

# Aziz Genç

PhD, Associate Professor

Izmir Institute of Technology

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## **Education**

- **PhD, Materials Science, 2015.** Institut Català de Nanociència i Nanotecnologia (ICN2) and Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Universitat Autònoma de Barcelona, Department of Physics, Bellaterra, Spain, (Supervisor: Prof. Dr. Jordi Arbiol, with Cum Laude and International Doctorate Mention)
- **MSc, Materials Science and Engineering, 2009.** İstanbul Technical University, İstanbul, Turkey, (Supervisors: Prof. Dr. Mustafa Lütfi Öveçoğlu)
- **BSc, Metallurgical and Materials Engineering, 2007.** Yıldız Technical University, İstanbul, Turkey, (Supervisors: Prof. Dr. Ahmet Ekerim & Asst. Prof. Dr. Öznur Çakır)

## **Professional Experience**

- Assistant Professor at Izmir Institute of Technology, Materials Science and Engineering Department, November 2019 – present.
- Assistant Professor at Bartın University Metallurgical and Materials Engineering Department, August 2017 – July 2019.
- Visiting researcher at Institut Català de Nanociència i Nanotecnologia (ICN2), Barcelona, Spain June – July 2016.
- Senior Research Assistant at Bartın University Metallurgical and Materials Engineering Department, December 2015 – August 2017.
- Visiting researcher at The Ernst Ruska-Centre (ER-C) for Microscopy and Spectroscopy with Electrons, Jülich, Germany, October 2014 – February 2015
- Visiting researcher at Gradecak Group, Department of Materials Science & Engineering, Massachusetts Institute of Technology, Cambridge, MA, USA, November-December 2013 & May 2014
- Pre-doctoral researcher at Particulate Materials Laboratories, Department of Materials Science & Engineering, İstanbul Technical University, İstanbul, Turkey, September 2009 – June 2012

## **Project**

### **Experience**

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- Principal Investigator, Improving the photocatalytic properties of iron oxide ( $\text{Fe}_2\text{O}_3$ ) by nanoengineering approaches: Plasmon enhanced hollow  $\text{Fe}_2\text{O}_3$  nanostructures. TUBITAK 3001 216M228, 01/06/2017 – 01/06/2018
- Principal Investigator, Synthesis of Hollow Metal Oxide Nanostructures and Characterization of Their Microstructural and Photocatalytic Properties. Bartın University Scientific Research Projects Unit, 19/09/2016 – 19/09/2017
- Researcher, e-TNT - e-Nanoscopy and core-shell multilayers for Tandem devices and systems based on Nanostructures for solar energy Transformation in sun FUELS. Funded by RETOS Call. Ministry of Economy, Spain, 01/01/2015 – 30/07/2015
- Researcher, Single ATOM detection through Advanced Electron Nanoscopies (e-ATOM). Funded by Europa Excelencia, Ministry of Economy, Spain, 01/10/2014 – 30/07/2015
- Researcher, Direct and in-situ characterization of surface plasmons on novel complex metal nanostructures (DIPMeN), Funded by Massachusetts Institute of Technology (MIT) Global Seed Funds (in collaboration with the group of Prof. Silvija Gradečak at MIT), 15/12/2012 - 31/08/2014
- Researcher, Integration of compound semiconductors and silicon in nanowires (InCoSiN,PRIPIMERU-2011-1422), Funded by Spanish Minister of Economic Affairs and Competitiveness (MINECO) - UE ERANet RUS Program, 01/09/2012 - 31/08/2014
- Researcher, Correlation of the Electronic and Optical Properties in Functional Nanowires through Advanced Electron Nanoscopy (COPEON, MAT2010-15138), Funded by Spanish Ministry of Science and Innovation (MICINN), 01/01/2011 - 30/06/2014
- Researcher, Microstructural and Mechanical Properties of Ni-W Solid Solution Alloy Matrix Composites Developed via Powder Metallurgy Routes, Funded by the Scientific and Research Council of Turkey (TUBITAK), 01/06/2011 - 01/06/2012

### **Publications**

49. Tuğrul Güner, Hürriyet Yüce, Didem Taşçıoğlu, Eren Şimşek, Umut Savacı, Aziz Genç, Servet Turan, Mustafa M. Demir, “Optimization and performance of nitrogen-doped carbon dots as a color conversion layer for white-LED applications”, Beilstein J. Nanotechnol. 10 (2019) 2004–2013.
48. María Ibáñez, Aziz Genç, Roger Hasler, Yu Liu, Oleksandr Dobrozhan, Olga Nazarenko, María de la Mata, Jordi Arbiol, Andreu Cabot, Maksym V. Kovalenko, “Tuning Transport Properties in Thermoelectric Nanocomposites through Inorganic Ligands and Heterostructured Building Blocks”, ACS Nano 13 (2019) 6572-6580.
47. Tuğrul Güner, Anılcan Kuş, Mehmet Özcan, Aziz Genç, Hasan Şahin, Mustafa M. Demir, “Green Fabrication of Lanthanide doped Hydroxide-based Phosphors:  $\text{Y}(\text{OH})_3:\text{Eu}^{3+}$

Nanoparticles for White Light Generation”, Beilstein Journal of Nanotechnology 10 (2019) 1200-1210.

46. Maria Ibáñez, Roger Hasler, Aziz Genç, Yu Liu, Beatrice Kuster, Maximilian Schuster, Oleksandr Dobrozhan, Doris Cadavid, Jordi Arbiol, Andreu Cabot, Maksym V. Kovalenko, "Ligand-Mediated Band Engineering in Bottom-Up Assembled SnTe Nanocomposites for Thermoelectric Energy Conversion", Journal of the American Chemical Society 141 (2019)

8025-8029. **(Featured as the Front Cover of May 22<sup>nd</sup>, 2019 Issue)**

45. Neus G. Bastús, Jordi Piella, Sara Perez, Javier Patarroyo, Aziz Genç, Jordi Arbiol, Victor Puentes, “Robust one-pot synthesis of citrate-stabilized Au@CeO<sub>2</sub> hybrid nanocrystals with different thickness and dimensionality”, Applied Materials Today 15 (2019) 445-452.

44. Emre Alp, Halil Eşgin, M. Kürşat Kazmanlı, Aziz Genç\*, “Synergetic activity enhancement in 2D CuO-Fe<sub>2</sub>O<sub>3</sub> nanocomposites for the photodegradation of rhodamine B”, Ceramics International 45 (2019) 9174-9178.

43. Emre Alp, Emre Can Araz, Ahmet Furkan Buluç, Yağmur Güner, Yücel Değer, Halil Eşgin, Kamil Burak Dermenci, M. Kürşat Kazmanlı, Servet Turan, Aziz Genç\*, “Mesoporous nanocrystalline ZnO microspheres by ethylene glycol mediated thermal decomposition”, Advanced Powder Technology 29 (2018) 3455-3461.

42. Aziz Genç, “Hydrothermal Synthesis of Cuprous Oxide Nanoflowers and Characterization of Their Optical Properties”, Süleyman Demirel University Journal of Natural and Applied Sciences 22 (2018) 397-401.

41. Tuğrul Güner, Gökhan Topçu, Umut Savacı, Aziz Genç, Servet Turan, Emre Sarı, Mustafa M Demir, “Polarized emission from CsPbBr<sub>3</sub> nanowire embedded-electrospun PU fibers”, Nanotechnology 29 (2018) 135202.

40. Karina Elumeeva, Justus Masa, Danae Medina, Edgar Ventosa, Sabine Seisel, Yasin Ugur Kayran, Aziz Genç, Tim Bobrowski, Philipp Weide, Jordi Arbiol, Martin Muhler, Wolfgang Schuhmann, “Cobalt boride modified with N-doped carbon nanotubes as a high-performance bifunctional oxygen electrocatalyst”, J. Mater. Chem. A 5 (2017) 21122-21129.

39. Stefan Barwe, Corina Andronescu, Justus Masa, Edgar Ventosa, Stefan Klink, Aziz Genç, Jordi Arbiol, Wolfgang Schuhmann, “Polybenzoxazine-Derived N-doped Carbon as Matrix for Powder-Based Electrocatalysts”, ChemSusChem, 2017, Accepted Manuscript, doi: 10.1002/cssc.201700593.

38. Jordi Piella, Florind Merkoçi, Aziz Genç, Jordi Arbiol, Neus G Bastús, Victor Puentes, “Probing the Surface Reactivity of Nanocrystals by the Catalytic Degradation of Organic Dyes: The Effect of Size, Surface Chemistry and Composition”, J. Mater. Chem. A 5 (2017) 11917-11929.

37. Mauro Epifani, Saulius Kaciulis, Alessio Mezzi, Davide Altamura, Cinzia Giannini, Raúl Díaz, Carmen Force, Aziz Genç, Jordi Arbiol, Pietro Siciliano, Elisabetta Comini, Isabella Concina, “Inorganic Photocatalytic Enhancement: Activated RhB Photodegradation by Surface Modification of SnO<sub>2</sub> Nanocrystals with V<sub>2</sub>O<sub>5</sub>-like species”, Scientific Reports 7 (2017) 44763.

36. Aziz Genç,\* “Facile synthesis of ZnO nanostructures and enhancement of their sinterability via short-time cryo-milling”, Ceramics International 43 (2017), 1710-1715.

35. Aziz Genç,\* Javier Patarroyo, Jordi Sancho-Parramon, Neus G. Bastus, Victor Puentes, Jordi Arbiol,\* “Hollow metal nanostructures for enhanced plasmonics: Synthesis, local plasmonic properties and applications”, Nanophotonics 6 (2017), 193-213 (Invited review).

34. Zhishan Luo, Jianmin Lu, Cristina Flox, Raquel Nafria, Aziz Genç, Jordi Arbiol, Jordi Llorca, Maria Ibáñez, Joan Ramon Morante, Andreu Cabot, “Pd<sub>2</sub>Sn [010] Nanorods as a Highly Active and Stable Ethanol Oxidation Catalyst”, Journal of Materials Chemistry A 4 (2016), 16706-16713.

33. Mauro Epifani, PengYi Tang, Aziz Genç, Joan Ramon Morante, Jordi Arbiol, Raul Diaz, Susanne Wicker, "The Ethylhexanoate Route to Metal Oxide Nanocrystals: Synthesis of CoO Nanooctahedra from Co<sup>II</sup> 2-Ethylhexanoate", *European Journal of Inorganic Chemistry* 24 (2016) 3963-3968.
32. Javier Patarroyo, Aziz Genç, Jordi Arbiol, Neus G. Bastus, Victor Puentes, "One-pot polyol synthesis of highly monodisperse short green silver nanorods", *Chem. Comm.* 52 (2016) 10960-10963.
31. Michaela Meyns, Mariano Perálvarez, Amelie Heuer-Jungemann, Wim Hertog, Maria Ibáñez, Raquel Nafria, Aziz Genç, Jordi Arbiol, Maksym V Kovalenko, Josep Carreras, Andreu Cabot, Antonios G. Kanaras, "Polymer-Enhanced Stability of Inorganic Perovskite Nanocrystals and Their Application in Color Conversion LEDs", *ACS Appl. Mater. Interfaces* 8 (2016) 19579-19586.
30. Zhishan Luo, Erdem Irtem, Maria Ibáñez, Raquel Nafria, Sara Martí-Sánchez, Aziz Genç, Maria de la Mata, Yu Liu, Doris Cadavid, Jordi Llorca, Jordi Arbiol, Teresa Andreu, Joan Ramon Morante, Andreu Cabot, "Mn<sub>3</sub>O<sub>4</sub>@CoMn<sub>2</sub>O<sub>4</sub>-Co<sub>x</sub>O<sub>y</sub> Nanoparticles: Partial Cation Exchange Synthesis and Electrocatalytic Properties toward the Oxygen Reduction and Evolution Reactions", *ACS Applied Materials & Interfaces* 8 (2016) 17435-17444.
29. Zhenyu Sun, Edyta Madej, Aziz Genç, Martin Muhler, Jordi Arbiol, Wolfgang Schuhmann, Edgar Ventosa, "Demonstrating the steady performance of iron oxide composites over 2000 cycles at fast change-rates for Li-ion batteries", *Chem. Commun.* 52 (2016) 7348-7351 (Featured as the Inside back cover).
28. Aziz Genç, Javier Patarroyo, Jordi Sancho-Parramon, Raul Arenal, Martial Duchamp, Edgar Gonzalez, Luc Henrard, Neus G. Bastus, Rafal E. Dunin-Borkowski, Victor F. Puentes, Jordi Arbiol, "Tuning the Plasmonic Response up: Hollow Cuboid Metal Nanostructures", *ACS Photonics* 3 (2106) 770-779. **(Featured as the Front Cover of May 2016 Issue)**
27. Maria Ibáñez, ZhiShan Luo, Aziz Genç, Laura Piveteau, Silvia Ortega, Doris Cadavid, Oleksandr Dobrozhan, Yu Liu, Maarten Nachttegaal, Mona Zebarjadi, Jordi Arbiol, Maksym V. Kovalenko, Andreu Cabot, "High-Performance Thermoelectric Nanocomposites from Nanocrystal Building Blocks", *Nature Communications* 7 (2016) 10766.
26. Raquel Nafria, Aziz Genç, Maria Ibáñez, Jordi Arbiol, Pilar Ramírez de la Piscina, Narcís Homs, Andreu Cabot, "Co-Cu Nanoparticles: Synthesis by Galvanic Replacement and Phase Rearrangement during Catalytic Activation", *Langmuir* 32 (2016) 2267-2276.
25. Peng-Yi Tang, Li-Juan Han, Aziz Genç, Yong-Min He, Xuan Zhang, Lin Zhang, Jose Ramon Galan-Mascaros, Joan Ramon Morante, Jordi Arbiol, "Synergistic effects in 3D honeycomb-like hematite nanoflakes/branched polypyrrole nanoleaves heterostructures as high-performance negative electrodes for asymmetric supercapacitors", *Nano Energy* 22 (2016) 189-201.
24. Alexey Shavel, Maria Ibáñez, Zhishan Luo, Jonathan De Roo, Àlex Carreté, Mirjana Dimitrievska, Aziz Genç, Michaela Meyns, Alejandro Pérez-Rodríguez, Maksym V Kovalenko, Jordi Arbiol, Andreu Cabot, "Scalable heating-up synthesis of monodisperse

Cu<sub>2</sub>ZnSnS<sub>4</sub> nanocrystals”, *Chemistry of Materials* 28 (2016) 720-726,

23. Mauro Epifani, Elisabetta Comini, Raúl Díaz, Aziz Genç, Teresa Andreu, Pietro Siciliano, Joan R. Morante, “Acetone sensors based on TiO<sub>2</sub> nanocrystals modified with tungsten oxide species”, *Journal of Alloys and Compounds* 665 (2016) 345-351.

22. Damián Monllor-Satoca, Mario Bartsch, Cristian Fàbrega, Aziz Genç, Sandra Reinhard, Teresa Andreu, Jordi Arbiol, Markus Niederberger, Joan Ramon Morante, “What do you do, titanium? Insight into the role of titanium oxide as a water oxidation promoter in hematite-based photoanodes”, *Energy & Environmental Science* 8 (2015) 3242-3254.

21. Xuelian Yu, Jingjing Liu, Aziz Genç, Maria Ibáñez, ZhiShan Luo, Alexey Shavel, Jordi Arbiol, Guangjin Zhang, Yihe Zhang, Andreu Cabot, “Cu<sub>2</sub>ZnSnS<sub>4</sub>-Ag<sub>2</sub>S Nanoscale P-N Heterostructures as Sensitizers for Photoelectrochemical Water Splitting”, *Langmuir* 31 (2015) 10555-1056.

20. Xuelian Yu, Xiaoqiang An, Aziz Genç, Maria Ibáñez, Jordi Arbiol, Yihe Zhang, Andreu Cabot, “Cu<sub>2</sub>ZnSnS<sub>4</sub>-PtM (M = Co, Ni) Nano-Heterostructures for Photocatalytic Hydrogen Evolution”, *Journal of Physical Chemistry C* 119 (2015) 21882-21888.

19. Yanwen Yuan, Lulu Zhang, Jun Xing, Muhammad Iqbal Bakti Utama, Xin Lu, Ke-Zhao Du, Yongmei Li, Xiao Hu, Shijie Wang, Aziz Genç, Rafal E. Dunin-Borkowski, Jordi Arbiol, Qihua Xiong, “High-yield Synthesis and Optical Properties of g-C<sub>3</sub>N<sub>4</sub>”, *Nanoscale* 7 (2015) 12343-12350.

18. Mauro Epifani, Raul Díaz, Carmen Force, Elisabetta Comini, Marta Manzanares, Teresa Andreu, Aziz Genç, Jordi Arbiol, Pietro Siciliano, Guido Faglia, Joan Ramon Morante, “Surface Modification of TiO<sub>2</sub> Nanocrystals by WO<sub>x</sub> Coating or Wrapping: Solvothermal Synthesis and Enhanced Surface Chemistry”, *ACS Applied Materials & Interfaces* 7 (2015) 6898-6908.

17. ZhiShan Luo, Maria Ibáñez, Ana M. Antolin, Aziz Genç, Alexey Shavel, Sandra Contreras, Francesc Medina, Jordi Arbiol, Andreu Cabot, “Size and Aspect Ratio Control of Pd<sub>2</sub>Sn Nanorods and Their Water Denitration Properties”, *Langmuir* 31 (2015) 3952-3957.

16. Mafalda Rodrigues, Aziz Genç, Jordi Arbiol, David B. Amabilino, Lluïsa Pérez-García, “In situ template synthesis of gold nanoparticles using a bis-imidazolium amphiphile-based hydrogel”, *Journal of Colloid and Interface Science* 446 (2015) 53-58.

15. Mauro Epifani, Elisabetta Comini, Raul Diaz, Teresa Andreu, Aziz Genç, Jordi Arbiol, Pietro Aleardo Siciliano, Guido Faglia, Joan Ramon Morante, “Solvothermal, Chloroalkoxide-based Synthesis of Monoclinic WO<sub>3</sub> Quantum Dots and Gas-Sensing Enhancement by Surface Oxygen Vacancies”, *ACS Applied Materials & Interfaces* 6 (2014) 16808-16816.

14. Aziz Genç<sup>\*,†</sup>, Pinar Kaya<sup>†</sup>, Erhan Ayas, Mustafa Lütfi Öveçoğlu, Servet Turan, “Microstructural evolution of mechanically alloyed and spark plasma sintered Ni-W alloy

matrix composites”, *Journal of Alloys and Compounds* 571 (2013) 159-167.

**13.** Aziz Genç\*, Mustafa Lütfi Öveçoğlu, Servet Turan, “Characterization of Ni-W solid solution alloy powders and sintered compacts synthesized via mechanically activated hydrogen reduction of the NiO-WO<sub>3</sub> mixtures”, *Metals and Materials International* 19 (2013) 813-819.

**12.** Selim Coşkun, Aziz Genç, Mustafa Lütfi Öveçoğlu, “Synthesis of W – 3 wt.% Mn – 2 wt.% VC composites by high energy milling and sintering”, *Metals and Materials International* 19 (2013) 533-541.

**11.** Hasan Gökçe, Özge Balcı, Duygu Ağaoğulları, Ömer Utku Demirkan, Aziz Genç, Mustafa Lütfi Öveçoğlu, İsmail Duman, “Characterization Investigations of W-Ni Matrix Composites Reinforced with TiB<sub>2</sub> and La<sub>2</sub>O<sub>3</sub>”, *Acta Physica Polonica A* 123 (2013) 309-311.

**10.** Özge Balcı, Ömer Utku Demirkan, Duygu Ağaoğulları, Hasan Gökçe, Aziz Genç, Mustafa Lütfi Öveçoğlu, İsmail Duman, “Effects of La<sub>2</sub>O<sub>3</sub> Addition on the Microstructure and Properties of Activated Sintered W-Ni Compacts”, *Solid State Phenomena* 194 (2013) 217-221.

**9.** Duygu Ağaoğulları, Özge Balcı, Ömer Utku Demirkan, Hasan Gökçe, Aziz Genç, Mustafa Lütfi Öveçoğlu, İsmail Duman, Development of Mechanically Alloyed and Sintered W-1 wt.% Ni Matrix Composites Reinforced with TiB<sub>2</sub>”, *Solid State Phenomena* 194 (2013) 194-198.

**8.** Aziz Genç\*, Erhan Ayas, Mustafa Lütfi Öveçoğlu, Servet Turan, “Fabrication of In-situ Ni(W)-WC Nano Composites via Mechanical Alloying and Spark Plasma Sintering”, *Journal of Alloys and Compounds* 542 (2012) 97-104.

**7.** Aziz Genç\*, Mustafa Lütfi Öveçoğlu, Murat Baydoğan, Servet Turan, "Fabrication and characterization of Ni - W solid solution alloys via mechanical alloying and pressureless sintering", *Materials and Design* 42 (2012) 495-504.

**6.** Ömer Utku Demirkan, Aziz Genç\*, Mustafa Lütfi Öveçoğlu, "Effects of Al<sub>2</sub>O<sub>3</sub> addition on the microstructure and properties of Ni activated sintered W matrix composites", *International Journal of Refractory Metals and Hard Materials* 32 (2012) 33-38.

**5.** Sibel Özenler, Nihat Şahin, Beril Akaydın, Lütfi Öveçoğlu, Aziz Genç, Jean-Michel Leger, Teko W. Napporn, Figen Kadirgan, "Comparison of the ORR Activity of Carbon Supported PtCo/C and PtSnCo/C Electrocatalysts for PEM Fuel Cells", *ECS Transactions* 41 (2011) 1031-1042.

**4.** Aziz Genç\*, Mustafa Lütfi Öveçoğlu, “Characterization investigations during mechanical alloying and sintering of Ni - W solid solution alloys dispersed with WC and Y<sub>2</sub>O<sub>3</sub> particles”, *Journal of Alloys and Compounds* 508 (2010) 162-171.

**3.** Aziz Genç\*, Selim Coşkun, Mustafa Lütfi Öveçoğlu, “Fabrication and properties of

mechanically alloyed and Ni activated sintered W matrix composites reinforced with  $Y_2O_3$  and  $TiB_2$  particles”, *Materials Characterization* 61 (2010) 740-748.

2. Aziz Genç\*, Selim Coşkun, Mustafa Lütfi Öveçoğlu, “Microstructural Characterizations of Ni Activated Sintered W-2wt% TiC Composites produced via Mechanical Alloying”, *Journal of Alloys and Compounds* 497 (2010) 80-89.

1. Aziz Genç\*, Selim Coşkun, Mustafa Lütfi Öveçoğlu, “Decarburization of TiC in Ni activated sintered W – xTiC (x= 0, 5, 10, 15 wt%) composites and the effects of heat treatment on the microstructural and physical properties”, *International Journal of Refractory Metals and Hard Materials* 28 (2010) 451-458.

\* **corresponding author**, <sup>+</sup> **Equal contribution**

**Web of Science: Total Citations: 509, h-index: 12 (April 2019)**

**Google Scholar: Total Citations: 934, h-index: 18 (April 2019)**

## **Contributions to Conferences**

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41. Neus Bastus, Jordi Piella, Javier Patarroyo, Florind Merkoçi, Aziz Genç, Jordi Arbiol, Victor Puentes, “Colloidal Synthesis of Complex Multicomponent Inorganic Nanocrystals”, Applied Nanotechnology and Nanoscience International Conference – ANNIC 2019, November 18-20 2019, Paris, France (Invited Talk given by Neus Bastus).

40. Emre Alp, Aziz Genç\*, “Hidrotermal/Solvotermal Yöntemlerle Metal Oksit Nanoyapıların Kontrollü Sentezi, Karakterizasyonu ve Uygulamaları”, X<sup>th</sup> Ceramic Congress with International Participation, October 14-16, Afyonkarahisar, Turkey. **(Invited Talk in Turkish)**.

39. Aziz Genç, Jordi Arbiol, “Characterization of high performance thermoelectric nanocomposites”, The 24<sup>th</sup> National Electron Microscopy Congress (with International Contributions) 24 – 26 April, 2019, Edirne, Turkey. **(Invited Talk in Turkish)**.

38. Emre Alp, Halil Eşgin, M. Kürşat Kazmanlı, Aziz Genç, “Effects of CuO Sacrificed Template Amounts on the Morphologies of Hematite ( $\alpha$ -  $Fe_2O_3$ ) Nanostructures for Photocatalytic Applications”, 3. International Conference on Materials Science and Technology in Cappadocia, IMSTEC 2018, 17-19 September, 2018 Nevşehir, Türkiye. (Poster)

37. Emre Alp, M. Kürşat Kazmanlı, Aziz Genç\*, “Synergetic Photocatalytic Activity Enhancement in  $CuO-Fe_2O_3$  Nanocomposites”, 3. International Conference on Materials Science and Technology in Cappadocia, IMSTEC 2018, 17-19 September, 2018 Nevşehir, Türkiye. (Talk)

- 36.** Emre Alp, Umut Savacı, Burak Tekin, Halil Eşgin, Savaş Sönmezoğlu, Servet Turan, Aziz Genç\*, “Hydrothermal synthesis of hematite nanostructures for photocatalytic applications”, International Conference on Renewable Energy, ICREN2018, 25-27 April, 2018, Barcelona, Spain (Poster).
- 35.** Aziz Genç, “Understanding the Materials: Correlation of Performance and Microstructure at the Atomic Scale”, The 23<sup>rd</sup> National Electron Microscopy Congress (with International Contributions) 19 – 21 May, 2017, Antalya, Turkey. (**Invited Talk**).
- 34.** Halil Eşgin, Emre Alp, Aziz Genç, Müjdat Çağlar, “Synthesis and structural characterization of ZnO nanoflakes for solar cell applications”, The 23<sup>rd</sup> National Electron Microscopy Congress (with International Contributions) 19 – 21 May, 2017, Antalya, Turkey. (Poster in Turkish, **Second Prize in Best Poster Competition**).
- 33.** Peng-Yi Tang, Maria de la Mata, Li-Juan Han, Albert Verdager, Aziz Genç, Yong-Min He, Xuan Zhang, Lin Zhang, Jose Ramon Galan-Mascaros, Joan Ramon Morante, Jordi Arbiol, “Combined TEM/STEM and In-situ c-AFM Characterization of 2D Nanoflake-like Heterostructures for Energy Storage and Conversion Applications”, The 16th European Microscopy Congress (EMC 2016), 28 August – 2 September 2016, Lyon, France. (Poster)
- 32.** Jordi Arbiol, Aziz Genç, Reza R. Zamani, Maria de la Mata, “Insight on the fine structure of semiconductor nanowires down to single atom detection: correlation to their physical properties”, The 16th European Microscopy Congress (EMC 2016), 28 August – 2 September 2016, Lyon, France. (Talk)
- 31.** Aziz Genç, Javier Patarroyo, Jordi Sancho-Parramon, Raul Arenal, Neus G. Bastus, Victor F. Puentes, Jordi Arbiol, “Spatially Mapping the Plasmon Resonances of Hollow 1D Nanostructures: Hybrid AuAg Nanotubes”, The 16th European Microscopy Congress (EMC 2016), 28 August – 2 September 2016, Lyon, France. (Poster)
- 30.** Sara Martí-Sánchez, Aziz Genç, Maria Ibáñez, Maria de la Mata, Andreu Cabot, Jordi Arbiol, “Structural and chemical characterization and 3D modelling of metal oxide core-shell nanoparticles with complex morphology”, The 16th European Microscopy Congress (EMC 2016), 28 August – 2 September 2016, Lyon, France. (Poster)
- 29.** Jordi Arbiol, Maria de la Mata, Aziz Genç, “Non-planar Nanostructures at Atomic Scale: From Atomic Structure to Photonics in the (S)TEM”, Israel Society for Microscopy (ISM) Golden Jubilee 2016, 31 May-2 June 2016, Haifa, Israel (**Invited talk** given by Prof. J. Arbiol).
- 28.** Aziz Genç\*, Javier Patarroyo, Jordi Sancho-Parramon, Raul Arenal, Martial Duchamp, Edgar Gonzalez, Luc Henrard, Neus G. Bastus, Rafal E. Dunin-Borkowski, Victor F. Puentes, Jordi Arbiol, “Tuning the plasmonic response up by nanoengineering: Hollow AuAg nanostructures”, 12th International Nanoscience and Nanotechnology Conference (NanoTR-12), 03-05 June 2016, Kocaeli-Turkey. (Talk)



27. Javier Patarroyo, Aziz Genç, Jordi Sancho-Parramon, Raul Arenal, Martial Duchamp, Edgar Gonzalez, Luc Henrard, Neus G. Bastus, Rafal E. Dunin-Borkowski, Victor F. Puentes, Jordi Arbiol, "Tuning the Plasmonic Response up: Hollow Cuboid Metal Nanostructures", 7<sup>th</sup> Nanoscience with Nanocrystals, NaNaX7, 4-8 April, 2016, Marburg, Germany. (Poster)
26. Florind Merkoçi, Javier Patarroyo, Lorenzo Russo, Jordi Piella, Aziz Genç, Johannes Schlafer, Jordi Arbiol, Neus G. Bastus, Victor Puentes, "Mechnaistic Insights in the Pt-Ag Galvanic Replacement Reactions", 7<sup>th</sup> Nanoscience with Nanocrystals, NaNaX7, 4-8 April, 2016, Marburg, Germany. (Poster)
25. Neus G. Bastus, Javier Patarroyo, Florind Merkoçi, Aziz Genç, Jordi Arbiol, Lluís Soler, Jordi Llorca, Victor Puentes, "Coupled Synthesis of Noble Metal-CeO<sub>2</sub> Hybrid Nanostructures", 7<sup>th</sup> Nanoscience with Nanocrystals, NaNaX7, 4-8 April, 2016, Marburg, Germany. (Poster)
24. Aziz Genç, Javier Patarroyo, Jordi Sancho-Parramon, Martial Duchamp, Edgar Gonzalez, Neus G Bastus, Lothar Houben, Rafal Dunin-Borkowski, Victor F Puentes, Jordi Arbiol, "Hollow metal nanostructures for enhanced plasmonics", SPIE Photonic West (SPIE BIOS), 13-18 February, 2016, San Francisco, California, USA. Proc. SPIE 9722, Colloidal Nanoparticles for Biomedical Applications XI, 972206 (April 27, 2016); doi: 10.1117/12.2211598. (**Invited talk** given by Prof. J. Arbiol).
23. Jordi Arbiol, María de la Mata, Aziz Genç, "Photonic 1D nanomaterials: Correlation between Optical Properties at sub-nanometer scale with its structure at atomic scale", 16<sup>th</sup> Trends in Nanotechnology International Conference, TNT2015, 7-11 September, 2015, Toulouse, France (**Keynote talk** given by Prof. J. Arbiol)
22. Aziz Genç\*, Javier Patarroyo, Raul Arenal, Jordi Sancho-Parramon, Neus G. Bastus, Neus G. Bastus, Victor Puentes, Jordi Arbiol, "Plasmonic Nanoengineering in 1D Hollow Nanostructures: AuAg nanotubes", 22<sup>nd</sup> Electron Microscopy Congress, EMK2015, 2-4 September, 2015, İstanbul, Turkey (Talk)
21. Martial Duchamp, Aziz Genç, Jordi Arbiol, Rafal E. Dunin-Borkowski, "Spectral Mixture Analysis of Localized Surface Plasmon Resonances From Electron Energy-Loss Spectroscopy Spectrum Images", Multinational Congress on Microscopy, MCM2015, 23-28 August, 2015, Eger, Hungary (Poster)
20. Aziz Genç\*, Martial Duchamp, Javier Patarroyo, Rafal E. Dunin-Borkowski, Victor Puentes, Jordi Arbiol, "Correlation of Chemical and Plasmonic Properties of Hollow AuAg Nanostructures", The Third Conference of Frontiers of Aberration Corrected Electron Microscopy, PICO2015, 19-23 April, 2015, Kasteel Vaalsbroek, The Netherlands (Poster)
19. Martial Duchamp, Aziz Genç, Jordi Arbiol, Rafal E. Dunin-Borkowski, "Spectral Unmixing of Localized Surface Plasmon Resonances from an Electron Energy-Loss Spectroscopy Dataset", The Third Conference of Frontiers of Aberration Corrected Electron

Microscopy, PICO2015, 19-23 April, 2015, Kasteel Vaalsbroek, The Netherlands (Poster)

**18.** Aziz Genç\*, Javier Patarroyo, Raul Arenal, Luc Henrard, Edgar Gonzalez, Neus G. Bastus, Victor Puentes, Jordi Arbiol, “Plasmonic Nanoengineering in Hollow Metal Nanostructures”, Materials Research Society 2015 Spring Meeting & Exhibit, MRS Spring 2015, 6-10 April, 2015, San Francisco, California, USA (Talk)

**17.** Mauro Epifani, Elisabetta Comini, Raul Diaz, Teresa Andreu, Aziz Genç, Jordi Arbiol, Pietro Siciliano, Guido Faglia, Joan Ramon Morante, “TiO<sub>2</sub> Anatase Nanocrystals Modification by WO<sub>3</sub> for Enhanced Gas Sensors: From Surface Deposition to Heterojunctions”, Materials Research Society 2015 Spring Meeting & Exhibit, MRS Spring 2015, 6-10 April, 2015, San Francisco, California, USA (Talk)

**16.** Mauro Epifani, Elisabetta Comini, Raul Diaz, Teresa Andreu, Aziz Genç, Jordi Arbiol, Pietro Siciliano, Guido Faglia, Joan Ramon Morante, “Surface modification, heterojunctions, and other structures: composing metal oxide nanocrystals for chemical sensors”, SPIE Photonics West, 7-12 February, 2015, San Francisco, California, USA (**Invited talk** given by Prof. M. Epifani), SPIE OPTO, 936415-936415-5.

**15.** Aziz Genç, Javier Patarroyo, Raul Arenal, Luc Henrard, Edgar Gonzalez, Neus G. Bastus, Victor Puentes, Jordi Arbiol, “Plasmonic nanoengineering in metal nanostructures: from solid nanocubes to complex hollow multi-walled nanoboxes”, SPIE Photonics West, 7-12 February, 2015, San Francisco, California, USA (**Invited talk** given by Prof. J. Arbiol)

**14.** Mauro Epifani, Elisabetta Comini, Raul Diaz, Teresa Andreu, Aziz Genç, Jordi Arbiol, Pietro Siciliano, Guido Faglia, Joan Ramon Morante, “Acetone Sensing with TiO<sub>2</sub>-WO<sub>3</sub> Nanocomposites: An Example of Response Enhancement by Inter-oxide Cooperative Effects”, 28<sup>th</sup> European Conference on Solid-State Transducers, EUROSENSORS2014, 7-10 September, 2014, Brescia, Italy (Talk), *Procedia Engineering* 87(2014) 803-806.

**13.** Aziz Genç\*, Raul Arenal, Javier Patarroyo, Luc Henrard, Edgar Gonzalez, Victor Puentes, Jordi Arbiol, “Plasmonic properties of hollow AuAg nanostructures by STEM-EELS”, 18<sup>th</sup> International Microscopy Congress, IMC 2014, 7-12 September, 2014, Prague, Czech Republic (Poster)

**12.** Javier Patarroyo, Aziz Genç, Raul Arenal, Edgar Gonzalez, Jordi Arbiol, Victor Puentes, “STEM-EELS mapping of the surface plasmon resonances of bimetallic AuAg complex hollow nanoparticles”, Nanoscience with Nanocrystals, NaNaX 6, 18-23 May, 2014, Bad Hofgastein, Austria (Poster)

**11.** Aziz Genç\*, Raul Arenal, Javier Patarroyo, Edgar Gonzalez, Victor Puentes, Jordi Arbiol, “Mapping the surface plasmon resonances of single and double wall AuAg nanoboxes via STEM-EELS”, Materials Research Society 2013 Fall Meeting & Exhibit, MRS Fall 2013, 1-6 December, 2013, Boston, Massachusetts, USA (Poster)

10. Aziz Genç\*, Alfredo de la Escosura-Muñiz, Arben Merkoçi, Jordi Arbiol, “HRTEM Characterization and Modeling of Spheroidal Decahedron Shaped Au Nanoparticles”, Microscopy at the Frontiers of Science, MFS2013, 17-20 September, 2013, Tarragona, Spain (Poster)
9. Aziz Genç, Şeyma Duman, Burak Özkal, M. Lütfi Öveçoğlu, “Enhancing the Sinterability of ZnO Nanopowders via Short Time Cryogenic Milling”, 12nd International Conference on Novel and Nano Materials, ISNNM 2012, 26-30 August, 2012, İstanbul, Turkey (Talk)
8. Aziz Genç\*, M. Lütfi Öveçoğlu, "Synthesis and microstructural characterizations of ZnO nanowires", 20<sup>th</sup> National Electron Microscopy Congress with International Participation, 25-28 October, 2011, Antalya, Turkey (Talk)
7. Aziz Genç\*, Selim Coşkun, M. Lütfi Öveçoğlu, “Growth and characterization of  $W_{18}O_{49}$  nanorods on sintered W substrates”, 17<sup>th</sup> International Microscopy Congress, IMC17, Symposium M1-Nanowires, Nanotubes and Particles, 19-24 September, 2010, Rio de Janeiro, Brazil (Poster).
6. Duygu Ağaoğulları, Hasan Gökçe, Aziz Genç, İsmail Duman, M. Lütfi Öveçoğlu, “Characterization of mechanically alloyed and sintered ZrC particulate reinforced Al matrix composites”, 19th International Conference on Metallurgy and Materials, Metals2010, Non-Ferrous Metals and Alloys Session, 18-20 May, 2010, Roznov pod Radhostem, Czech Republic (Talk)
5. Aziz Genç\*, Selim Coşkun, M. Lütfi Öveçoğlu, “Microstructural Characterizations of Mechanically Alloyed and Sintered W–TiC–Ni Composites”, I. International Ceramic, Glass, Porcelain Enamel, Glaze and Pigment, SERES09, October 12-14, 2009, Eskişehir, Turkey (Poster)
4. Aziz Genç\*, Selim Coşkun, M. Lütfi Öveçoğlu, “Production of TiC/VC Dispersed W-Ni Nano Composites”, International Conference on Nanomaterials and Nanosystems, NanoMats2009, 10-13 August, 2009, İstanbul, Turkey (Talk)
3. Aziz Genç\*, Selim Coşkun, M. Lütfi Öveçoğlu, “Development and Characterization Investigations of Mechanically Alloyed W-VC-Ni Composites”, 2009 International Conference on Powders Metallurgy & Particulate Materials, PowderMet2009, June 28 - July 1, 2009, Las Vegas, Nevada, USA (Talk)
2. Selim Coşkun, Aziz Genç, M. Lütfi Öveçoğlu, “Development and Characterization Investigations of Mechanically Alloyed W-Mn-VC Composites”, 2009 International Conference on Powders Metallurgy & Particulate Materials, PowderMet2009, June 28 - July 1, 2009, Las Vegas, Nevada, USA (Talk)
1. Selim Coşkun, Aziz Genç, M. Lütfi Öveçoğlu, “Development and Characterization Investigations of Mechanically Alloyed W-Ni/TiC Composites”, The Minerals, Metals & Materials Society 138th Annual Meeting and Exhibition, TMS2009, 15-19 February, 2009,

San Francisco, California, USA (Talk)

\* **presenting author**

### **Invited Seminars Given at Universities / Research**

#### **Institutes**

3. Aziz Genç, Understanding the Materials: Correlation of Performance and Microstructure at the Atomic Scale, Erciyes University, Turkey, March 14, 2017
2. Aziz Genç, Plasmonic properties of hollow metallic nanostructures, Ernst Ruska-Centre for Microscopy and Spectroscopy with Electrons (ER-C), Forschungszentrum Jülich, Germany, October 6, 2014
1. Aziz Genç, Plasmonic nanoengineering in metal nanostructures: from solid nanocubes to hollow multi-walled nanoboxes, Gradečak Group, Massachusetts Institute of Technology (MIT), USA, May 24, 2014

### **Hands on Experience on Analytical Instruments and**

#### **Techniques**

- High Resolution (Scanning) Transmission Electron Microscopy ((S)TEM) and Related Techniques such as Electron Energy Loss Spectroscopy (EELS), Energy Dispersive X-Ray Spectroscopy (EDS) and Cathodoluminescence (CL) Spectroscopy
- Scanning Electron Microscopy (SEM) and Electron Backscatter Diffraction (EBSD)
- X-Ray Diffractometer (XRD) and Total Pattern Analysis Solutions (TOPAS) Software
- High Temperature Processing of Materials, i.e. Sintering, Spark Plasma Sintering, Annealing, etc
- Synthesis of nanostructures, i.e. Hydrothermal synthesis, mechanical alloying, high energy ball milling, thermal decomposition of metal-organic precursors
- Characterization of powder properties, i.e. BET, particle size analyzer, morphological characterizations
- Differential Scanning Calorimetry (DSC) and Differential Thermogravimetric Analysis (DTA)
- Sample Preparation Equipments for Micro/Nano-structural Characterizations

### **Professional**

#### **Service**

#### **Reviewer for:**

- Composite Science and Technology
- Journal of Alloys and Compounds
- Materials Characterization
- International Journal of Engineering
- Journal of Materials Science
- Materials and Design

- Metallurgical and Materials Transactions A
- Optics Letters
- Science of Advanced Materials
- Optics and Laser Technology
- Powder Technology
- Surface & Coatings Technology

**Member:**

- European Microscopy Society
- Spanish Microscopy Society
- Materials Research Society
- Turkish Electron Microscopy Society

**Awards and**

**Scholarships**

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- TÜBİTAK UIDB Threshold Prize for getting 83.60 points from a H2020 Marie Curie Individual Fellowship Application.
- German Academic Exchange Office (DAAD) Scholarship for a 4 months stay at the Ernst Ruska-Centre (ER-C) for Microscopy and Spectroscopy with Electrons, Jülich, Germany
- International Federation of Societies for Microscopy (IFSM) Young Scientist Award at 18th International Microscopy Congress (IMC 2014, 7-12 September 2014, Prague, Czech Republic)
- Ministry of National Education (MEB) of Turkey PhD Scholarship (2012-2015)
- International Federation of Societies for Microscopy (IFSM) Young Scientist Award at 17th International Microscopy Congress (IMC17, 19-24 September 2010, Rio de Janeiro, Brazil)
- Participation Scholarships to Several Congresses
  - International Microscopy Congress (IMC 2014, 7-12 September, 2014, Prague, Czech Republic by European Microscopy Society)
  - Microscopy at the Frontiers of Science (MFS2013, 17-20 September 2013, Tarragona, Spain by Spanish Microscopy Society),
  - 20th National Electron Microscopy Congress with International Participation (25 - 28 October 2011, Antalya, Turkey by the Turkish Microscopy Society and the Scientific and Technological Research Council of Turkey, TÜBİTAK)
  - 2009 International Conference on Powders Metallurgy & Particulate Materials, (PowderMet2009, June 28 - July 1 2009, Las Vegas, Nevada, USA by the TÜBİTAK).

**Workshops and**

**Certificates**

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- 3<sup>rd</sup> IFSM School (September 7th, 2014) during IMC 2014, 7-12 September, 2014, Prague, Czech Republic (Lecturers: C. Barry Carter, David Williams, Joe Michael and Paul Midgley)
- IFSM Advanced School (September 19th, 2010) during IMC17, 19-24 September 2010, Rio de Janerio, Brazil (Lecturers: Knut Urban, Ringler Philippe, Michael S. Isaacson, Christian Colliex)
- School and Workshop on Electron Microscopy of Ceramic Materials (EMCM), 8-13 October 2009, Anadolu University, Eskisehir, Turkey (Lecturers included: C. Barry Carter, Rafal Dunin-Borkowski, Kevin M. Knowles, Martin Hytch, Günter Möbüs, Chris Boothroyd and many more...)
- TOPAS 4.1 (Bruker AXS) Workshop, by Bernd Hinrichsen, 19 – 23 January 2009, İstanbul, Turkey
- 2nd Project and Research Summit: Interdisiplinarity, 9 – 10 May 2008, Boğaziçi University, İstanbul, Turkey

## **Language**

### **Skills**

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- English (Advanced)
- Spanish (Intermediate)
- Turkish (Native)