

## Curriculum Vitae

### Fatih Toptan

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#### Scholar Profiles:

ORCID: <http://orcid.org/0000-0001-9138-9119>

Google Scholar: <http://scholar.google.pt/citations?user=G1nbc4sAAAAJ&hl=en>

Researcher ID: <http://www.researcherid.com/rid/L-2739-2013>

Scopus: <http://www.scopus.com/authid/detail.url?authorId=23398312700>

ResearchGate: [http://www.researchgate.net/profile/Fatih\\_Toptan](http://www.researchgate.net/profile/Fatih_Toptan)

Ciência ID: <https://www.cienciavitae.pt/8B1C-0F90-9C64>

#### ACADEMIC DEGREES

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PhD        PhD in Materials Science, *Yildiz Technical University*, Metallurgical and Materials Engineering Department, Istanbul, Turkey (November 2011)

Thesis title: Production of high wear resistant B<sub>4</sub>C particle reinforced aluminium matrix composites, Supervisors: I. Kerti (*Yildiz Technical University*) and L.A. Rocha (*University of Minho*)

MSc        MSc in Materials Science, *Yildiz Technical University*, Metallurgical and Materials Engineering Department, Istanbul, Turkey (2006)

Thesis title: Processing of B<sub>4</sub>C-reinforced Al matrix composites by casting technique, Supervisor: I. Kerti (*Yildiz Technical University*)

BS         *Yildiz Technical University*, Metallurgical and Materials Engineering Department, Istanbul, Turkey (2002)

#### RESEARCH AND ACADEMIC EMPLOYMENT

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##### ***As Professor:***

*Assistant Professor at Department of Materials Science and Engineering, Izmir Institute of Technology, Turkey (November 2020-Present).*

*Invited Assistant Professor at University of Minho, Department of Mechanical Engineering, Guimarães, Portugal (May 2013-September 2018).*

##### ***As Researcher:***

*Invited Scientist at Center for MicroElectroMechanics Systems (CMEMS), University of Minho, Guimarães, Portugal (November 2017-January 2020).*

*Post-Doc Researcher* at Center for MicroElectroMechanics Systems (CMEMS), University of Minho, Guimarães, Portugal (August 2016-July 2017).

*Post-Doc Researcher* at Center of Mechanical and Materials Technologies (CT2M), University of Minho, Guimarães, Portugal (November 2011-May 2013).

*Researcher* at Center of Mechanical and Materials Technologies (CT2M), University of Minho, Department of Mechanical Engineering, Guimarães, Portugal (September 2010-August 2011).

*Researcher* at Yildiz Technical University, Faculty of Chemical and Metallurgical Engineering, Metallurgical and Materials Engineering Department, Istanbul, Turkey (November 2007-May 2010).

## **RESEARCH INTERESTS**

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Development of functionalized metallic materials and metal matrix composites for several applications including load-bearing biomedical implants and automotive applications, and understanding their degradation mechanism mainly due to tribocorrosion.

## **PARTICIPATION IN R&D PROJECTS**

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### ***As Coordinator:***

1. *Development of bio-functionalized and tribocorrosion resistant hybrid surfaces on novel Ti-based alloys, M-ERA.NET Transnational Call 2015, M-ERA-NET/0001/2015, June 2016-May 2020.*
2. Bio-functionalization of new titanium alloys with low elastic modulus, FCT/CAPES Project (Bilateral project between Portugal and Brazil), Proc.º 4.4.1.00, February 2016 - February 2019.
3. Biofunctionalization of porous titanium implants with porosity gradient, Programa de Ações Universitárias Integradas Luso-Francesas, PAUILF – 2014 (Bilateral project between Portugal and France), Project ref: TC-12\_14, 2014, May 2014 - May 2016.

### ***As Researcher:***

1. A new concept for producing graded bio- functionalized materials for orthopaedic implants, FAPESP Regular Research Project, Project No: 2017/24300-4 Brazil, 102881,16 BRL (24410 €), April 2018 - March 2020.
2. Multi-material laser sintering for the production of Functional Graded Structures, The Foundation for Science and Technology (FCT), Portugal, Project No: EXCL/EMS-TEC/0460/2012, January 2013 - January 2016.
3. BIOFGM – Exploring the Functionally Graded Materials (FGM) concept to improve tribocorrosion behaviour and osseointegration capabilities of titanium implants, Fundação Calouste Gulbenkian Project, May 2012 - January 2015.

4. Metal/porcelain interfaces for restorative dentistry, The Foundation for Science and Technology (FCT), Portugal, Project No: PTDC/CTM/67500/2006, November 2011 - March 2012.
5. Production of Al-Ti-C grain refiners by elemental carbon addition and investigation of grain refining performance, YTU-BAPK Project (Turkey), Project No: 28-07-02-02, March 2008 - November 2010.
6. Development of wear resistant B<sub>4</sub>C reinforced (min 15%) lightweight aluminum matrix composites, TUBITAK (*Turkish Scientific and Research Council*) Project, Project No: 107M338, November 2007 - November 2010.
7. Production of Al-B<sub>4</sub>C composites with high particle ratios as a wear resistant material by developing matrix-reinforcement interface properties, YTU-BAPK Project (Turkey), Project No: 27-07-02-01, July 2007 - June 2009.
8. Production and characterisation of aluminium matrix B<sub>4</sub>C reinforced composite automobile brake pads, YTU-BAPK Project (Turkey), Project No: 24-07-02-08, July 2004 - May 2006.

## EXPERIENCE AS SCIENTIFIC ADVISER

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### *Post-Doc Researchers:*

1. Dr. Alexandra C. Alves, under the theme of “Development of bio-functionalized and tribocorrosion resistant hybrid surfaces on novel Ti-based alloys” (*M-ERA-NET/0001/2015* project), November 2018-May 2020, University of Minho, Guimarães, Portugal.
2. Dr. Carlos Alberto Fonzar Pintão from Physics Department of UNESP, Brazil, on the research theme of Tribocorrosion behaviour of biomedical  $\beta$ -type Ti-based alloys, May 2015–February 2016, University of Minho, Portugal.

### *PhD Theses:*

1. Juliana Manuela Barbosa de Sá, Tribological study of metal attachments used on an Ackerman bar, Doctoral Programme in Dental Medicine, Faculty of Dental Medicine, University of Porto (FMDUP), Supervisor: Maria Helena Guimarães Figueiral da Silva (FMDUP), Co-Supervisors: Fatih Toptan, Maria Margarida Ferreira Sampaio Fernandes (FMDUP) (2019-present).
2. Ana Isabel Gomes Costa, TiO<sub>2</sub> bioactive surfaces doped with Sr intended for orthopaedic applications, PhD Program in Advanced Materials and Processing (AdvaMTech), Supervisor: Filomena Maria da Conceição Viana (University of Porto), Co-Supervisor: Fatih Toptan (2016-present).
3. Luis Miguel Pinheiro Sousa, Development of multifunctionalized tribocorrosion-resistant bio-FGMs, PhD Program in Advanced Materials and Processing (AdvaMTech), Supervisor: Sónia Simões (University of Porto), Co-Supervisor: Fatih Toptan (2017-present).
4. İhsan Çaha, Development of bio-functionalized and tribocorrosion resistant hybrid surfaces on novel Ti-based alloys, Biomedical Engineering Doctoral Program, University of Minho, Guimarães. Supervisor: Ana Maria Pires Pinto, Co-Supervisor: Fatih Toptan (2017-present).

### ***Visiting Foreign PhD Students:***

1. Responsible for PhD student Vinícius R. Manso Gonçalves from Physics Department of UNESP, Brazil, on the research theme of “In-situ synthesis of functionally graded Ti-based matrix composites by low-cost liquid metallurgical route”, 01/09/2019-31/08/2020, University of Minho, Portugal.
2. Responsible for PhD student Caio Castanho Xavier from Physics Department of UNESP, Brazil, on the research theme “Surface functionalization of Ti- 15Zr-15Mo alloy: micro-arc oxidation vs. powder metallurgy”, 24/07/2017-23/07/2018, University of Minho, Portugal.
3. Responsible for PhD student Bruna Caroliona Costa from Physics Department of UNESP, Brazil, on the research theme of “Tribocorrosion mechanisms and wear products toxicity of titanium alloys applied as biomaterials Ti-6Al-4V vs. Ti-15Zr-15Mo”, November 2016-December 2017, University of Minho, Portugal.
4. Responsible for PhD student Julia Ureña Alcázar from University Carlos III of Madrid, Spain, on the research theme of “The wear and tribocorrosion behavior of different surfaces of Titanium for biomedical applications”, October-November 2015, University of Minho, Portugal.
5. Responsible for PhD student Denise Pupim from University of São Paulo, School of Dentistry of Ribeirão Preto, Brazil, on the research theme of “Tribocorrosion of NiCrTi dental alloys”, September –December 2014, University of Minho, Portugal.
6. Responsible for PhD student Marcos Soares on the topic of “Tribocorrosion of steel SAE 4140 with a TRIPLEX superficial treatment”, ‘Sandwich PhD’ between Universidade Federal de São Carlos and University of Minho, April 2014–March 2015, University of Minho, Portugal.

### ***MSc Theses:***

1. Clóvis Araújo, Integrated Master on Materials Engineering, University of Minho, Portugal, Microstructure and mechanical behaviour of Ti/Ti-Al<sub>2</sub>O<sub>3</sub> metal matrix composite bonding obtained by brazing, Supervisor: Aníbal Guedes, Co-Supervisors: Fatih Toptan and Luís Sousa (ongoing).
2. Ana Maria Rodrigues Lima, Integrated Master on Materials Engineering, University of Minho, Portugal, Development of functionally graded porous titanium surfaces on  $\beta$ -titanium alloy, Supervisor: Fatih Toptan, Co-Supervisors: Aníbal José Reis Guedes and Alexandra Alves. Concluded: 5 December 2018.
3. Rui Daniel Marques Antunes, Integrated Master on Materials Engineering, University of Minho, Portugal, Tribocorrosion behaviour of Ti–Al<sub>2</sub>O<sub>3</sub> composites, Supervisor: Fatih Toptan. Concluded: 10 January 2018.
4. Carlos Eduardo Gomes Fernandes, Integrated Master on Materials Engineering, University of Minho, Portugal, Synergism between corrosion and wear on hot-pressed Ti-B<sub>4</sub>C composites, Supervisor: Fatih Toptan, Co-Supervisor: Aníbal Guedes. Concluded: 10 January 2018.

5. Luís Miguel Pinheiro Sousa, Integrated Master on Materials Engineering, University of Minho, Portugal, Evaluation of the effect of reinforcement content on wear and corrosion resistance of Ti-B<sub>4</sub>C composites obtained by sintering, Supervisor: Aníbal Guedes, Co-Supervisor: Fatih Toptan. Concluded: 5 September 2016.
6. André Oliveira, Integrated Master on Materials Engineering, University of Minho, Portugal, Tribological behaviour of titanium based biocomposites, Supervisor: Fatih Toptan. Concluded: 23 November 2015.
7. Esil Boztepe, *MSc on Materials Science*, Yildiz Technical University, Istanbul, Turkey, Comparison of Different Nitriding Methods on Surface Properties of 1.2738 Steel, Supervisor: Nurhan Cansever, Co-Supervisor: Fatih Toptan. Concluded: 7 July 2015.
8. Mara Teixeira, Integrated Master on Materials Engineering, University of Minho, Portugal, Mechanical properties of open-cellular porous titanium implant materials, Supervisor: Fatih Toptan. Concluded: 6 February 2015.
9. Joana Silva, Integrated Master on Materials Engineering, University of Minho, Portugal, Tribocorrosion behaviour of in-situ Ti-TiB-TiN<sub>x</sub> hybrid composites, Supervisor: Fatih Toptan. Concluded: 2 December 2014.
10. Ana Margarida Ribeiro, Integrated Master on Materials Engineering, University of Minho, Portugal, Development of CoCrMo based FGM implants, Supervisor: Fatih Toptan. Concluded: 12 December 2013.
11. Ümmügül Çavuşoğlu, *MSc on Materials Science*, Yildiz Technical University, Istanbul, Turkey, Production of magnesium matrix B<sub>4</sub>C reinforced composite materials, Supervisor: Işıl Kerti, Co-Supervisor: Fatih Toptan. Concluded: 24 December 2012.

***Integrated Master Projects:***

1. Liudmila Patrícia Guimarães Basíllio, ‘Individual Project’ under the Integrated Master program, University of Minho, Portugal, Effect of bio-functionalization on the corrosion behavior of Ti-Al<sub>2</sub>O<sub>3</sub> composites, Supervisor: Fatih Toptan, Co-Supervisor: Luis Miguel Pinheiro Sousa. Concluded: 28 June 2019.
2. Rui Monteiro and Hélder Teixeira, ‘Integrated Lab 6 Project’ under the Integrated Master program, University of Minho, Portugal, Surface Modification of Ti-Al<sub>2</sub>O<sub>3</sub> Bio-Composites, Supervisor: Fatih Toptan. Concluded: 17 January 2019.
3. Carina Branco Gomes, ‘Integrated Lab 6 Project’ under the Integrated Master program, University of Minho, Portugal, Synthesis of in-situ composites on titanium surfaces, Supervisor: Fatih Toptan. Concluded: January 2018.
4. Ana Maria Rodrigues Lima, ‘Individual Project’ under the Integrated Master program, University of Minho, Portugal, Biofunctionalization of new Ti alloys with low elastic modulus, Supervisor: Fatih Toptan, Co-Supervisor: Alexandra Alves. Concluded: 06 July 2017.
5. Liliana Dias, ‘Individual Project’ under the Integrated Master program, University of Minho, Portugal, Corrosion behaviour of Ti-Al<sub>2</sub>O<sub>3</sub> biocomposites, Supervisor: Fatih Toptan, Co-Supervisor: Alexandra Alves. Concluded: 04 July 2016.

6. João Alberto da Costa Miranda, ‘Individual Project’ under the Integrated Master program, University of Minho, Portugal, Mechanical characterization of Ti–HAP biocomposites, Supervisor: Fatih Toptan. Concluded: 14 July 2015.
7. Carlos Eduardo Gomes Fernandes and João Alberto da Costa Miranda, ‘Integrated Lab 6 Project’ under the Integrated Master program, University of Minho, Portugal, Optimization of reinforcement homogeneity in Ti-TiO<sub>2p</sub> composites, Supervisor: Fatih Toptan. Concluded: 30 January 2015.
8. Andreia Bastos Pires de Lima, ‘Individual Project’ under the Integrated Master program, University of Minho, Portugal, Tribocorrosion behaviour of titanium based composites, Supervisor: Fatih Toptan. Concluded: 22 July 2014.
9. Catarina Isabel da Silva Oliveira, ‘Individual Project’ under the Integrated Master program, University of Minho, Portugal, Processing of Ti-HAP composites for biomedical applications, Supervisor: Fatih Toptan. Concluded: 22 July 2014.
10. Andreia Lima and Catarina Oliveira, ‘Integrated Lab 6 Project’ under the Integrated Master program, University of Minho, Portugal, Processing and characterization of Ti/TiO<sub>2</sub>/HAP hybrid composites, Supervisor: Fatih Toptan. Concluded: 19 February 2014.
11. Joana Silva, ‘Individual Project’ under the Integrated Master program, University of Minho, Portugal, Processing of Ti-TiB<sub>2</sub>-TiN in-situ hybrid composites by hot pressing, Supervisor: Fatih Toptan. Concluded: 24 July 2013.
12. André Oliveira and Joana Silva, ‘Integrated Lab 6 Project’ under the Integrated Master program, University of Minho, Portugal, Optimization of the processing parameters for titanium biomedical implant materials, Supervisor: Filipe Samuel Silva, Co-Supervisor: Fatih Toptan. Concluded: 24 December 2012.
13. Mara Teixeira and Andreia Araujo, ‘Integrated Lab 6 Project’ under the Integrated Master program, University of Minho, Portugal, Development of porous implant materials by powder metallurgy, Supervisor: Filipe Samuel Silva, Co-Supervisor: Fatih Toptan. Concluded: 24 December 2012.

***Visiting Foreign Master Students:***

1. Responsible for MSc student Natália de Araújo da Costa from Physics Department of UNESP, Brazil, on the research theme of “Development of new titanium oxide films biofunctionalized with structural and chemical gradient on the Ti-40Nb alloy for osseointegrable implants”, 01/05/2019-31/10/2019, University of Minho, Portugal.
2. Responsible for the MSc student Hasan Köklü from Yildiz Technical University, Metallurgical and Materials Engineering Department, Istanbul, Turkey, on the research theme of “Investigation of Dry Sliding, Corrosion and Tribocorrosion Properties for Cu Alloys and Co-Cr-Mo Alloys Subjected to High Pressure Torsion”, 07/09/2017-30/06/2018, University of Minho, Portugal.
3. Responsible for MSc student Letícia Oliveira Rocha from Materials Science and Engineering Department of Universidade Federal de São Paulo – Campus São José dos Campos (UNIFESP), Brazil, on the research theme of “Tribocorrosion behavior of nitrided 7075 - T651 aluminum alloy”, 01/09/2017-01/12/2017, University of Minho, Portugal.

### ***Visiting Foreign Undergraduate Students:***

1. Responsible for the internship of Bünyamin Kiroğlu from Bursa Technical University, Metallurgical and Materials Engineering Department, Bursa, Turkey, on the theme of “Corrosion and tribocorrosion behaviour of Al-Cu matrix graphene reinforced composites”, June-July 2018, University of Minho, Portugal.
2. Responsible for the internship of İrem Sapmaz from Bursa Technical University, Metallurgical and Materials Engineering Department, Bursa, Turkey, on the theme of “Corrosion and tribocorrosion behaviour of Al-Cu matrix graphene reinforced composites”, June-July 2018, University of Minho, Portugal.
3. Responsible for the internship of Ezgi Akbulut from Yildiz Technical University, Metallurgical and Materials Engineering Department, Istanbul, Turkey, on the theme of “Corrosion behaviour of in-situ Ti-TiC composites”, July 2016, University of Minho, Portugal.
4. Responsible for the internship of Adriel Henrique Peixoto da Silva Geraldo from University of São Paulo, School of Dentistry of Ribeirão Preto, Brazil, on the theme of “Electrochemical techniques for dental materials characterization”, 2 January 2014 – 2 March 2014, University of Minho, Portugal.
5. Responsible for the internship of Beatriz Carlos Corrêa from University of São Paulo, School of Dentistry of Ribeirão Preto, Brazil, on the theme of “Electrochemical techniques for dental materials characterization”, 2 January 2014 – 2 March 2014, University of Minho, Portugal.

### **TEACHING EXPERIENCE**

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#### ***The Courses Given at University of Minho:***

1. *Corrosion* module of the *Degradation of Materials* course, Materials Engineering Integrated Master Program (4<sup>th</sup> year), Academic Years of 2013-2014; 2014-2015, 2015-2016, 2016-2017, 2017-2018
2. *Metal Matrix Composites* module of the *Composite Materials* course, Materials Engineering Integrated Master Program (5<sup>th</sup> year), Academic Years of 2013-2014; 2014-2015, 2015-2016, 2016-2017
3. *Stability and Degradation of Materials* course, Biomedical Engineering Integrated Master Program (4<sup>th</sup> year), Academic Years of 2013-2014; 2014-2015, 2015-2016, 2016-2017, 2017-2018
4. *Introduction to Nanotechnologies and Fabrication Techniques* course, Micro/Nano Technologies Master Program, Academic Years of 2013-2014; 2014-2015, 2016-2017, 2017-2018
5. *Nanomaterials and Nanosystems* course, Micro/Nano Technologies Master Program, Academic Years of 2013-2014; 2014-2015, 2016-2017
6. *Degradation Mechanisms in Biomaterials* course, Biomedical Engineering Doctoral Program, Academic Year of 2016-2017

7. *Degradation and Protection of Materials*, PhD Program in Advanced Materials and Processing, Academic Year of 2016-2017

## PUBLICATIONS

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### *Book Chapters:*

1. **F. Toptan**, L.A. Rocha, Tribocorrosion in metal matrix composites, in: "Processing Techniques and Tribological Behavior of Composite Materials." Ed. R. Tyagi and J.P. Davim, IGI Global, 2015, pp. 149-167 doi:10.4018/978-1-4666-7530-8.

### *Refereed International Journal Publications:*

1. A.I. Costa, S. Gemini-Piperni, A.C. Alves, N.A. Costa, N.R. Checca, L.A. Rocha A.M.P. Pinto, **F. Toptan**, A. Rossi, A.R. Ribeiro, TiO<sub>2</sub> bioactive implant surfaces doped with specific amount of Sr modulate mineralization, *Materials Science & Engineering C* <https://doi.org/10.1016/j.msec.2020.111735>
2. A.I. Costa, F. Viana, **F. Toptan**, Preliminary tribocorrosion evaluation of bio-functionalized Ti doped with Ca-P-Sr, *Materials Letters* 283 (2021) 128775.
3. I. Çaha, A.C. Alves, L.A. Rocha, **F. Toptan**, A Review on Bio-functionalization of  $\beta$ -Ti Alloys, *Journal of Bio- and Tribo-Corrosion* 6 (2020) 135.
4. I. Çaha, A.C. Alves, C. Chirico, S.A. Tsipas, I.R. Rodrigues, A.M. P.Pinto, C.R. Grandini, L.A. Rocha, E. Gordo, **F. Toptan**, Interactions between wear and corrosion on cast and sintered Ti-12Nb alloy in comparison with the commercial Ti-6Al-4V alloy, *Corrosion Science* 176 (2020) 108925.
5. S.A. Rodrigues, A.C. Alves, F.S. Silva, V.A.R. Barão, M.F. Mesquita, L.A. Rocha, **F. Toptan**, Corrosion Behavior of Titanium Frameworks under Laser and Tungsten Inert Gas Weldings: Applications in Dentistry, *Surface Engineering and Applied Electrochemistry* 56 (2020) 358-364.
6. **F. Toptan**, Corrosion and wear behaviour of highly porous Ti-TiB-TiN<sub>x</sub> in-situ composites in simulated physiological solution, *Turkish Journal of Chemistry* 44 (2020) 805-816.
7. I. Caha, A.C. Alves, C.D.C. Rodriguez, A.M.P. Pinto, S.A. Tsipas, E. Gordo, **F. Toptan**, Corrosion and tribocorrosion behavior of Ti-40Nb and Ti-25Nb-5Fe alloy produced by powder metallurgy, *Metallurgical and Materials Transactions A* 51 (2020) 3256–3267.
8. I. Çaha, A.C. Alves, P.A.B. Kuroda, C.R. Grandini, A.M.P. Pinto, L.A. Rocha, **F. Toptan**, Degradation behavior of Ti-Nb alloys: Corrosion behavior through 21 days of immersion and tribocorrosion behavior against alumina, *Corrosion Science* 167 (2020) 108488.
9. A.I. Costa, L. Sousa, A.C. Alves, **F. Toptan**, Tribocorrosion behaviour of bio-functionalized porous Ti surfaces obtained by two-step anodic treatment, *Corrosion Science* 166 (2020) 108467.
10. A.C. Alves, A.I. Costa, **F. Toptan**, J.L. Alves, I. Leonor, E. Ribeiro, R.L. Reis, A.M.P. Pinto, J.C.S. Fernandes, Effect of bio-functional MAO layers on the electrochemical behaviour of highly porous Ti, *Surface and Coatings Technology* 386 (2020) 125487.



11. M.M. Costa, T.A. Dantas, F. Bartolomeu, N. Alves, F.S. Silva, G. Miranda, **F. Toptan**, Corrosion Behaviour of PEEK or  $\beta$ TCP-impregnated Ti6Al4V SLM Structures Targeting Biomedical Applications, *Transactions of Nonferrous Metals Society of China* 29 (2019) 2523–2533.
12. A.F.F. Oliveira and **F. Toptan**, Wear behaviour of Ti–Al<sub>2</sub>O<sub>3</sub> biocomposites in 9 g/L NaCl solution, *Journal of Materials Engineering and Performance* 28 (2019) 6000–6010.
13. J.M. Sousa, A.C. Alves, **F. Toptan**, E. Ariza, A. Guedes, Corrosion and tribocorrosion behaviour of Ti–B<sub>4</sub>C composites joined with TiCuNi brazing alloy, *Journal of Materials Engineering and Performance* 28 (2019) 4972-4982.
14. I. Çaha, A. C. Alves, L. J. Affonso, P. N. Lisboa-Filho, J. H. D. da Silva, L. A. Rocha, A. M. P. Pinto, **F. Toptan**, Corrosion and tribocorrosion behaviour of titanium nitride thin films grown on titanium under different deposition times, *Surface & Coatings Technology* 374 (2019) 878–888.
15. B.C. Costa, A.C. Alves, **F. Toptan**, A.M. Pinto, L. Grenho, M.H. Fernandes, D.Y. Petrovykh, L.A. Rocha, P.N. Lisboa-Filho, Exposure Effects of Endotoxin-Free Titanium-Based Wear Particles to Human Osteoblasts, *Journal of the Mechanical Behavior of Biomedical Materials* 95 (2019) 143-152.
16. C. Chirico, S. Tsipas, **F. Toptan**, E. Gordo, Development of Ti-Nb and Ti-Nb-Fe Beta Alloys from TiH<sub>2</sub> Powders, *Powder Metallurgy*, 62 (2019) 44–53.
17. A.C. Alves, R. Thibeaux, **F. Toptan**, A.M.P. Pinto, P. Ponthiaux, B. David, Influence of macro porosity on NIH/3T3 adhesion, proliferation, and osteogenic differentiation of MC3T3-E1 over bio-functionalized highly porous titanium implant material, *Journal of Biomedical Materials Research: Part B - Applied Biomaterials*, 107B (2019) 73–85.
18. C. Frazão, B. Díaz, J. Barros, J. A. Bogas, **F. Toptan**, An experimental study on the corrosion susceptibility of recycled steel fiber reinforced concrete, *Cement and Concrete Composites* 96 (2019) 138–153.
19. **F. Toptan**, A.C. Alves, Ó. Carvalho, F. Bartolomeu, A.M.P. Pinto, F. Silva, G. Miranda, Corrosion and tribocorrosion behavior of Ti6Al4V produced by selective laser melting and hot pressing in comparison with the commercial alloy, *Journal of Materials Processing Technology* 266 (2019) 239-245.
20. **F. Toptan**, A.C. Alves, M.A. Ferreira, C.I. da Silva Oliveira, A.M.P. Pinto, Effect of HAP decomposition on the corrosion behaviour of Ti–HAP composites, *Materials and Corrosion* 69 (2018) 1292-1299.
21. J. Ureña, S. Tsipas, A.M. Pinto, **F. Toptan**, E. Gordo, A. Jiménez-Morales, Corrosion and tribocorrosion behaviour of  $\beta$ -type Ti-Nb and Ti-Mo surfaces designed by diffusion treatments for biomedical applications, *Corrosion Science* 140 (2018) 51–60.
22. S.A. Alves, A.L. Rossi, A.R. Ribeiro, **F. Toptan**, A.M. Pinto, T. Shokuhfar, J.P. Celis, L.A. Rocha, Improved tribocorrosion performance of bio- functionalized TiO<sub>2</sub> nanotubes under two-cycle sliding actions in artificial saliva, *Journal of the Mechanical Behavior of Biomedical Materials*, 80 (2018) 143–154.

23. N.R. Rodrigues, A.C. Alves, **F. Toptan**, L.A. Rocha, Preliminary investigation on the tribocorrosion behaviour of nanotubular structured Ti6Al4V surfaces, *Materials Letters*, 213 (2018) 214-217.
24. E. Boztepe, A.C. Alves, E. Ariza, L.A. Rocha, N. Cansever, **F. Toptan**, A comparative investigation of the corrosion and tribocorrosion behaviour of nitrocarburized, gas nitrided, fluidized-bed nitrided, and plasma nitrided plastic mould steel, *Surface & Coatings Technology*, 334 (2018) 116–123.
25. J.I. Silva, A.C. Alves, A.M. Pinto, **F. Toptan**, Corrosion and tribocorrosion behaviour of Ti–TiB–TiN<sub>x</sub> in-situ hybrid composite synthesized by reactive hot pressing, *Journal of Mechanical Behavior of Biomedical Materials*, 74 (2017) 195–203.
26. S.A. Alves, A.L. Rossi, A.R. Ribeiro, **F. Toptan**, A.M. Pinto, J.P. Celis, T. Shokuhfar, L.A. Rocha, Tribo-electrochemical behavior of bio-functionalized TiO<sub>2</sub> nanotubes in artificial saliva: Understanding of degradation mechanisms, *Wear*, 384–385 (2017) 28–42.
27. M.R. Moraes, A.C. Alves, **F. Toptan**, M.S. Martins, E.M.F. Vieira, A.J. Paleo, A.P. Souto, W.L.F. Santos, M.F. Esteves, A. Zille\*, Glycerol/PEDOT:PSS coated woven fabric as a flexible heating element on textiles, *Journal of Materials Chemistry C*, 5 (2017) 3807–3822.
28. **F. Toptan**, A.C. Alves, A.M.P. Pinto, P. Ponthiaux, Tribocorrosion Behavior of Bio-functionalized Highly Porous Titanium, *Journal of Mechanical Behavior of Biomedical Materials*, 69 (2017) 144-152.
29. A.C. Alves, I. Sendão, E. Ariza, **F. Toptan**, P. Ponthiaux, A.M.P. Pinto, Corrosion behaviour of porous Ti intended for biomedical applications, *Journal of Porous Materials*, 23 (2016) 1261-1268.
30. E. Boztepe, A.C. Alves, A. Ramalho, E. Ariza, L.A. Rocha, N. Cansever, **F. Toptan**, A comparative study on the dry sliding wear behaviour of nitrocarburised, gas nitrided, fluidised-bed nitrided, and plasma nitrided plastic mould steel, *International Journal of Surface Science and Engineering*, 10 (5) (2016) 468-484.
31. E. Gordo, R.G. Das Neves, B. Ferrari, A. Jimenez-Morales, A. Lima, A.C. Alves, A. M. Pinto, **F. Toptan**, Corrosion and tribocorrosion behavior of Ti-alumina composites, *Key Engineering Materials*, 704 (2016) 28-37.
32. J.I. Silva, A.C. Alves, A.M. Pinto, F.S. Silva, **F. Toptan**, Dry sliding wear behaviour of Ti–TiB–TiN<sub>x</sub> in-situ composite synthesised by reactive hot pressing, *International Journal of Surface Science and Engineering*, 10 (4) (2016) 317-329.
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6. A. Kılıçarslan, **F. Toptan**, I. Kerti, Modification of Surface Properties of Boron Carbide (B<sub>4</sub>C) Particles via Electroless Nickel Coating Technique, in: *IV Int. Boron Symp.*, 2009: pp. 81–87. (*In Turkish, with an English abstract*).
7. T. Hacıoğlu, **F. Toptan**, S. Dağlılar, I. Kerti, Production and Characterization of Al–B<sub>4</sub>C<sub>p</sub> Composites by Powder Metallurgy Method, in: *IV Int. Boron Symp.*, 2009: pp. 303–307. (*In Turkish, with an English abstract*).
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11. F. Kumdali, **F. Toptan**, I. Kerti, Effect of Pressing and Sintering Conditions on Microstructure and Properties of P/M Al-B<sub>4</sub>C Composites, in: 13th Int. Metall. Mater. Congr., 2006: pp. 919–924. *(In Turkish, with an English abstract)*
12. I. Kerti, **F. Toptan**, Microstructural and Wear Behaviour Investigations of Cast Al-B<sub>4</sub>C MMCs, in: Proc. 3rd Int. Boron Symp., 2006: pp. 367–371. *(In Turkish, with an English abstract)*.
13. I. Kerti, **F. Toptan**, Processing of B<sub>4</sub>C-Reinforced Al Matrix Composites by Casting Technique, in: Proc. 12th Int. Metall. Mater. Congr., 2005: pp. 808–812. *(In Turkish, with an English abstract)*.

#### ***National Journal Papers:***

1. A. Kiliçarslan, **F. Toptan**, I. Kerti, Electroless Nickel Coating Method and Application of Ceramic Particulates, Metalurji. 154 (2010) 33–37. *(In Turkish, with an English abstract)*
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#### **COMMUNICATIONS IN SCIENTIFIC MEETINGS**

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##### ***Invited talks in International Conferences:***

1. **F. Toptan**, Tribocorrosion behaviour of composite and bio-functionalized porous surfaces for biomedical implant applications, 9th Latin American Congress on Artificial Organs and Biomaterials, COLAOB, August 24-27, 2016 - Foz do Iguaçu, PR, Brazil.
2. **F. Toptan**, Tribocorrosion resistant dense and porous surfaces for biomedical applications, XIV Brazil MRS Meeting, September 27-October 1 2015, Rio de Janeiro, Brazil.

##### ***Invited talks in International Scientific Symposia:***

1. **F. Toptan**, Routes to bio-functionalize  $\beta$ -Ti alloys, 7th IBTN Research Symposium on Advancements in Functionalized Biomaterials, Universidade do Minho, Campus de Azurém, in Guimarães, 6 June 2018.
2. **F. Toptan**, Tribocorrosion-resistant composite and highly porous surfaces for biomedical applications, 5th IBTN Research Symposium on New Frontiers in Biomaterials and Degradation Phenomena in Medical Devices, Universidade do Minho, Campus de Azurém, in Guimarães, 22 June 2017.
3. **F. Toptan**, Metal matrix composites for biomedical applications, 2nd IBTN day, 25 September 2015, CBPF – Centro Brasileiro de Pesquisas Físicas, Rio de Janeiro, Brazil.

##### ***Invited talks in Workshops:***

1. **F. Toptan**, Functionally Graded Implant Materials, *Workshop* on Functionally Graded Materials and Surface Modifications for Biomedical Applications, 10 April 2013, Faculdade de Medicina Dentária, Universidade do Porto, Porto, Portugal.

2. **F. Toptan**, BIO-FGM: A new concept for implant materials, *Workshop on Functionally Graded Materials and Surface Modifications for Biomedical Applications*, 06 June 2012, Faculdade de Medicina Dentária, Universidade do Porto, Porto, Portugal.

***Oral Presentations in International Conferences:***

1. I. Caha, A. Alves, C. Chirico, A. Pinto, S. Tsipas, E. Gordo, **F. Toptan**, Corrosion and tribocorrosion behavior of anodic treated Ti-Nb and Ti-Nb-Fe alloys for biomedical implant applications, EUROCORR 2019, 9-13 September 2019 - Seville, Spain.
2. A. Costa, A. Alves, A. Pinto, **F. Toptan**, Tribocorrosion evaluation of TiO<sub>2</sub> bioactive surfaces doped with Sr intended for orthopaedic applications, EUROCORR 2019, 9-13 September 2019 - Seville, Spain.
3. L. Sousa, A. Alves, A. Rossi, N. Costa, S. Simões, A. Pinto, **F. Toptan**, Tribocorrosion behavior of bio-functionalized in-situ Ti-TiB-TiC composites by anodic treatment, EUROCORR 2019, 9-13 September 2019 - Seville, Spain.
4. I. Caha, A. Alves, L. Affonço, P. Lisboa-Filho, J. da Silva, C. Grandini, L. Rocha, A. Pinto, **F. Toptan**, Corrosion and tribocorrosion behavior of TiN coating film on Ti-Nb alloys for biomedical implant applications, EUROCORR 2019, 9-13 September 2019 - Seville, Spain.
5. A.I. Costa, S. Gemini-Piperni, A.C. Alves, N.A. Costa, N.R. Checca, L.A. Rocha, A.M.P. Pinto, **F. Toptan**, A. Rossi, A.R. Ribeiro, TiO<sub>2</sub> bioactive surfaces doped with Sr intended for orthopaedic applications, X International Symposium on Materials (MATERIAIS 2019), 14 – 17 April 2019, Lisbon, Portugal.
6. L. Sousa, R.D.M. Antunes, A.C. Alves, **F. Toptan**, Corrosion and tribocorrosion behavior of Ti-Al<sub>2</sub>O<sub>3</sub> composites processed by powder metallurgy, X International Symposium on Materials (MATERIAIS 2019), 14 – 17 April 2019, Lisbon, Portugal.
7. I. Caha, A.C. Alves, C. Chirico, A.M.P. Pinto, S.A. Tsipas, E. Gordo, **F. Toptan**, Morphological variations on the nanotubular layers grown on Ti-Nb alloys, X International Symposium on Materials (MATERIAIS 2019), 14 – 17 April 2019, Lisbon, Portugal.
8. B.C. Costa, A. Alves, **F. Toptan**, A.M. Pinto, L. Grenho, M.H. Fernandes, D. Petrovykh, L.A. Rocha, P.N. Lisboa-Filho, Exposure effects of titanium implants' wear products to bone tissue cells, XVII Brazilian MRS meeting (SBPMat), 16-20 September 2018, Natal, Brazil.
9. C. Chirico, S. Tsipas, **F. Toptan**, E. Gordo, Development of Ti-Nb and Ti-Nb-Fe beta alloys from TiH<sub>2</sub> powders, Euro PM2018 Congress & Exhibition, 4-18 October 2018, Bilbao, Spain.
10. J. Ureña, R.G. das Neves, S. Tsipas, A.C. Alves, A.M. Pinto, **F. Toptan**, B. Ferrari, A. Jiménez-Morales, E. Gordo, Strategies for improvement the wear and tribocorrosion behaviour of titanium alloys, IBERTRIB 2017 – IX Iberian Conference on Tribology, University of Minho, Guimarães, Portugal, June 12-13, 2017.

11. E. Gordo, J. Ureña, **F. Toptan**, A.M. Pinto, B. Ferrari, S. Tsipas, A. Jiménez-Morales, Design and Evaluation of PM Ti Surfaces Modified by Colloidal Techniques and Diffusion Processes for Biomedical Applications. Powder Metallurgy World Congress, WorldPM 2016, Hamburg, Germany, 9 - 13 October 2016.
12. J.I. Silva, A.C. Alves, A.M. Pinto, **F. Toptan**, Tribocorrosion behaviour of Ti–TiB–TiN<sub>x</sub> in-situ hybrid composite, in the symposium New frontiers on biomaterials for bone regeneration at the XIV Brazil MRS Meeting, 27 September - 1 October 2015, Rio de Janeiro, Brazil.
13. E. Gordo, R.G. das Neves, B. Ferrari, A. Jiménez-Morales, A.C. Alves, A.M.P. Pinto, **F. Toptan**, Corrosion and tribocorrosion behavior of Ti-alumina composites, PM Titanium 2015, The 3rd Conference on Powder Processing, Consolidation and Metallurgy of Titanium, 31 August - 3 September 2015, Lüneburg, Germany.
14. A.C. Alves, **F. Toptan**, P. Ponthiaux, A.M.P. Pinto, Biofunctionalization of porous titanium, PM Titanium 2015, The 3rd Conference on Powder Processing, Consolidation and Metallurgy of Titanium, 31 August - 3 September 2015, Lüneburg, Germany.
15. A. Rego, A. Guedes, **F. Toptan**, Microstructure of Discontinuously B<sub>4</sub>C Reinforced Ti Metal Matrix Composites Processed by Hot-Pressing, INCOMAM'14 - International Conference on Microscopy and Microanalysis, XLVIII Congress of the Portuguese Microscopy Society. Porto 6-7 November 2014.
16. M. Teixeira, A.C. Alves, F. Silva, **F. Toptan**, Microstructural characterization of biofunctionalized titanium foams, INCOMAM'14 - International Conference on Microscopy and Microanalysis, XLVIII Congress of the Portuguese Microscopy Society, Porto 6-7 November 2014.
17. A.M. Ribeiro, A.C. Alves, L.A. Rocha, F.S. Silva, **F. Toptan**, Corrosion and tribocorrosion behaviour of hot-pressed CoCrMo–Al<sub>2</sub>O<sub>3</sub> composites for acetabular cup applications, Tribocorrosion 2014 symposium, 9-11 April 2014, Glasgow-UK.
18. Z. Doni, A.C. Alves, **F. Toptan**, L.A. Rocha, M. Buciumeanu, L. Palaghian, F.S. Silva, Corrosion and tribocorrosion behaviour of hot-pressed CoCrMo-HAP biocomposites, Tribocorrosion 2014 symposium, 9-11 April 2014, Glasgow-UK.
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21. **F. Toptan**, I. Kerti, A. Sagin, M. Cigdem, S. Daglilar, F. Yuksel, Microstructural properties and wear behaviour of AlSi9Mg matrix B<sub>4</sub>C<sub>p</sub> reinforced composites, TMS 2011 Annual Meeting & Exhibition, 27 February – 3 March, 2011, San Diego, California, USA.
22. **F. Toptan**, I. Kerti, S. Daglilar, A. Sagin, T. Hacioglu, Effect of particle size particle surface modification pressing pressure and sintering temperature on microstructure and mechanical properties P/M Al–B<sub>4</sub>C composites, TMS 2011 Annual Meeting & Exhibition, 27 February – 3 March, 2011, San Diego, California, USA.

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31. I. Kerti, **F. Toptan**, Microstructural and Wear Behaviour Investigations of Cast Al-B<sub>4</sub>C MMCs, 3<sup>rd</sup> International Boron Symposium, 2-4 November 2006, Ankara, Turkey.

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1. A.C. Alves, A.I. Costa, **F. Toptan**, J.L. Alves, I. Leonor, E. Ribeiro, R.L. Reis, A.M.P. Pinto, J.C.S. Fernandes, Effect of macro-porosity on electrochemical behaviour of bio-functionalized highly porous Ti, 7th IBTN Research Symposium on Advancements in Functionalized Biomaterials, Universidade do Minho, Guimarães, 6 June 2018.
2. A.I. Costa, L. Sousa, A.C. Alves, **F. Toptan**, Tribocorrosion behaviour of bio-functionalized porous Ti surfaces obtained by a two-step anodic treatment, 7th IBTN Research Symposium on Advancements in Functionalized Biomaterials, Universidade do Minho, Guimarães, 6 June 2018.
3. C.C. Xavier, A.C. Alves, A.M.P. Pinto, **F. Toptan**, L.A. Rocha, Corrosion resistance of a Ti-15Zr-15Mo alloy functionalized by particle-containing micro-arc oxidation, 7th IBTN Research Symposium on Advancements in Functionalized Biomaterials, Universidade do Minho, Guimarães, 6 June 2018.



4. I. Caha, A.C. Alves, L.J. Affonço, P.N. Lisboa-Filho, J.H. Silva, L.A. Rocha, A.M.P. Pinto, **F. Toptan**, Corrosion and tribocorrosion behaviour of titanium nitride thin films grown on titanium under different deposition times, 7th IBTN Research Symposium on Advancements in Functionalized Biomaterials, Universidade do Minho, Guimarães, 6 June 2018.
5. A.C. Alves, R. Thibeaux, **F. Toptan**, A.M.P. Pinto, P. Ponthiaux, B. David, Biological response of biofunctionalized highly porous Ti, 5th IBTN Research Symposium on New Frontiers in Biomaterials and Degradation Phenomena in Medical Devices, Universidade do Minho, Guimarães, 22 June 2017.

***Oral Presentations in National Conferences:***

1. I. Çaha, A. Alves, C. Chirico, A. Pinto, L. Rocha, S. Tsipas, C. Grandini, E. Gordo, **F. Toptan**, Corrosion and tribocorrosion behavior of Ti-Nb based alloys, 3rd Doctoral Congress in Engineering, 27-28 June 2019, University of Porto, Porto, Portugal.
2. C. Melo, A. Guedes, C. Tavares, **F. Toptan**, S. Simões, Diffusion brazing Ti6Al4V to Ti-B<sub>4</sub>C composite using different Ti-based fillers, 3rd Doctoral Congress in Engineering, 27-28 June 2019, University of Porto, Porto, Portugal.
3. L. Sousa, L. Basilio, A. Alves, S. Simões, **F. Toptan**, Tribocorrosion behavior of bio-functionalized Ti-Al<sub>2</sub>O<sub>3</sub> composites, 3rd Doctoral Congress in Engineering, 27-28 June 2019, University of Porto, Porto, Portugal.
4. A. Costa, A. Alves, S. Gemini-Piperni, N. Costa, R. Checca, L. Rocha, A. Pinto, A. Rossi, A. Ribeiro, **F. Toptan**, Biological and tribo-electrochemical characterization of TiO<sub>2</sub> bioactive surfaces doped with Sr, 3rd Doctoral Congress in Engineering, 27-28 June 2019, University of Porto, Porto, Portugal.
5. C. Melo, A. Guedes, C. Tavares, **F. Toptan**, S. Simões, Brazing of Ti6Al4V to B<sub>4</sub>C Reinforced Ti Metal Matrix Composite, 2nd Doctoral Congress in Engineering, 8-9 June 2017, University of Porto, Porto, Portugal.
6. C.L.B. Bhering, S.A. Rodrigues, F.S. Silva, **F. Toptan**, A.C. Alves, L.A. Rocha, V.A.R. Barão, M.F. Mesquita, Corrosion behavior of welded structures by laser and TIG, Reunião Anual da Sociedade Brasileira de Pesquisa Odontológica, 4-7 September 2015, Campinas, Brazil.
7. S.A. Rodrigues, F.S. Silva, **F. Toptan**, L.A. Rocha, L.G. Vaz, V.A.R. Barão, R.L.X. Consani, M.F. Mesquita, The mechanical behavior of welded structures by laser and TIG, Reunião Anual da Sociedade Brasileira de Pesquisa Odontológica, 4-7 September 2015, Campinas, Brazil.
8. **F. Toptan**, M. Cigdem, I. Kerti, Production and Characterisation of AA2024-B<sub>4</sub>C<sub>p</sub> Composites, 5th Aluminium Symposium (ALUS'05), 13-14 October 2011, Istanbul, Turkey.
9. **F. Toptan**, A. Kılıçarslan, I. Kerti, Microstructural Characterization of Matrix/Reinforcement Interfaces in Al-B<sub>4</sub>C Composites Produced by Ti Addition, 19th National Electron Microscopy Congress with International Participation, 22–25 June 2009, Trabzon, Turkey.

10. A. Kılıçarslan, **F. Toptan**, I. Kerti, I., Microstructural Characterization of Electroless Nickel Plated B<sub>4</sub>C Particles, 19th National Electron Microscopy Congress with International Participation, 22–25 June 2009, Trabzon, Turkey.

***Poster Presentations in International Conferences:***

1. T. Almeida, A. Alves, **F. Toptan**, M. Herrero, P. Vaz, J. Sampaio-Fernandes, Titanium implant surfaces characterization after different surface treatments, 29th Annual Scientific Meeting of the European Association for Osseointegration, 5–11 October 2020. (Abstract published in Clinical Oral Implants Research, [https://doi.org/10.1111/clr.87\\_13644](https://doi.org/10.1111/clr.87_13644))
2. A.C. Alves, A.I. Costa, **F. Toptan**, A.M. Pinto, J.C. Fernandes, R. Thibeaux, B. David, J-P. Celis, P. Ponthiaux, L.A. Rocha, Corrosion, tribocorrosion and biological response of bio-functionalized highly porous titanium intended for biomedical applications, 4th International Conference on BioTribology (ICoBT 2018), 26-29 September 2018, Montreal, Canada.
3. B. Costa, C. Xavier, N. Costa, A. Alves, P. Lisboa-Filho, **F. Toptan**, A.M. Pinto, L. Rocha, Influence of heat treatment and surface modification on the tribocorrosion behavior of new beta titanium alloys designed for medical implants: the case of Ti-15Zr-15Mo, 43rd international Conference on Micro and Nanoengineering, MNE2017, 18-22 September 2017, Braga, Portugal.
4. P. Corrêa, N.F.A. Neto, C.A.F. Pintão, A.M. Pinto, **F. Toptan**, J.H.D da Silva, L.A. Rocha, Preliminary study of surface modification of commercial titanium by deposition of TiO<sub>2</sub> thin films and the sputtering technique: applications as biomaterials, Symposium on New frontiers on biomaterials for bone regeneration at the XIV Brazil MRS Meeting, 27 September - 1 October 2015, Rio de Janeiro, Brazil.
5. D.R.N. Correa, P.A.B. Kuroda, C.R. Grandini, F. Oliveira, A.C. Alves, **F. Toptan**, L.A. Rocha, Tribocorrosion behaviour of biomedical  $\beta$ -type Ti-15Zr-based alloys, Symposium on New frontiers on biomaterials for bone regeneration at the XIV Brazil MRS Meeting, 27 September - 1 October 2015, Rio de Janeiro, Brazil.
6. E. Gordo, R.G. das Neves, B. Ferrari, A. Jimenez-Morales, A. Alves, A. M. Pinto, **F. Toptan**, Corrosion and tribocorrosion behavior of Ti-alumina composites, PM Titanium 2015, 31 August - 3 September 2015, Lüneburg, Germany.
7. **F. Toptan**, F. Yuksel, I. Kerti, Production and Characterization of AlSi9Mg Matrix B<sub>4</sub>C Particulate Reinforced Composites, 11th International Symposium on Multiscale, Multifunctional and Functionally Graded Materials, 26-29 September 2010, Guimarães, Portugal.
8. **F. Toptan**, I. Kerti, Microstructural Characterisation of Al-B<sub>4</sub>C Interface, Seres'09, I. International Ceramic, Glass, Porcelain, Enamel, Glaze and pigment Congress, 12-14 October 2009, Eskisehir, Turkey.
9. **F. Toptan**, A. Kılıçarslan, A. Karaaslan, M. Çiğdem, I. Kerti, Optimisation of Particle Addition Conditions in Production of Al-B<sub>4</sub>C Composites by Casting Route, 14th International Metallurgy & Materials Congress, 16-18 November 2008, Istanbul, Turkey.

10. A. Kılıçarslan, **F. Toptan**, I. Kerti, Oxidation of Boron Carbide Powder, 12th International Materials Symposium (IMSP'2008), October 15-17, 2008, Denizli, Turkey.
11. F. Kumdalı, **F. Toptan**, I. Kerti, Effect of Pressing and Sintering Conditions on Microstructure and Properties of P/M Al-B<sub>4</sub>C Composites, 13th International Metallurgy & Materials Congress, 9-11 November 2006.
12. **F. Toptan**, I. Kerti, Processing of B<sub>4</sub>C-Reinforced Al Matrix Composites by Casting Technique, 12 International Metallurgy-Materials Congress and Fair, 28 September - 02 October 2005, Istanbul, Turkey.

***Poster Presentations in International Scientific Symposia:***

1. C. Melo, A. Guedes, C.J. Tavares, **F. Toptan**, S. Simões, Characterization of Ti6Al4V to Ti-B<sub>4</sub>C composite joints brazed with Ti foil coated with Ag and Cu sputtered layers, EUROMAT 2019, 1-5 September 2019, Stockholm, Sweden.
2. J.M. Sousa, A.C. Alves, **F. Toptan**, E. Ariza, A. Guedes, Corrosion and tribocorrosion behaviour of Ti-B<sub>4</sub>C composites joined by brazing, 5th IBTN Research Symposium on New Frontiers in Biomaterials and Degradation Phenomena in Medical Devices, Universidade do Minho, Guimarães, 22 June 2017.
3. E.R. Santos, A.C. Alves, **F. Toptan**, A.M.P. Pinto, Processing titanium foams obtained by powder metallurgy for biomedical applications, 5th IBTN Research Symposium on New Frontiers in Biomaterials and Degradation Phenomena in Medical Devices, Universidade do Minho, Guimarães, 22 June 2017.
4. L. Sousa, **F. Toptan**, A.C. Alves, A. Guedes, Effect of reinforcement content on wear and corrosion resistance of Ti-B<sub>4</sub>C composites obtained by sintering, 5th IBTN Research Symposium on New Frontiers in Biomaterials and Degradation Phenomena in Medical Devices, Universidade do Minho, Guimarães, 22 June 2017.
5. A.I. Costa, A.C. Alves, **F. Toptan**, A.M.P. Pinto, Surface Modification of Titanium Foams for Biomedical Applications, 5th IBTN Research Symposium on New Frontiers in Biomaterials and Degradation Phenomena in Medical Devices, Universidade do Minho, Campus de Azurém, in Guimarães, 22 June 2017.

**OTHER ACADEMIC ACTIVITIES**

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***Membership:***

1. European Branch of the Institute of Biomaterials, Tribocorrosion and Nanomedicine (IBTN/Euro), Coordinator, 2020.
2. Federation of the European Materials Societies, 2019-present.
3. European Federation of Corrosion, 2019-present.
4. Portuguese Materials Society, 2019-present.
5. Union of Chambers of Turkish Engineers and Architects, Chamber of Metallurgical Engineers, 2005-present.

### ***Organization/Scientific Committee Member:***

1. *Member of the international scientific committee in VII Spanish Congress of Powder Metallurgy and the II Ibero-American Conference on Powder Metallurgy, in Madrid, Spain, 24-26 June 2019.*
2. *Chairperson, member of the scientific, organization, and executive committees, 7th IBTN Research Symposium on Advancements in Functionalized Biomaterials, Universidade do Minho, Campus de Azurém, in Guimarães, 6 July 2018.*
3. *Member of the executive committee, 6th IBTN Research Symposium on New Frontiers in Biomaterials and Degradation Phenomena in Medical Devices, UIC, College of Dentistry, Chicago, IL, USA, 16 April 2018.*
4. *Chairperson, member of the scientific, organization, and executive committees, 5th IBTN Research Symposium on New Frontiers in Biomaterials and Degradation Phenomena in Medical Devices, Universidade do Minho, Campus de Azurém, in Guimarães, 22 June 2017.*
5. *Member of the national scientific committee and executive commission in VI International Materials Symposium, MATERIAIS 2011, in Guimarães, Portugal, 18-20 April 2011.*

### ***Jury Membership:***

1. Isabel Augusta Pereira de Magalhães Torres. Study of air polishing effect on tantalum surfaces. 2020. Master Thesis Defence, Master's Dissertation in Oral Rehabilitation, Faculty of Dental Medicine, University of Porto, Portugal.
2. Caio Castanho Xavier. Functionalization of the Ti-15Zr-15Mo alloy by micro-arc oxidation. 2020. PhD qualification exam, Post-Graduation program in Materials Science and Technology, Sao Paulo State University (UNESP), Bauru, Brazil.
3. Maria João Carvalho Runa. Interactions between bio-tribocorrosion phenomena and cellular response of titanium-based femoral stems. 2016. PhD Thesis Defence, PhD program in Biomedical Engineering, University of Minho, Portugal.
4. Sofia Afonso Alves. A new concept of nanostructured bio-multifunctional surfaces for dental implants: tribocorrosion resistant, osseointegrative and antimicrobial surfaces. 2014. Qualification exam, PhD program in Biomedical Engineering, University of Minho, Portugal.
5. José Augusto Santos Sequeiros. Influence of hydrogen peroxide on the tribocorrosion of titanium. 2013. Master Thesis Defence, Biomedical Engineering Integrated Master Program, University of Minho, Portugal.
6. Natacha Rivera. Tribocorrosion behavior of nanostructured Ti6Al4V alloy as a femoral stem of hip joint prosthesis. 2013. Master Thesis Defence, Micro/Nano Technologies Master Program, University of Minho, Portugal.
7. Maria João Carvalho Runa. Interactions between bio-tribocorrosion phenomena and cellular response of titanium-based femoral stems. 2013. Qualification exam, PhD program in Biomedical Engineering, University of Minho, Portugal.

### ***Visiting Researcher:***

1. *Scientific visitor* for electron microscopy (Focused Ion Beam and Transmission Electron Microscopy), International Iberian Nanotechnology Laboratory (INL), Braga, Portugal, as several sessions between February 2017-January 2018.
2. *Visiting researcher* in the framework of PAUILF Project (ref: TC-12\_14, 2014) at Centrale Supélec (previously École Centrale Paris), France, June-July 2015.

### ***Peer-Review Activities:***

#### *Journals:*

1. Materials & Design
2. International Journal of Engineering Science and Technology
3. Journal of Alloys and Compounds
4. Materials Characterization
5. Ceramics International
6. Applied Surface Science
7. Materials Research
8. Indian Journal of Engineering & Materials Sciences
9. Journal of Applied Mechanical Engineering
10. Cell Proliferation
11. Materials Chemistry and Physics
12. Tribology International
13. Journal of Materials Engineering and Performance
14. Journal of Materials Processing Technology
15. International Journal of Materials Research
16. Journal of Engineering Manufacture
17. Arabian Journal of Chemistry
18. Physica E
19. Journal of Bio- and Tribo-Corrosion
20. Results in Physics
21. Metals
22. Journal of Materials: Design and Applications
23. Friction
24. Journal of the Brazilian Society of Mechanical Sciences and Engineering
25. Corrosion Science
26. JoVE-journal of visualized experiments
27. Materials and Corrosion
28. Vacuum
29. Electrochimica Acta
30. Tribology Transactions
31. Acta Biomaterialia
32. Composites Part B

33. Journal of Laser Applications
34. Materials Science & Engineering C

*Proceedings:*

1. Proceedings no VI International Materials Symposium (MATERIAIS 2011)
2. Proceedings of the 2nd International Conference on Biomedical Engineering and Biotechnology (ICBEB 2013)
3. XIV Brazil MRS Meeting, Symposium W - New frontiers on biomaterials for bone regeneration
4. Wear of Materials 2021.

**LANGUAGE SKILLS**

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Turkish (Native), English (Fluent), Portuguese (Intermediate).

Last update: 3 December 2020