance spectroscopy characterization of passive film formed on implant Ti–6Al–7Nb alloy in Hank's solution, Journal of Materials Science: Materials in Medicine 15(1) (2004) 55-59.

[289] P. Politzer, P. Lane, M.C. Concha, Y. Ma, J.S. Murray, An overview of halogen bonding, Journal of molecular modeling 13 (2007) 305-311.

[290] W.R. Osório, A. Cremasco, P.N. Andrade, A. Garcia, R. Caram, Electrochemical behavior of centrifuged cast and heat treated Ti–Cu alloys for medical applications, Electrochimica Acta 55(3) (2010) 759-770.

[291] A. Cremasco, W.R. Osorio, C.M. Freire, A. Garcia, R. Caram, Electrochemical corrosion behavior of a Ti–35Nb alloy for medical prostheses, Electrochimica Acta 53(14) (2008) 4867-4874.

[292] S. Karimi, T. Nickchi, A. Alfantazi, Effects of bovine serum albumin on the corrosion behaviour of AISI 316L, Co–28Cr–6Mo, and Ti–6Al–4V alloys in phosphate buffered saline solutions, Corrosion science 53(10) (2011) 3262-3272.

[293] G. Astm, Standard practice for calculation of corrosion rates and related information from electrochemical measurements, G102-89 (2004).

[294] Y. Shi, B. Yang, X. Xie, J. Brechtl, K.A. Dahmen, P.K. Liaw, Corrosion of Al xCoCrFeNi high-entropy alloys: Al-content and potential scan-rate dependent pitting behavior, Corrosion Science 119 (2017) 33-45.

[295] M. Schutze, R. Bender, K. Schutze, Corrosion Resistance of High-Performance Materials, Wiley-VCH: Frankfurt, Germany, 2012.

[296] R.H. Oskouei, M.R. Barati, H. Farhoudi, M. Taylor, L.B. Solomon, A new finding on the in-vivo crevice corrosion damage in a CoCrMo hip implant, Materials Science and Engineering: C 79 (2017) 390-398.

[297] Z. Shen, X. Zeng, S. Wu, H. Yu, B.M. Jenkins, P. Karamched, M.P. Moody, J. Zhang, Y. Wang, S. Lozano-Perez, The origin of different morphology of internal oxide precipitates in ferritic and austenitic steels, Journal of Materials Science & Technology 161 (2023) 88-100.

[298] K. Chen, J. Wang, L. Zhang, H. Wang, X. An, Y. Li, J. Zhang, Z. Shen, X. Zeng, A high-resolution study of the different surface state effects on the corrosion behaviors of a ferritic steel and an austenitic steel in supercritical water, Corrosion Science 209 (2022) 110757.

[299] J. Pouilleau, D. Devilliers, F. Garrido, S. Durand-Vidal, E. Mahé, Structure and composition of passive titanium oxide films, Materials Science and Engineering: B 47(3) (1997) 235-243.

[300] G.-l. Xue, H.-l. Yang, H.-x. Xing, C.-r. Ye, J. Liu, J.-l. Miao, J.-m. Ruan, Effect of Ti on microstructure, mechanical properties and corrosion resistance of Zr-Ta-Ti alloys processed by spark plasma sintering, Journal of Central South University 27(8) (2020) 2185-2197.

[301] G. Al Hawajreh, G. Gonzalez, L. Romero-Resendiz, A. Vidilli, L. Otani, V. Amigó, Effect of the Ti/Ta ratio on the feasibility of porous Ti25+ x-Nb25-Zr25-Ta25-x (X= 0, 5, and 10) alloys for biomedical applications, journal of materials research and technology 24 (2023) 4364-4378.

[302] M. Uthayakumar, S. Aravindan, K. Rajkumar, Wear performance of Al–SiC–B4C hybrid composites under dry sliding conditions, Materials & Design 47 (2013) 456-464.

[303] L.-j. Xu, S.-l. Xiao, T. Jing, Y.-Y. Chen, Microstructure, mechanical properties and dry wear resistance of β-type Ti–15Mo–xNb alloys for biomedical applications, Transactions of Nonferrous Metals Society of China 23(3) (2013) 692-698.

[304] D. Iijima, T. Yoneyama, H. Doi, H. Hamanaka, N. Kurosaki, Wear properties of Ti and Ti–6Al–7Nb castings for dental prostheses, Biomaterials 24(8) (2003) 1519-1524.

[305] J. Archard, Contact and rubbing of flat surfaces, Journal of applied physics 24(8) (1953) 981-988.

[306] A. Poulia, E. Georgatis, A. Lekatou, A. Karantzalis, Microstructure and wear behavior of a refractory high entropy alloy, International Journal of Refractory Metals and Hard Materials 57 (2016) 50-63.

LIST OF JOURNAL PUBLICATIONS

1. **Srivastav, C.**, Anurag N S., Pandey A. K., Prasad N. K. and Khan, Debashis (2023) Design, Preparation and Study of Microstructure, Phase Evolution and Thermal Stability of Ti-$Co_{0.35}$-$Cr_{0.35}$-Nb-Zr Nanocrystalline HEA for Biomedical Applications, **Materials Today Communications,** Vol. 35, pp. 105557, Journal impact factor: 3.8 (2023).

2. **Srivastav, C.**, Gangwar, M., Prasad N. K. and Khan, Debashis (2024) Structural, Mechanical and Biocompatible Evaluation of Nanocrystalline Ti-Nb-Ta-Cr-$Co_{0.2}$ HEA for Implant Applications, **Materials Today Communications,** Vol. 39, pp. 109355, Journal impact factor: 3.8 (2023).

3. **Srivastav, C.**, Prasad N. K. and Khan, Debashis (2024) Nanocrystalline Ti-Nb-Ta-$Fe_{0.35}$-$Co_{0.35}$ high entropy alloy as a possible hard tissue implant. **Journal of Materials Engineering and Performance**, Journal impact factor: 2.2 (2023) (Revision submitted).

4. **Srivastav, C.**, Prasad N. K. and Khan, Debashis (2024) Corrosion and tribological behaviour of sintered Ti-$Co_{0.35}$-$Cr_{0.35}$-Nb-Zr, Ti-Nb-Ta-Cr-$Co_{0.2}$, and Ti-Nb-Ta-$Fe_{0.35}$-$Co_{0.35}$ HEAs in the presence of simulated body fluid. **Journal of the Mechanical Behavior of Biomedical Materials**, Journal impact factor: 3.9 (2023) (Under review).

5. **Srivastav, C.** and Khan, Debashis (2023) Constitutive models based on titanium and its alloys for studying deformation and stresses in dental prosthesis: A comprehensive

review. **Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science**, Vol. 238 (11), Journal impact factor: **2.0 (2022)**

6. **Srivastav, C.**, Kapoor, R. and Khan, Debashis (2022) "Fatigue behaviour of dental implant using finite element method." **Materials Today Proceedings**, Vol. 56, No. 3, pp. 1143-1150.

LIST OF CONFERENCE PAPERS

1. **Srivastav, C.**, Kapoor, R. and Khan, Debashis (2022) Analysis of Fatigue Behaviour of Dental Implant using Finite Element Method, **1st International Conference on Advances in Mechanical Engineering and Material Science (ICAMEMS-22)**, January 22-24, 2022, VIT-AP University, India.

2. **Srivastav, C.** and Khan, Debashis (2022) Analysis of Fatigue Crack Growth Behaviour of Titanium Foams for Bioimplant Applications, **International Conference on Advanced Functional Materials: Future Perspectives (AFMFP-2022)**, August 6-8, 2022, NIT, Jalandhar, India.

3. **Srivastav, C.**, Pandey, A. K., Khan, Debashis and Prasad, N. K. (2023) Design and Study of Phase Evolution, Mechanical and Tribological Properties of Ti-Nb-Mo-Cr-$Co_{0.2}$ HEA for Biomedical Applications, **12th International Conference on Tribology (ICT)**, October 5-7, 2023, NIT, Srinagar, India.