

Professor Dr. Eng. Ali Sabea Hammood



University of Kufa

Faculty of Engineering

Materials Engineering Department

**Biomedical Materials Engineering
Track**

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Research Gate: - https://www.researchgate.net/profile/Ali_Hammood

Google Scholar: - <https://scholar.google.com/citations?user=TrZR7DgAAAAJ&hl=en>:

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B.Sc., M.Sc. and Ph.D. from University of Technology in Production and Metallurgy Engineering-Metallurgy Engineering, Head of Materials Engineering Department from 2007 - 2014, Head of Biomedical Materials Engineering Track. He has over 40 scientific researches publications, authored 5 engineering scientific books and has supervised 3 Ph.D. Projects and 6 M.Sc. Dissertations and having a patent.

Research Interests:

1-Advanced Materials.

2-Biomaterials.

3-Powder technology.

4-Composite Materials.

5- Corrosion.

6-Casting.

7-Laser Treatment.

8-Nano-materials.

Teaching Interests:

1-Biomaterials.

2-Design and Selection of Materials.

3-Engineering Materials.

4-Corrosion Engineering.

- 5-Metallurgy Engineering.
- 6-Manufacturing Processes.
- 7-Materials Testing

Selected Publishing Researches:

1-Kadhim Mohammed Jasim, Sami Ibrahim Al-Rubaiey, Ali Sabea Hammood, The influence of laser specific energy on laser sealing of plasma sprayed yttria partially stabilized zirconia coating, Optics and Lasers in Engineering, 51(2), 2013, pp.159–166.

<https://www.sciencedirect.com/science/article/abs/pii/S0143816612002576>

Impact Factor:1.838

2- Prof. Dr. Muhsin J. Jweeg, Asst. Prof. Dr. Ali S. Hammood and Muhannad Al-Waily, Experimental and Theoretical Studies of Mechanical Properties for Reinforcement Fiber Types of Composite Materials, International Journal of Mechanical & Mechatronics Engineering(IJMME)-IJENS Vol:12 No:04, 2012.

3- Ali Hammood and Zainab Radeef, Characterizations of Their Properties, Chapter 12 in Composite Materials and Their Properties, INTECH, Edited by Ning Hu., 2012.

4- Muhsin J. Jweeg¹, Ali S. Hammood, and Muhannad Al-Waily, A Suggested Analytical Solution of Isotropic Composite Plate with Crack Effect, International Journal of Mechanical & Mechatronics Engineering(IJMME)-IJENS Vol:12 No:05, 2012.

5-Muhsin J. Jweeg¹, Ali S. Hammood, and Muhannad Al-Waily, A Suggested Analytical solution of Orthotropic Composite Plate Structure with Crack Effect, International Journal of Mechanical Engineering (IJME), Sep. 2012.

6-Muhsin J. Jweeg¹, Ali S. Hammood, and Muhannad Al-Waily, A Suggested Analytical Solution of Different Composite Plate Types with Crack Effect, Journal of Science and Technology, Vol.2, No.8, 2012.

7- Kadhim Mohammed Jasim, Ali Sabea Hammood, Laser Heat Treatment for Electron Beam Evaporation coating, Journal of Engineering and Technology, Vol.15-No. 11, 1996.

8-Ali S. Hammood, and Muhannad Al-Waily, Ali Abd. Kamaz, Effect of fiber orientation on the fatigue of glass-fiber reinforcement epoxy composite material, The Iraqi Journal for Mechanical and Materials Engineering, Vol.11-No. 2, 2011.

9-Ali S. Hammood, and Muhannad Al-Waily, Experimental and Analytical Study of Tensile Properties for Hyper Composite Material, The Iraqi Journal for Mechanical and Materials Engineering, Vol.10-No. 1, 2010.

10-Ali Sabea Hammood, A Study for some of Mechanical Behavior of Flame – Sprayed Coatings, Proceedings of The First Conference for Pure and Applied Sciences-University of Kufa, March 2008.

11- Ali S.Hammood,Laser Surface Treatment of High Speed Steel ,The Iraqi Journal for Mechanical and Materials Engineering ,Vol.6-No. 5, 2000.

12-Talib K. Ibrahim, Ali S.Humod, Rapid Solidification processing of Al-3 wt. % Mg Alloy ,Journal of Engineering and Technology ,Vol.25-No. 10, 2007.

<https://www.iasj.net/iasj?func=fulltext&aId=25958>

13- Mohammed Jasim Kadhim, Ali Sabea Humod,The corrosion of cupronickel alloys in 3.5% sodium chloride & ammonium nitrate solution, Al-Kufa Journal , Pure And Applied Sciences, Vol.8-No. 2, 2007.

14 -Ali S.Humod, Mohammed J. Kadhim, The Effect of Homogenization on Microstructure Features and Corrosion Behavior of Cast Cupronickel Alloys, Al-Kufa Journal – Pure And Applied Sciences, Vol.8-No. 1, 2007.

15 -Ali SabeaHumod, Preparation of Melt-Spun Al-4.5%Cu Ribbons, Babylon University Journal Vol.10-No. 5, 2005.

16 -Mohammed J. Kadhim, Ali S. Humod Foundry Characteristics & Corrosion Behaviour of a Cupronickel Alloys, The Iraqi Journal for Mechanical and Materials Engineering, Vol.5-No. 1, 2005.

17- Ali Sabea Humod, Analysis of Factors Influencing the Plasma Sprayed Layer Qualities, Babylon University Journal– Pure and Applied Sciences, Vol.6-No. 5, 2000.

18-Kadhim Mohammed Jasim, Ali Sabea Hammood, Laser Heat Treatment for flame spray coating, Al-Anbar University Journal, January 1999.

19- Ali Sabea Hammood, Study of Hardness for carbon Steel, First Kufa University Scientific conference, April 1996.

20- Kadhim Mohammed Jasim, Ali Sabea Hammood, Pulse laser Surface Treatment of Plasma Sprayed Coatings, Journal of Engineering and Technology, Vol.19-No. 3, 2000.

21-Kadhim Mohammed Jasim, Ali Sabea Hammood, Laser Heat Treatment For Electron Beam Evaporation coating, Journal of Engineering and Technology, Vol.15-No. 11 , 1996.

22-Talib K. Ibrahima, Falih Hasan Hamza, Ali Sabea Hammood, Preparation of Ultra Fine Powder by Low Power CO2 Laser, Journal of Engineering and Technology Vol.19-No. 6, 2000.

23- Ali S. Hammood and Haider Mahdi Lieth, A Study the Effect of Retained Austenite on Fatigue Life of Austempering Ductile Iron by Using Artificial Neural Networks, International Journal of Current Engineering and Technology, ISSN 2277 – 4106, Vol.3, No.5, 2013.

24- Ali S. Hammood, Haider Mahdi lieth, Development Artificial Neural Network Model to Study the Influence of Oxidation Process and Zinc-Electroplating on Fatigue Life of Gray Cast Iron, International Journal of Mechanical & Mechatronics Engineering IJMME-IJENS, Vol:12, No:05, 2012.

25- Ahmad. K. Jassim, Ali S. Hammood, Sustainable Manufacturing Process for Bulk Metallic Glasses Production Using Rapid Solidification with Melt Spinning Technique, 2014 International Conference on Material Science and Material Engineering, March 14-16 March, 2014, Chicago, Illinois, USA.

26- Ahmad. K. Jassim, Ali S. Hammood, Single Roll Melt Spinning Technique Applied to Produce Micro Thickness Rapid Solidified Ribbons Type 5083 (Al-Mg) alloy, Paper ID: 201404-P00129 International Parallel Conferences on Researches in Industrial & Applied Sciences, April, 25th & 26th 2014; Dubai, UAE.

27- Ahmad. K. Jassim, Ali S. Hammood, Production of Al-Mg Alloy Ribbons by Using Single Roller Wheel Melt Spinning as a Non-Conventional Forming Technology, Basra Journal for Engineering Sciences, Vol. 14, No. 2, 2014.

28- Ahmad. K. Jassim, Ali S. Hammood, Single Roll Melt Spinning Technique Applied as a Sustainable Forming Process to Produce Very Thin Ribbons of 5052 and 5083 Al-Mg Alloys Directly from Liquid State, Procedia CIRP, 40, 2016, pp.133-137.

<https://www.sciencedirect.com/science/article/pii/S2212827116000949>

29- Ammar Abdulkareem Hashim, Ali Sabea Hammood, Nawal Jasem Hammadi, Evaluation of High-Temperature Oxidation Behavior of Inconel 600 and Hastelloy C-22, Arabian Journal for Science and Engineering, Volume 40, Issue 9, September 2015, pp. 2739-2746.

<https://link.springer.com/article/10.1007/s13369-015-1766-y>

30- Ali S. Hammood, Effect of Erosion on Water Absorption and Morphology for Treated Date Palm Fiber Reinforced Polyester Composites, International Journal of Mechanical & Mechatronics Engineering IJMME-IJENS, Vol:15, No:06, 2015.

31- Ali Sabea Hammood, Ahmed Faraj Noor, Mohammed Talib Alkhafagy, Evaluation of corrosion behavior in artificial saliva of 2507 and 2205 duplex stainless steel for orthodontic wires before and after heat treatment, Journal of Materials Science-Materials in Medicine, Vol.28, No.187,2017.

<https://link.springer.com/article/10.1007/s10856-017-5997-1>

32- Ali Sabea Hammood, Ahmed Faraj Noor, Mohammed Talib Alkhafagy, Effect of Heat Treatment on Corrosion Behavior of Duplex Stainless Steel in Orthodontic Applications, Materials Research Express, 4(12), 2017.

<https://iopscience.iop.org/article/10.1088/2053-1591/aa9c02/meta>

33- Ali Sabea Hammood, Sora Salem Hassan, Mohammed Talib Alkhafagy, Access to Optimal Calcination Temperature for Nanoparticle Synthesis from Hydroxyapatite Bovine Femur Bone Waste, Nano Biomedicine and Engineering, Vol.9, No.3, 2017, pp.228-235.
<http://www.nanobe.org/Data/View/441>

34- Hassanen L. Jabe1, Ali Sabea Hammood, Nader Parvin, Synthesis and Characterization of Hydroxyapatite Powder from Natural Camelus Bone, Journal of the Australian Ceramic Society, 54, 2018, pp.1-10.
<https://link.springer.com/article/10.1007/s41779-017-0120-0>

35- Ali Sabea Hammood, Sora Salem Hassan, Mohammed Talib Alkhafagy, Comparison of Natural and Nano-Synthetically-Produced Hydroxyapatite Powder, JOM, 71, 2019, pp.272-278.
<https://link.springer.com/article/10.1007/s11837-018-3185-5>

36- Ali Sabea Hammood, Sora Saleem Hassan, Mohammed Talib Alkhafagy, Hassanen L. Jaber, Effect of calcination temperature on characterization of natural hydroxyapatite prepared from carp fish bones, SN-Applied Sciences, 1:436, 2019.
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37- A. S. Hammood, M. A. S. Mahdi, L. Thair, and H. Haddad, Evaluating the effect of hydroxyapatite-chitosan coating on the corrosion behavior of 2205 duplex stainless steel for biomedical applications, Materials Research Express, 6, 2019, 085411.
<https://iopscience.iop.org/article/10.1088/2053-1591/ab2493/meta>

38- Ali Sabea Hammood, Ahmed Faraj Noor, Mohammed Talib Alkhafagy, Irene Calliari, Effect of Heat Treatment on Corrosion Behavior of Duplex Stainless Steel 2507 in Artificial Saliva, Metal Science and Heat Treatment, 61, 2019, pp.48-56.
<https://link.springer.com/article/10.1007/s11041-019-00375-5>

39- Ali Sabea Hammood, L. Thair, Hanaa Diab Altawaly, Nader Parvin, Tribocorrosion Behaviour of Ti–6Al–4V Alloy in Biomedical Implants: Effects of Applied Load and Surface Roughness on Material Degradation, Journal of Bio- and Tribo-Corrosion, 5:85, 2019.
<https://link.springer.com/article/10.1007/s40735-019-0277-x>

40- Ali Sabea Hammood, Zainab Shakir Radeef, S. M. Thahab, Design of a Piezoelectric Energy Harvesting Device based on ZnO-Na₂Ti₆O₁₃ Heterojunction Nanogenerator, Materials Research Express, Vol.11, No. 11, 2019.

<https://iopscience.iop.org/article/10.1088/2053-1591/ab506f/meta>

41- Ali Sabea Hammood, L. Thair, Safa Hussain Ali, Corrosion Behavior Evaluation in Simulated Body Fluid of a Modified Ti-6Al-4V Alloy by DC Glow Plasma Nitriding, Journal of Bio- and Tribo-Corrosion, 5:100, 2019.

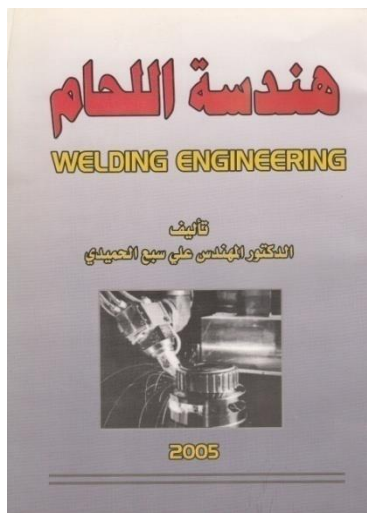
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Authored Books:

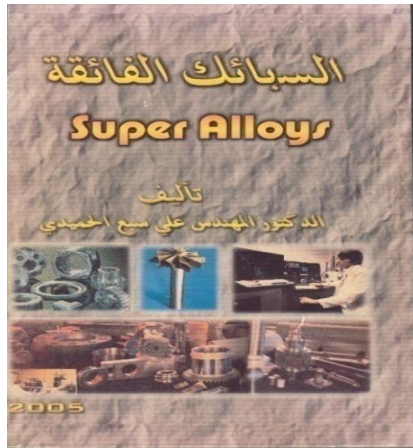
1- Casting Design:



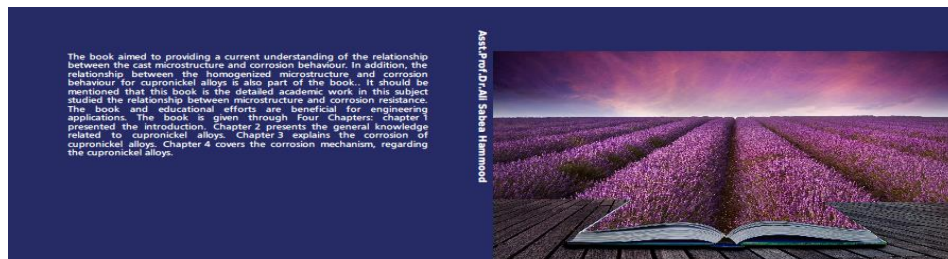
2- Welding Engineering:



3- Super Alloys:



4-Corrosion Mechanism of Cupronickel Alloys:



The book aimed to providing a current understanding of the relationship between the cast microstructure and corrosion behaviour. In addition, the relationship between the homogenized microstructure and corrosion behaviour for cupronickel alloys is also part of the book. It should be mentioned that this book is the detailed academic work in this subject studied the relationship between microstructure and corrosion resistance. The book and educational efforts are beneficial for engineering applications. The book is given through four chapters: Chapter 1 presented the introduction, Chapter 2 presents the general knowledge related to cupronickel alloys, Chapter 3 explains the corrosion of cupronickel alloys, Chapter 4 covers the corrosion mechanism, regarding the cupronickel alloy.

Asst. Prof. Dr. Ali Sabea Hamood

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Corrosion Mechanism OF Cupronickel Alloys



Asst. Prof. Dr. Ali Sabea Hamood - University of Kufa, Iraq - Faculty of Engineering - Materials Engineering Department - B.Sc. Eng., M.Sc. Eng., and Ph.D. Eng. (from University of Technology in Production and Metallurgy Engineering - Metallurgy Engineering) Head of Materials Engineering Department since 2007-2014 - Publishing Researches:30



978-3-659-64861-8

Sabea Hamood



5-Sustainable Melt Spinning Forming for Al-Mg Alloys



This book is written to give the idea about a new method that used to produce a sheet with unique and unusual properties with an economic and environmentally friendly process. It is non-conventional forming process that used single and double rolling instead to form sheet directly from liquid state with micro thickness. The process is aimed at saving materials, machine, machinery, man and money which called SMS. It is a sustainable manufacturing process that is used to produce thin sheet metal with fewer steps of a process and waste which reduces the negative environmental impact, conserves energy and natural resources. The main chapters of this book include information about forming technology and rapid solidification process, and bulk metallic glasses. The book focuses on the single roll melt spinning process as a rapid solidification process for aluminum-magnesium alloy to modify their properties. Mechanical and metallurgical properties of rapidly solidified alloys and their corrosion behavior have been described, and the relationship between their main parameters and the results were modeled to predict the properties of rapidly solidified alloys.

Ahmad K. Jasim

Ahmad K. Jasim
Ali S. Hamood

Sustainable Melt Spinning Forming for Al-Mg Alloy



978-3-330-02625-4

Ahmad K. Jasim



Patent:



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(73) اسم صاحب البراءة : الفذوات اعلاه
(74) اسم الوكيل:

(54) تسمية الاختراع:
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مجلس
رئيس

Postgraduate (M.Sc. and Ph.D.) and Thesis Titles supervised by:

Asst .Prof. Dr. Ali Sabea Hammood

No.	Thesis Title	Student Name	Degree	University-Faculty-Department	Achievement Year
1	Investigating of health monitoring of composite plate structures – using vibration analysis	Muhanned Al-Waily	Ph.D.(Eng.)	Al-Nahrain University-College of Engineering-Mechanical Engineering Department	2013
2	Experimental and Artificial Neural Network Investigation of Fatigue Life for Gray and Nodular Cast Iron	Haider Mahdi Laith	Ph.D.(Eng.)	Basrah University College of Engineering-Mechanical Engineering Department	2013
3	Effect of Rapid Solidification Process on The Mechanical Properties and Microstructure of Al-Mg 5052 and 5038 Alloys	Ahmad Kadhim Jassim	Ph.D.(Eng.)	Basrah University College of Engineering-Mechanical Engineering Department	2014
4	A study of The Behavior for Nickel Base Superalloys (Inconel 600 & Hastelloy C-22) in Corrosive Solutions and High Temperatures Oxidation	Ammar Abdul-Karim Hashim	M.Sc.(Eng.)	Basrah University College of Engineering-Materials Engineering Department	2014
5	The Corrosion Behavior of Duplex Stainless Steel in Biomedical Applications	Ahmed Faraj Noor	M.Sc.(Eng.)	University of Kufa-Faculty of Engineering-Materials Engineering Department	2017
6	Preparation and Characterization of Hydroxyapatite from Different Bio-waste materials	Sora Saleem Hassan	M.Sc.(Eng.)	University of Kufa-Faculty of Engineering-Materials Engineering Department	2018

7	Fretting Corrosion Behavior of Ti-Alloy in Biomedical Applications	Hana Diab Neama	M.Sc. (Eng.)	University of Kufa- Faculty of Engineering- Materials Engineering Department	2019
8	Surface Modification of Ti-Alloy by DC-Glow Discharge Plasma for TriboCorrosion Properties	Safaa Hussain Ali	M.Sc. (Eng.)	University of Kufa- Faculty of Engineering- Materials Engineering Department	2019
9	The Effect of Hydroxyapatite Coating on the Corrosion Behavior of 2205 Duplex Stainless Steel	Montather Ammar Al-Aradawi	M.Sc. (Eng.)	University of Kufa- Faculty of Engineering- Materials Engineering Department	2019