

Hamdan S. Alghamdi, MSc, PhD



Director, College of Dentistry Research Center (CDRC)
Assistant Professor Periodontics & Oral Implants
Visiting Research Ass. Professor Radboud University

College of Dentistry
King Saud University
P.O.Box 60169
Riyadh 11545
Saudi Arabia

Mobile: 966 503418405
Office : 966 114677332
Fax : 966 114677330
E-mail : dalghamdi@ksu.edu.sa
hamdan.alghamdi@radboudumc.nl

➤ BIOGRAPHY



Hamdan S. Alghamdi studied dentistry at King Saud University in Riyadh (Saudi Arabia). From 2003 to 2006, he successfully completed an advanced clinical training in periodontology and oral implantology at the College of Dentistry, King Saud University. In 2007, he received his master degree (MSc) in dental sciences from King Saud University. In July 2010, Hamdan started a PhD study under the supervision of Professor John Jansen in the Department of Biomaterials, Radboud University Medical Center, Nijmegen (The Netherlands). The aim of the PhD study was to evaluate the osteogenic potential of dental implant surface with different modifications in osteoporotic conditions. During his PhD work, he participated in several inter(national) conferences and meetings in the field of biomaterials and bone regeneration and oral implantology. Hamdan Alghamdi is currently appointed as an assistant professor and

Director of Research Center at the College of Dentistry, King Saud University, Riyadh (Saudi Arabia). Dr. Alghamdi has also been affiliated as a visiting research assistant professor at the Department of Biomaterials and Oral Implantology in Radboud University Medical Center, Nijmegen, The Netherlands.

➤ EDUCATION

- 2014, PhD in Dental Science – Department of Biomaterials, Radboud University Medical Center, Nijmegen, The Netherlands. PhD Thesis **“Osseointegration of Dental Implants in Osteoporotic Conditions”**, under the supervision of Professor John Jansen.
- 2013, Clinical Certificate Training Fellowship (two years) in **‘Oral Implant rehabilitation’**, Department of Biomaterials and Oral Implantology, Radboud University Medical Center, Nijmegen, The Netherlands.
- 2007, MSc in periodontology – College of Dentistry, King Saud University, Riyadh, Saudi Arabia.
- 2006, Clinical certificate in periodontology and oral implantology – College of Dentistry, King Saud University, Riyadh, Saudi Arabia.
- 2000, **BDS** – College of Dentistry, King Saud University, Riyadh, Saudi Arabia.

➤ APPOINTMENTS

- **Director**, College of Dentistry Research Center (CDRC), King Saud University (*September 2015 to present*).
- **Director**, “Molecular and Cell Biology” Lab, College of Dentistry, King Saud University (*November 2014 to present*).
- **Head**, “Research Support Unit”, College of Dentistry, King Saud University (*May 2014 to present*).
- **Visiting Research Assistant Professor**, Department of Biomaterials and Oral Implantology, Radboud University Medical Center, Nijmegen, The Netherlands (*January 2014 to present*).
- **Part-time Consultant**, Periodontics and Oral Implants, Sigal Dental Clinic, Riyadh, Saudi Arabia (*July 2014 to present*).
- **Assistant Professor and Consultant**, Department of Periodontics and Community Dentistry, College of Dentistry, King Saud University (*October 2013 to present*).
- **PhD candidate**, Department of Biomaterials and Oral Implantology, Radboud University Medical Center, Nijmegen, The Netherlands (*July 2010 to January 2014*).
- **Clinical Fellow**, Department of Oral Implantology, Radboud University Medical Center, Nijmegen, The Netherlands (*February 2011 to April 2013*).
- **Lecturer**, Department of Periodontics and Community Dentistry, College of Dentistry, King Saud University (*April 2009 to October 2013*).
- **Assistant Consultant**, Department of Periodontology, Dental SVCS, King Abdul Aziz Medical City, National Guard, Riyadh, Saudi Arabia (*July 2008 to April 2009*).
- **Resident**, Department of Periodontics and Community Dentistry, College of Dentistry, King Saud University (*September 2003 to September 2007*).
- **Clinical Director**, Dental Services, King Fahad National Guard Hospital, Riyadh, Saudi Arabia (*January 2001 to December 2003*).
- **Vice manager**, Dental Center, King Fahad Hospital, Ministry of Health, Al Baha, Saudi Arabia (*June 2001 to January 2002*).
- **Internship**, College of Dentistry, King Saud University, Riyadh, Saudi Arabia (*June 2000 to June 2001*).

➤ SCIENTIFIC RESEARCH ACTIVITIES

Dr. Alghamdi was able to publish the data of his PhD research in **top ISI-journals** in the field of biomaterials and tissue engineering of oral implantology, as following:

- Cuijpers VMJl, **Alghamdi HS**, Van Dijk NWM, Jaroszewicz J, Walboomers XF, Jansen JA. “Osteogenesis around CaP-coated titanium implants visualized using 3D histology and micro-computed tomography”. *J Biomed Mater Res Part A* 2015. **[Impact Factor: 3.3]**
- **Alghamdi HS**, van den Beucken JJ, Jansen JA. Osteoporosis–fracture healing and osseointegration. *Drug Discovery Today: Disease Models*. 2014. **[Impact Factor: 5.9]**
- **Alghamdi HS**, Boscoa R, Both S, Iafisco M, Leeuwenburgh S, Jansen JA, van den Beucken JP. Synergistic effects of bisphosphonate and calcium phosphate nanoparticles on peri-implant bone responses in osteoporotic rats. *Biomaterials*. 2014. **[Impact Factor: 8.5]**
- **Alghamdi HS**, Bosco R, van den Beucken JJP, Walboomers XF, Jansen JA. Osteogenicity of titanium implants coated with calcium phosphate or collagen type-I in osteoporotic rats. *Biomaterials* 2013. **[Impact Factor: 8.5]**

- Nejadnik MR, Yang X, Bongio M, **Alghamdi HS**, van den Beucken JJ, Huysmans MC, et al. Self-healing hybrid nanocomposites consisting of bisphosphonated hyaluronan and calcium phosphate nanoparticles. *Biomaterials*. 2014. [Impact Factor: 8.5]
- **Alghamdi HS**, Jansen JA. Bone regeneration associated with nontherapeutic and therapeutic surface coatings for dental implants in osteoporosis. *Tissue Engineering Part B Review* 2013. [Impact Factor: 4.4]
- **Alghamdi HS**, Junker R, Bronkhorst EM, Jansen JA. Bone regeneration related to calcium phosphate-coated implants in osteoporotic animal models: a meta-analysis. *Tissue Engineering Part B Review* 2012. [Impact Factor: 4.4]
- **Alghamdi HS**, van den Beucken JJ, Jansen JA. Osteoporotic Rat Models for Evaluation of Osseointegration of Bone Implants. *Tissue Engineering Part C Methods* 2014. [Impact Factor: 4.4]
- Yeatts AB, Both S, Yang W, **Alghamdi HS**, Yang F, Fisher JP, Jansen JPD. In Vivo Bone Regeneration Using Tubular Perfusion System Bioreactor Cultured Nanofibrous Scaffolds. *Tissue Engineering Part A* 2013. [Impact Factor: 4.4]
- **Alghamdi HS**, Cuijpers VM, Wolke JG, van den Beucken JJ, Jansen JA. Calcium-phosphate-coated Oral Implants Promote Osseointegration in Osteoporosis. *Journal of Dental Research* 2013. [Impact Factor: 4.1]
- **Alghamdi HS**, van Oirschot BAJA, Bosco R, van den Beucken JJJP, Aldosari AAF, Anil S, Jansen JA. Biological response to titanium implants coated with nanocrystals calcium phosphate or type 1 collagen in a dog model. *Clinical Oral Implants Research* 2013. [Impact Factor: 3.8]
- van Oirschot BAJA, **Alghamdi HS**, Närhi TO, Anil S, Al Farraj Aldosari A, van den Beucken JJJP, Jansen JA. In vivo evaluation of bioactive glass-based coatings on dental implants in a dog implantation model. *Clinical Oral Implants Research* 2012. [Impact Factor: 3.8]
- Anil S and **Alghamdi HS**, The impact of periodontal infections on systemic diseases. An update for medical practitioners. *Saudi Med J*. 2006 Jun;27(6):767-76. Review
- **Alghamdi HS** and Anil S. Serum antibody levels in smoker and non-smoker saudi subjects with chronic periodontitis. *J Periodontol*. 2007 Jun;78(6):1043-50.
- **Alghamdi HS**, Mokeem SA, Anil S. Current concepts in alveolar bone augmentation: A critical appraisal. *Saudi Dental Journal* 2007;19(2):74-90.
- Anil S and **Alghamdi HS**, A method of gauging dental radiographs during treatment planning for dental implants. *J Contemp Dent Pract*. 2007 Sep 1;8(6):82-8.
- **Alghamdi HS**, babay N, Anil S. Surgical management of gingival recession: A clinical update. *Saudi Dental Journal* 2009; 21(2):83-94.
- Hashim HA., **Alghamdi HS**, Arch Dimensions in Class I, II And III Malocclusion: A Pilot Study. *PAKJOPCOD* 2002; 01: 21-26.
- **Book Chapter**
Edreira, E. R. U., **Alghamdi HS**, Wolke, J. G. C., van den Beucken, J. J. J. P., and Jansen J. A. Material and Biological Issues Related to the Use of Inorganic Materials at the Bone–Implant Interface. In: Jan Reedijk and Kenneth Poepelmeier, editors. *Comprehensive Inorganic Chemistry II*, Vol 4. Oxford: Elsevier; 2013. p. 417-430.
- **Osteoporotic Animal Model**
Dr. Alghamdi established and characterized an osteoporotic animal model suitable for osseointegration and tissue engineering research in challenged conditions. This work was published in top journal in the field of

tissue engineering (**Alghamdi HS et al., Osteoporotic Rat Models for Evaluation of Osseointegration of Bone Implants. Tissue Engineering Part C Methods 2014**). And because high quality of work, this paper was selected as **Cover Art: volume 20, June 2014**.

- **Radboud University Annual Report-2013**

Dr. Alghamdi PhD-thesis was also included in Radboud University Annual Report-2013 as best representative research-project for theme: Reconstructive and regenerative medicine.

➤ **INTER(NATIONAL) COLLABORATION AND NETWORKING**

- Dr. Alghamdi has been affiliated as a visiting research assistant professor at the Department of Biomaterials and Oral Implantology in Radboud University Medical Center, Nijmegen, The Netherlands. Radboud University has created a research profile for Dr. Alghamdi in the University main homepage (<http://www.rimls.nl/people/a/alghamdi-hamdan/>).
- Dr. Alghamdi is also involving in new collaborative research activities and PhD students supervision with Radboud University [in progress]:
 - Study 1: 'Compare bone response to acid etched and alkaline treated titanium implants'.
 - Study 2: 'Porous Titanium and Titanium Alloys with chemically optimized surface properties for bone implantology'.
 - Study 3: 'Calcium phosphate cement combined with a dual contrast agent and with a growth factor respectively for the enhancement of MRI and CT imaging and dentin regeneration'.
- Dr. Alghamdi is an active member in the **Tissue Engineering and Regenerative Medicine International Society (TERMIS)**. He was able to publish several scientific papers in the field of tissue engineering. Recently, Dr. Alghamdi has been nominated through Professor John Fisher (University of Maryland, USA, TERMIS-America) to coordinate in the project of "Engaging Middle East Scientists in TERMIS".
- Dr. Alghamdi is a participant in the **Society for Biomaterials** (in USA). He is continually attending annual meeting of the Society for Biomaterials. As a result, Dr. Alghamdi is able to develop a wide scientific networking in the field of Biomaterials.
- Dr. Alghamdi is annually participating in the '**Netherlands Society for Biomaterials and Tissue Engineering (N.B.T.E)**', The Netherlands. This society allows Dr. Alghamdi to cooperate with universities, institutions and industries in The Netherlands.
- Dr. Alghamdi is also an active fellow in the **Saudi Dental Society** (in Riyadh).
- Dr. Alghamdi established the work-lab of Molecular and Cell Biology in collaboration with '**Prince Naif Health Research Center**', King Saud Medical City, Riyadh, Saudi Arabia.
- Dr. Alghamdi is coordinating a research activates with '**Advanced Manufacturing Institute**', College of Engineering, King Saud University. Also, He has a cooperation with scientists and researchers at '**King Abdullah Institute for Nanotechnology (KAIN)**', King Saud University.

➤ JOINT PHD RESEARCH PROGRAM

- Based on a mutual interest, Dr. Alghamdi has succeeded to generate collaborative PhD research program between College of Dentistry, King Saud University (KSU) and College of Dental Sciences, Radboud University Medical Center (Radboudumc) to obtain a PhD-degree in Dental Sciences awarded by Radboudumc under the External Joint Supervision Program (EJSP model) at King Saud University.
- Starting 1st September 2015, **two Saudi-Female PhD candidates** have been successfully admitted under this supervision agreement to pursue a PhD-degree for 4 years. The research topics are supervised by:
 - **Professor John A. Jansen, DDS, PhD** – [College of Dental Sciences, Radboud University Medical Center].
 - **Dr. Hamdan S. Alghamdi, MSc, PhD** – [College of Dentistry, King Saud University, Saudi Arabia].
- According to the yearly project-plan for the two PhD students, Dr. Alghamdi is successfully supervised their ongoing research projects as following:
 - Project 1: 'Additive effects of osteoporotic medications on implant osseointegration: A systematic review and meta-analysis'. [in progress: data analysis and writing]
 - Project 2: 'In vivo study on the effect of anti-osteoporotic drugs on implant osseointegration' [in progress: protocol and experiments]
 - Project 3: 'Bone response to the administration of anti-osteoporotic drugs with synthetic bone grafts in OVX rats model'. [in progress: protocol and experiments]

➤ INTERNATIONAL CONFERENCES & ABSTRACTS

Dr. Alghamdi (as guest speaker) presented his work in several international conferences and meetings in the field of biomaterials and tissue engineering of oral implantology, as following:

- **Alghamdi H.S.**, 'Therapies of bone regeneration to promote osseointegration of dental implants'. The 2016 Tissue Engineering and Regenerative Medicine International Society- Asia Pacific Meeting (TERMIS-AP 2016), 3-6 September 2016, Taiwan.
- **Alghamdi H.S.**, chair the session 'Engaging Southeast Asia and Middle East' at TERMIS-AP 2016 meeting, 3-6 September 2016, Taiwan.
- **Alghamdi H.S.**, 'Idealized Scientific Research Activities: A lifecycle Model' at the Annual Research Symposium, King Fahad Medical City (KFMC), 24-25 November 2015, Riyadh, Saudi Arabia.
- **Alghamdi H.S.**, 'Increased osseointegration of titanium implants in challenged bone condition'. The 2015 TERMIS World Congress, September 8-11 2015, Boston, Massachusetts, USA.
- **Alghamdi H.S.**, 'Histologic and genetic response of osteoporotic bone to implants coated with bisphosphonate-loaded calcium phosphate nanoparticles'. New Frontiers Symposium Regenerative Medicine, October 16-17 2014, Nijmegen, Netherlands.
- **Alghamdi H.S.**, 'Thin Calcium Phosphate Coatings Enhanced Bone Response to Titanium Implants in Osteoporotic Conditions'. Tissue Engineering & Regenerative Medicine International Society (TERMIS-EU 2014), 10-13 June 2014, Genova, Italy.
- **Alghamdi H.S.**, 'Toward Better Osseointegration of Dental Implants'. 12th Makkah Dental International Conference, April 26-29 2015, Makkah, Saudi Arabia.

- **Alghamdi H.S.**, 'Instructive and therapeutic based surface coatings in oral implantology'. King Saud University 15th International Dental Conference & the 25th for the Saudi Dental Society, January 12-14 2014, Riyadh, Saudi Arabia.
- **Alghamdi H.S.**, 'Histologic and Genetic Response of Osteoporotic Bone to Implants Coated with Bisphosphonate-Loaded Calcium Phosphate Nanoparticles'. The Netherlands Biomaterials and Tissue Engineering Society (N.B.T.E), November 28-29 2013, Lunteren, The Netherlands.
- **Alghamdi H.S.**, 'Effect of calcium phosphate implant surface coatings in osteoporotic animal models: A meta-analytic approach to the literature'. Europerio7, June 9-12 2012, Vienna, Austria.
- **Alghamdi H.S.**, 'In vivo evaluation of titanium implants coated with calcium phosphate or collagen type 1 in osteoporotic rats'. Tissue Engineering & Regenerative Medicine International Society (TERMIS World Congress), September 5-8 2012, Vienna, Austria.
- **Alghamdi H.S.**, 'Serum antibody levels in smoker and non-smoker Saudi subjects with chronic periodontitis'. FDI Annual World Dental Congress Dubai, 2007.
- **Alghamdi H.S.**, 'Angular Bone Defect Management with Autogenous bone graft- Case Reports'. Annual Scientific meeting of Saudi dental Society, 2004.
- 10th World Biomaterials Congress (WBC 2016), 17-22 May 2016, Montreal, QC, Canada
- King Saud University 16th International Dental Conference and the 27th for the Saudi Dental Society, 5-7 January 2016, Riyadh, Saudi Arabia
- The 26th for the Saudi Dental Society, 13-16 January 2015, Riyadh, Saudi Arabia
- The Society For Biomaterials Annual Meeting April 15-18, 2015, Charlotte, NC, USA
- The Society For Biomaterials Annual Meeting April 16-19, 2014, Denver, Colorado, USA
- Tissue Engineering & Regenerative Medicine International Society (TERMIS/EU 2014), 10-13 June, 2014 Genova, Italy
- King Saud University 15th International Dental Conference & the 25th for the Saudi Dental Society, 12-14 January 2014, Riyadh, Saudi Arabia
- Netherlands Society for Biomaterials and Tissue Engineering, 22nd Annual Meeting, 2013, Lunteren, The Netherlands
- The 3rd TERMIS World Congress in the Hofburg Congress Centre, Vienna, September 5---8, 2012
- Netherlands Society for Biomaterials and Tissue Engineering, 21st Annual Meeting, 2012, Lunteren, The Netherlands
- Europerio7, the 7th conference of European Federation of Periodontology, Vienna, Jun 6---9, 2012
- FDI Annual World Dental Congress Dubai, United Arab Emirates 24---27 2007
- 18th Saudi International Dental Congress, King Fahad Cultural Center, Riyadh, Saudi Arabia, January 2007
- 2nd German-Arab Implantology Meeting of DGZI 2006, Dubai, UAE, March 2006
- AEEDC conference 2006, Dubai, UAE, February 2006.
- 17th Saudi dental Society international conference 2006, Riyadh, Saudi Arabia, January 2006.
- Advance course of Implant Anatomy and Techniques of Harvesting Block Bone Grafts (cadavers), Germany, September 2005.
- European Association of Osseointegration congress (EAO 2005), Munich, Germany, September 2005.
- Annual Scientific and membership meeting of Saudi dental Society, Inter---Continental Hotel, Riyadh, Saudi Arabia, January 2004.
- 7th Saudi Dental Congress (Destiny in Dentistry), Ministry of Health, Riyadh, Saudi Arabia, April

- 2002.
- 11th Saudi International Dental Meeting, College of Dentistry, King Saud University, Riyadh, March 2000.

➤ **ADVANCED SHORT-COURSES & SCIENTIFIC WORKSHOPS**

- In August 2014, Dr. Alghamdi attended '**Advances in Tissue Engineering 22nd Annual Course**', Rice University, Houston, TX. USA. This course is one of collaborative research activities between Professor John Jansen (Radboud University) and Professor Antonios Mikos (Rice University) [Please see Nature Nanotechnology 2008, <http://www.nature.com/nnano/journal/v3/n8/full/nnano.2008.224.html>]. Professor John Jansen (supervisor of Dr. Alghamdi) and Professor Antonios Mikos first met in 1996 that led to a collaboration that has lasted more than 10 years. Rice University Professor Antonios Mikos is the Louis Calder Professor of tissue engineering and biomaterials science. His group at Rice's BioScience Research Collaborative specializes in the development of synthetic scaffolds for guided tissue growth, including the precise regeneration of bone to repair defects in orthopedic and dentistry. He is the author of more than 520 publications and holds 27 patents. Professor Mikos is a founding editor and editor-in-chief of the journals *Tissue Engineering Part A*, *Tissue Engineering Part B: Reviews*, and *Tissue Engineering Part C: Methods*.
- In May 2015, Dr. Alghamdi also attended the course of '**Cell-Based Therapies and Tissue Engineering**', Case Western Reserve University, Cleveland, Ohio, USA. This course is organized by Professor Arnold Caplan "The father of the mesenchymal stem cell (MSC)". Professor Caplan research focuses on stem cell-based therapies with emphasis on the new basic principles of Tissue Engineering and the detailed information and protocols for accomplishing these therapies.
- In November 2010, Dr. Alghamdi completed the course of '**Laboratory animal science and workshop**', Radboud University Medical Center, Nijmegen, The Netherlands.
- In February 2012, Dr. Alghamdi attended the '**1st International Workshop in Systematic Review and Scientific Research Methodology**', Radboud University Medical Center, Nijmegen, The Netherlands.
- Dr. Alghamdi was also to attend several generic skills short-courses: 'Academic Writing', 'Advanced Conversation', 'Presentation Skills', and 'Career Guidance'.