

Curriculum Vita

Hanadi Salem

Date: September 2023

PERSONAL INFORMATION

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AMCL: <http://www.amcl-auc.com/>

ACADEMIC RANKS

- Sep. 2010-Present Professor, Department of Mechanical Engineering in the area of Materials & Manufacturing, SSE/AUC
- June 2004-June 2010 Associate Professor, Department of Mechanical Engineering in the area of Materials & Manufacturing, SSE/AUC
- Sep.1999-Aug. 2004 Assistant Professor, Department of Mechanical Engineering in the area of Materials, and Manufacturing, American University in Cairo-Egypt.
- Oct. 1997-Aug. 1999 Assistant Professor, Department of Power and Production Engineering, in the area of Mechanics and Materials, Higher Technological Institute in 10th of Ramadan City-Egypt.

ADMINISTRATIVE AFFILIATIONS:

- July 2020 – Present Mechanical Engineering Department Chairperson
- Sept. 2024-Aug. 2025 AUC Elected Vice Chair of the University Senate
- Sept. 2020-Aug. 2024 AUC Elected Chair of the University Senate
- Sept. 2019-Aug. 2020 AUC Elected Vice Chair of the University Senate
- Feb. 2019-present Founder and Director of the Additive Manufacturing Centennial Lab (AMCL)
- Feb. 2016- Aug. 2019 AUC Senate Faculty Affairs Chair
- Sep. 2014-2019 AUC Focal Point and Founding Representative, Egyptian National Nanotechnology Network (ENNN), under the auspicious of the ASRT, AUC

EDUCATION

- Ph.D. Mechanical Engineering, Texas A&M University, TX, USA, Dec. 1997
- M.Sc. Materials Science and Engineering, American University in Cairo, June 1987
- B.Sc. Materials Science and Engineering, American University in Cairo, June 1983

OTHER RELATED EXPERIENCE:

- January 4th-25th, 2015 Visiting Professor, Department of Materials Science, Birmingham University, Birmingham, UK
- June 2010-August 2010 Visiting Professor, Mechanical and Aerospace Engineering Department, North Carolina State University (NCSU), Raleigh, NC, USA
- March 2010- May 2010 Visiting Professor, Functional materials Division, Royal Institute of Technology (KTH), Stockholm, Sweden
- July 2005-August 2005 Visiting Professor, Materials Science and Engineering Department, Georgia Institute of Technology, Atlanta GA, USA

June 2003-August 2003 Visiting Scholar, Department of Mechanical Engineering University of South Carolina, Colombia, SC, USA

June 2002-August 2002 Visiting Scholar, Department of Mechanical Engineering University of South Carolina, Colombia, SC, USA

TEACHING EXPERIENCE

Undergraduate Courses:

ENGR 101/1001	Introduction to Engineering
ENGR 229/2112	Strength and Testing of Materials
MENG 327/3227	Engineering Materials
MENG 426/4226	Metals, Alloys & Composites
MENG 427/4227	Failure of Mechanical Components
MENG 428/4228	Selection of Materials and Processes for Design
MENG 433/4233	Welding & Casting: Design, Maintenance and Inspection
MENG 429/4229	Nanostructured Materials
MENG 451/4551	Design for Additive Manufacturing
MENG 490/4980	Senior Design I, coordinator and project supervisor
MENG 421/4221	Composites: Design, Materials, and Application
MENG 490/4981	Senior Design II, coordinator and project supervisor

Graduate Courses:

MENG 521/5221	Advanced Topics in Mechanical Behavior of Engineering Materials
MENG 522/5222	Materials in Design and Manufacturing
MENG 533/5233	Additive Manufacturing: Materials, Processes and Applications
MENG 523/5223	Physical Metallurgy
MENG 529/5229	Failure Analysis and Prevention
NANO 531/5200	Nanomaterials Synthesis, Processing and Applications
NANO 532/5232	Nanocomposites Science and Technology
NANO 590/5980	Graduate Thesis Seminar I

RESEARCH ACTIVITIES HIGHLIGHTS

Research Interest

1. Wire Arc Additive/Subtractive Manufacturing and Repair
2. Additive Manufacturing of Cellular Structures for Biomedical Applications using Selective Laser Melting
3. High Entropy Alloy Design, Processing for high temperature Applications
4. Self-Lubricating nanocomposites for high performance applications
5. Nanostructured Nanocomposites Fabrication
6. Innovative Designs of Severe Plastic Deformation Dies (ECAP, HPT, TMP)
7. Friction Stir Welding/Processing (FSW/FSP)

Research Collaboration:

A. National Collaborations:

Cairo university, BaniSwif, Helwan, Galala Univeristy, Swiss Canal University, Ain Shams University, German University in Cairo (GUC), British University in Egypt (BUE), Canadian University in Cairo, Egypt-Japan University of Science and Technology (EJUST), Al-Mansoura University, National Research Center, Central Metallurgical R&D Institute (CMRDI)

B. International and Regional Collaborations:

1. Département de génie mécanique, The École de technologie supérieure (ETS), Québec, Canada
2. Institution of Metallurgy of Clausthal Technical University, Germany
3. Functional Materials Group, The Royal Institute of Technology (KTH), Stockholm, Sweden;
4. Department of Materials and Environmental Chemistry, Stokholm University, Stokholm, Sweden
5. Department of Metallurgy and Materials, Birmingham University, Birmingham, UK
6. Department of Mechanical and Aerospace Engineering, North Carolina State University, NC USA
7. Department of Materials Science, Georgia Institute of Technology, Colombia,GA USA
8. Department of Mechanical Engineering, University of South Carolina, SC USA
9. Department of Mechanical and Aerospace Engineering, George Washington University, Washington, DC, USA
10. Department of Mechanical and Manufacturing Engineering, Farmingdal State College.
11. Department of Engineering and Information Sciences, University of Wollongong, Australia
12. Department of Mechanical Engineering University of Alberta, Alberta, Canada
13. Computational Solid Mechanics Laboratory, Division of Physical Sciences and Engineering, King Abdullah University of Science and Technology (KAUST), SA

Funded Research Grants (since 2015)

1. AUC Research Grant (PI), “Repair of High-Value Worn-Out Mn-Steel Railway Parts using The Green Technology of Additive/Subtractive integrated Robotic System”, July 2023-Jan 2025, US\$ 26,425
2. AUC Research Grant (CoPI), Sustainable Green Construction using robotically controlled AM”, July 2022-December 2023, US\$25K
3. AUC Research Grant (CoPI), “Process Design of a Wire-Arc-Additively-Manufactured Aluminum Impact Attenuator for Commercial Cars, January 2021-present, US\$25.24K
4. AUC Workshop organization grant “Robotic 3d Metal Printing for Innovative Designs & Applications”, June-22-July 3, 2021, (PI), US\$1100AUC Research Grant (CoPI), January 1, 2022, **US\$25K**
5. AUC Research Grant (CoPI), January 2021, **US\$25.24K**
6. AUC Workshop organization grant, (PI), June 2021, **US\$1100**
7. AUC Research Grant (PI), January 2020, **US\$26.5K**
8. ABB Leading Digital Technology (PI), July 2020, **US\$18K**
9. AUC Educational Initiative Fund (PI), June 2019, **US\$140K** + Lab Adoption for **EGP>1.3M**
10. AUC Centennial Lab Fund (PI), February, 2019, **US\$50.6K**
11. AUC Proof of Concept (PI, February, 2019, **US\$15K**
12. AUC Proof of Concept (CoPI), December 2018, **US\$15K**
13. AUC, “Enhanced Shear Rolling” (CoPI), **EGP500K**
14. JESOR/ASRT Research Grand, H. G. Salem, K. Elkhodary, M. Farag, February 2016. **EGP1M**
15. Masr ElKair, Nageh Allam and Hanadi Salem, March 2016. **EGP1,200,000**
16. ASRT, *ENNN Founding Grant*, Spring 2016, **EGP180K**

Conference Grants: Since 2017

1. Conference Grant by AUC, TMS, 2023, Annual Meeting and Exhibition, San Diego, CA, USA, March 18-23, 2023. **(US\$3.7K)**
2. Conference grant by AUC, MS&T, 2021, Annual Meeting and Exhibition, Columbus, Ohio, October 11-14, 2021. **(US\$3.5K).**
3. Conference grant by AUC, MS&T, 2019, Annual Meeting and Exhibition, Portland, OR, October 11-14, 2019. **(US\$3.5K).**
4. Conference grant by AUC, MS&T, 2018, Annual Meeting and Exhibition, Columbus, OHIO, October 14-18, 2018. **(US\$3.5K).**

5. Conference grant by AUC, TMS 2017, Annual Meeting and Exhibition, San Diego, CA USA Feb.24-March 3, 2017, **US\$3.5K**.
6. Workshop grant by AUC, ENNN Workshop and Nanotechnology in Construction C, Sharm El-Sheikh, March 17-19, 2017.

Publications in Referred Journals: Since 2017

1. W. H. El-Garaihy, A. I. Alateyah, Mohamed M. Z. Ahmed, Mohamed S. El-Asfoury, Majed O. Alawad, Amal BaQais, Yasser Zedan, and Hanadi G. Salem, "Improving In-Vitro corrosion and Degradation Performance of Mg–Zn–Ca Alloy for Biomedical Applications by Equal Channel Angular Pressing", *Met. Mater. Int.* (2024). <https://doi.org/10.1007/s12540-023-01599-0>.
2. Waleed H El-Garaihy, Abdulrahman I Alateyah, Mahmoud Shaban, Mohammed F Alsharekh, Fahad Nasser Alsunaydih, Samar El-Sanabary, Hanan Kouta, Yasmine El-Taybany, and Hanadi G. Salem, "A Comparative Study of a Machine Learning Approach and Response Surface Methodology for Optimizing the HPT Processing Parameters of AA6061/SiCp Composites" *Journal of Manufacturing and Materials Processing*, (Q1) (2023), Vol. 7 (4), pp. 148.
3. MM El-Husseiny, AA Baraka, O Oraby, EA El-Danaf, H. G. Salem, "Fabrication of Bimetallic High-Strength Low-Alloy Steel/Si-Bronze Functionally Graded Materials Using Wire Arc Additive Manufacturing", *Journal of Manufacturing and Materials Processing (Q1)*, (2023), Vol. 7 (4), 138.
4. Mahmoud Shaban, Abdulrahman I Alateyah, Mohammed F Alsharekh, Majed O Alawad, Amal BaQais, Mokhtar Kamel, Fahad Nasser Alsunaydih, Waleed H El-Garaihy, and Hanadi G. Salem, "Influence of ECAP Parameters on the Structural, Electrochemical and Mechanical Behavior of ZK30: A Combination of Experimental and Machine Learning Approaches, *Journal of Manufacturing and Materials Processing*", (Q1), (2023), 7 (2), 52.
5. A Elskaty, O Oraby, S Sadek, H. G. Salem , "Influence of Wire Arc Additive Manufacturing Beads' Geometry and Building Strategy: Mechanical and Structural Behavior of ER70S-6 Prismatic Blocks", *Journal of Manufacturing and Materials Processing*, 2023, 7 (1), 3, (18 pages).
6. H Salem, P Ibrahim, MM Attallah, H.G. Salem, Effect of Oxygen Diffusion During the Post-Processing of Ti6Al4V Lattice Structures Fabricated by the Selective Laser Melting Process *Journal of Engineering Materials and Technology* , 2022, 144 (3), 31006 (7 pages).
7. A. Geraldine Anis, Moataz M Attallah, H. G. Salem, "Temperature-dependent enthalpy and entropy stabilization of solid solution phases in non-equiatomic CoCrFeNiTi high entropy alloys: computational phase diagrams and thermodynamics", *Modeling and Simulation in Materials Science and Engineering* (2022), Vol. 30, pp. 1-22.
8. D.M. Fouad, W.H. El-Garaihy, M.M.Z. Ahmed, Ibrahim Albaijan, M.M. A. El-Sayed Seleman and H.G. Salem, "Grain Structure Evolution and Mechanical Properties of Multi-Channel Spiral Twist Extruded AA5083", *Metals*, (Q1), *Metals* 2021, 11, pp. 1276.
9. Mohamed Shokeir, Sandy El Moghazi, Ahmed F. Omara, Ahmed Elghazaly, Mohamed M. Emara, And Hanadi G. Salem, "Influence of Graphene, SiCnp, and G/SiCnp Hybrid Fillers on the Strengthening Mechanisms of Al-Matrix", *MMTA (Q1)*, March 2020, vol. 6, pp. 1543-1940.
10. H Salem, LN Carter, MM Attallah, H. G. Salem, "Influence of processing parameters on internal porosity and types of defects formed in Ti6Al4V lattice structure fabricated by selective laser melting", *Materials Science and Engineering: A (Q1)*, (2019), Vol. 767, pp.138387.
11. D. M Fouad, A Moataz, W. H. El-Garaihy, H. G. Salem, "Numerical and experimental analysis of multi-channel spiral twist extrusion processing of AA5083", *Materials Science and Engineering: A (Q1)*, (2019), Vol. 764, pp. 138216.
12. Muhammed S. Abdallah, Fatma Y. Hassaneen, Yasmin Faisal, Mohy S. Mansour, A.M. Ibrahim, Saleh Abo-Elfadl, H.G. Salem and Nageh K. Allam, "Effect of Ni-Ferrite and Ni-Co-Ferrite

- nanostructures on biogas production from anaerobic digestion”, Fuel (Q1), (2019) Vol. 254, pp. 115673.
13. D. M. Foad, W. H ElGaraihy, M. M. Z. Mohamed, M. M. Elsayed Seleman and H. G. Salem, “Influence of multi-channel spiral twist extrusion (MCSTE) processing on structural evolution, crystallographic texture and mechanical properties of AA1100W”, Materials Science & Engineering A (Q1), Vol 737, (2018), pp. 166-176.
 14. H. ElGaraihy, D. M. Foad and H. G. Salem, “Multi-Channel Spiral Twist Extrusion (MCSTE): A Novel Severe Plastic Deformation Technique for Grain Refinement”, Metallurgical & Materials Transactions A (Q1), Vol. 49A, (July 2018), pp. 2845-2864.
 15. A ElGhazaly, Geraldine Anis, Hanadi G Salem, “Effect of graphene addition on the mechanical and tribological behavior of nanostructured AA2124 self-lubricating metal matrix composite” Composites Part A (Q1), Vol. 95, (2017), pp.325-33

Articles in Refereed Conferences, since 2017

1. H.Salem, L. N. Carter, M. M. Attallah and H. G. Salem, “The Influence Of Processing Parameters On Strut Diameter And Internal Porosity In Ti6al4v Cellular Structure”, 2018 MS&T Annual Conference and Exhibition, Additive Manufacturing of Metals: Microstructure and Materials Properties, October 2018, pp. 71-77.
2. D.M. Fouad, A. Moataz, W.H. El-Garaihy, H.G. Salem, “Multi-Objective Optimization Of Multi-Channel Spiral Twist Extrusion Process Using A Response Surface Approach And Finite Element Analysis”, 2018 MS&T Annual Conference and Exhibition, Solid State Symposium, October 2018, pp. 1470-1477.
3. L. M. Wahsh, A. E. ElShater, A. K. Mansour, F. A. Hamdy, M. A. Turkey, M. O. Azzam and H. G. Salem, “Parameter Selection For Wire Arc Additive Manufacturing (WAAM) Process”, 2018 MS&T Annual Conference and Exhibition, Additive Manufacturing of Metals: Microstructure and Materials Properties, October 2018, pp. 76-85.
4. P. Morcos, KI ElKhodary, H. G. Salem, “Mechanically Alloyed Magnesium Based Nanostructured Alloy Powders for Biomedical Applications”, Magnesium Technology 2017, The Minerals, Metals & Materials Series, pp 35-41.
5. H. Salem, H. G. Salem, M. M. Attallah, “Composite Powder Consolidation Using Selective Laser Melting: Input Energy/Porosity Morphology/Balling Effect Relation” TMS 2017, Annual Meeting & Exhibition Supplemental Proceedings The Minerals, Metals & Materials Series pp 169-180.
6. A El Ghazaly, M Shokeir, SN El Moghazi, A Fathy, MM Emara and H. G. Salem, “Nanocomposites Mechanical and Tribological Properties Using Graphene-Coated-SiC Nanoparticles (GCSiC_{NP}) for Light Weight Applications”, TMS 2017, Annual Meeting & Exhibition , Proceedings of the 3rd Pan American Materials Congress, Part of the series The Minerals, Metals & Materials Series, (2017), pp 403-415.

Articles in None-refereed Conferences, Workshops and Media, since 2017:

1. Salem, H. A., Abdelmohsen, S. M. A., "Robotic Non-Planer 3D printing, Metal Vs. Clay," DigitalFuture 2022, DigitalFuture. June 2022. <https://digitalfutures.international/>
2. Nawar, H. G., Salem, H. A., "Manifestations scientifiques," Ecrire et Conter: À L'OCCASION DE LA CÉLÉBRATION DU BICENTENAIRE DUDÉCHIFFREMENT DES HIÉROGLYPHES PAR JEAN-FRANÇOIS CHAMPOLLION, Institut Français Egypt a Mounira and IFAO: Institut Français d'Archéologie Orientale Year: 2021. October 10, 2022. <https://www.al-fanarmedia.org/2022/11/ecrire-et-conter-french-institutecelebrates-writing-and-printing-in-egypt/>
<https://www.ifegypte.com/ar/ecrire-et-conter-decouvrez-lexposition-de-life>

<https://www.ifao.egnet.net/recherche/manifestations/ma1471/>

3. Abdelmohsen, S. M. A., Salem, H. A., "Digital Manufacturing for Sustainable and Cleaner Construction," 2022 United Nations Climate Change Conference (COP27), Sharm El Sheikh. November 2022.
4. Al Ahram Newspaper, "JESOUR El TANMIA", Feb. 2nd 2017.
<http://www.ahram.org.eg/News/202177/4/579285/قضايا-واراء-جسور-التنمية.aspx>

El Sherouk Newspaper, titled "Egyptian Project for Aircraft Repair using 3D-Printing" was

Conference and Workshop Presentations Since 2017

1. Salem, "Additive/Subtractive integrated Repair System for High-Value Worn-Out Railway Parts," 2024, TMS Annual Meeting and Exhibition.
2. Salem, "Strain Measurement Using Non-Rigid Registration For Mechanical Applications: A Case Study On WAAM-ed Product," 2023 TMS Annual Meeting and Exhibition.
3. Salem and M.F Aly, "Design, modeling and optimization of a light weight impact attenuator for commercial vehicles using Wire Arc Additive/Subtractive Manufacturing (WAASM) Processing," 2023 TMS Annual Conference and Exhibition, ASM, San Diego. March 15, Symposium: Additive Manufacturing of Large-scale Metallic Components.
4. Salem, "Fabrication of HSLA Steel Si-Bronze Aluminum Functionally Graded Material using Wire Arc Additive Manufacturing," 2023 TMS Annual Conference and Exhibition, ASM, San Diego, USA. March 19, 2023. Symposium: Additive Manufacturing and Innovative Powder/Wire Processing of Multifunctional Materials.
5. Salem, "A proposed sustainable framework to assess wire arc additive manufacturing efficiency in processing of different mechanical components," Columbus, Ohio, USA: Materials Science and Technology MS&T21.
6. "Influence of Bead's Geometry on the Residual Stresses, Structural and Mechanical behavior in Wire Arc Additive Manufacturing," Yes 2021 MS&T Annual Meeting and Exhibition.
7. Salem, H. A., Febex-Metal Steel Exhibition, 2019, Cairo. March 2019.
8. Anis, G. (Author & Presenter), Attallah, M. (Author), Youssef, M., Salem, H. A. (Author), "Design of a CoCrFeNiTi High Entropy Alloy – From Computations to Experiments," AUC-RCC 19 EURECA Conference, AUC, New Cairo, Egypt. April 2019.
9. Salem, H. A., "Wire Arc Additive Manufacturing for restoration of Aircraft parts at low cost," ASRT/JESOR Research Executive Committee, ASRT, ASRT, DownTown. June 2019.
10. Salem, H. A., "Wire Arc Additive Manufacturing for Industrial Part," 6th Cairoinnovate Exhibition, ASRT, Cairo. October 24, 2019.
11. Salem, H. A., "Wire Arc Additive Manufacturing for Industrial application," 6th International Cairo Innovate Exhibition, 24-26 October 2019, ASRT, Cairo. October 24, 2019.
12. Salem, H. A., "Advanced Materials & Manufacturing for Biomedical Application," International Workshop on Biosensors & Biotechnology American University in Cairo, AUC, AUC. November 20, 2019.
13. "Integrated Additive Manufacturing System: A Novel Technology for Manufacturing/Repair and Maintenance of Industrial Parts at Low Cost", invited speech, International Conference on Materials Science and Engineering: ICMSE-RAC 2018, Borg El Arab, March 11-13, 2018.
14. "Wire Arc Additive Manufacturing/Repair (WAAM/R) of a Prismatic Steel Part" International Conference on Materials Science and Engineering: ICMSE-RAC 2018, March 11-13, 2018 Borg El Arab.
15. "Multi-Channel Spiral Twist Extrusion (MCSTE) - A Novel Severe Plastic Deformation Method: A Numerical and Experimental Study", International Conference on Materials Science and Engineering: ICMSE-RAC 2018, March 11-13, 2018 Borg El Arab.
16. "Nanocomposites Mechanical and Tribological Properties Using Graphene-Coated-SiC Nanoparticles (GCSiCNP) for Light Weight Applications", TMS 2017, Proceedings of the 3rd Pan American Materials Congress, Part of the series The Minerals, Metals & Materials Series (Oral Presentation).

17. "Composite Powder Consolidation Using Selective Laser Melting: Input Energy/Porosity Morphology/Balling Effect Relation" TMS 2017 146th Annual Meeting & Exhibition. The Minerals, Metals & Materials Series, (Poster Presentation).
18. "Mechanically Alloyed Magnesium Based Nanostructured Alloy Powders for Biomedical Applications", Magnesium Technology 2017, The Minerals, Metals & Materials Series Feb. 28, 2017, (Oral presentation by graduae student).

Patents:

1. Elkhodary, K. I. E., Salem, H. A., M. A., Patent, "Shear Enhanced Rolling (SER)", AUC-114/PCT, Regular, United States. Lumen Ref. AUC-114/PCT/CN -- CN Appl. No.: 201680081298.0 -- ID:2316
2. Hanadi Salem and Asharaf Nassef, Patent "Wire Arc Additive Manufacturing/Repair of parts at a lower cost through Optimization of the Final Surface Finishing stage", Record ID: INV259032019- "IDF120032019", Provisional, United States.
3. Hanadi Salem and Waleed ElGaraihy, Patent, "Multi-Channel Spiral Twist Extrusion", AUC-124/PROV, May 1, 2017.

HONORS AND AWARDS:

1. First 4-year elected University Senate Chair in a row in the insitutional history of the AUC. Sep.2020-Aug. 2024.
2. Recipient of the Alumni Distinguished Faculty Service Award, 2023
3. Coordinator, 2030 National Roadmap corrdinator, Nanotechnology Applications in High Added Value Industries.
4. Academy of Science and Research Technology (ASRT) Cairoinnovate "Deepening of Industry" Award, 2019
5. AUC representative in the Egyptian National Nanotechnology Network
6. Lead Guest Editor of Journal of nanomaterials, Fall 2014
7. Awarded membership in the TMS Powder Materials Organizing Committee, 2014

PROFESSIONAL ACTIVITIES HIGHLIGHTS

Consultation:

1. Egypt's National Authority for Tunnels, Central Department for Tunnels Projects Consultancy, January 2022-present
2. NGE/TSO/ENR for Rail and sleepers Consultancy, 2022-present
3. Segwart Railway consultancy, July 1, 2022-present
4. El-Serag, Consultancy, FY22/23
5. KSA-TÜV SÜD Middle East LLC, Fatigue test for a Flash butt welded railway sections for the High-Speed Train at Saudi Arabia. 2017-Present
El Araby Group, Research & Development, July 2021.
6. MARS Service providing, August 2021
7. ORASCOM Construction Consortium, High-Speed Rail System, started FY20/21-present.
8. IMATHIA Construction, Consultancy, October 2020-Present.
9. IMATHIA Construction, Consultancy, October 2020.
10. Third Party "Failure Analysis of High-Pressure Gas Pipeline", Oil & Gas Sector Fall 2019/20.
11. ACROW MASR characterization, Fall 2018-present.

12. Egyptian Steel Group (ESG), partnership established fall 2016-Spring 2017.
13. ORASCOM CONSTRUCTION: Portsaid Tunnels Under Suez Canal Project, Materials testing Technical Report, March-April 2017.
14. Consultation partnership with SALCEF, High Speed Railway Manufacturers, and Fatigue testing for Butt welded Railway sections, agreement will be effective fall 2017.
15. Speed Railway Manufacturers, and Fatigue testing for Butt welded Railway sections, agreement will be effective fall 2017.

Conference and Workshop Organization: (since 2017)

1. Powder Materials Symposia organization, TMS/MS&T biannual International Meetings and Exhibitions 2016-present
2. Organized DigitalFuture International Workshop, “Robotic 3d Metal Printing for Innovative Designs & Applications”, June-23-July 3, 2022.
3. Symposium Organization “Powder Metallurgical Components in High Performance Applications”, Materials Science & Technology (MS&T) 2021 Annual Meeting and Exhibition, (2021) Columbus, Ohio, USA.
4. Organized DigitalFuture International Workshop, “Robotic 3d Metal Printing For Innovative Designs & Applications”, June-23-July 3, 2021.
5. Symposium Organization on “Additive Manufacturing for Industry”, 3rd ICMS-RAC, March 2020.

Capacity Building in AM:

1. *Organized DigitalFuture International Workshop, “Robotic Non-Planar 3D Printing, Clay-vs.-Metal”, June-22-July 2, 2022.*
2. *Symposium Organization “Powder Metallurgical Components in High Performance Applications”, Materials Science & Technology (MS&T) 2021 Annual Meeting and Exhibition, (2021) Columbus, Ohio, USA. “Robotic 3D Metal Printing for Innovative Designs and Applications” Workshop with hands-on experience offered to recent graduates First level, August 16-26 Aug 21. <http://www.amclauc.com/enmm040.html>*
3. *DigitalFuture Workshop, “Robotic 3d Metal Printing For Innovative Designs & Applications”, June-23-July 3, 202. <https://www.facebook.com/DigitalFUTURESworld/posts/344858273899543>.*
4. *Senior undergraduate elective course on “Additive Manufacturing Processes, Materials and Applications”, Department of Mechanical Engineering Program, AUC, Spring 2020 and Fall 2021.*

Reviewer:

1. National Awards reviewer and Panel evaluator, ASRT, Fall 2018-Present
2. ASRT-Egypt-Indian Joint Research Project in NT, 2016-present
3. Key reader for the Metallurgical and Materials Transactions A, September 2006-present.
4. A Reviewer of Science and Technology Development Fund (STDF) Projects, fall 2008-present.
5. A reviewer of Journal of Advanced Research, Fall 2019-present
6. A reviewer of the Composites A: Engineering; International Journal, 2016-present
7. A reviewer of the Metallurgical and Materials Transactions A, March 2005-present.
8. A reviewer of the Journal of Materials Science and Technology, fall 2005-present.
9. A reviewer of the Journal of Materials Engineering and Performance, May 2008-present.
10. A reviewer of the Composites B: Engineering; International Journal, August 2002-present
11. Lead Guest Editor for Special Issue in Journal of Nanomaterials Fall 2014
12. Editorial board member, international Journal of Applied Sciences, since July 2012-present
13. A Reviewer of Journal of Powder Technology, since fall 2011-present.
14. A Reviewer of US-Egypt Joint Projects (NSF), since fall 2008.

Scientific and Professional Societies:

1. Member, TMS Powder Materials Organizing Committee (PMC)
2. Member, Egyptian National Nanotechnology Network (ENNN)
3. Membership in the International Institute for Welding Engineering (IIWE)
4. Membership in the American Society for Mechanical Engineering (ASME).
5. Membership of the Materials Information Society (ASM International),
6. Membership of the Minerals, Metals, Materials Society (TMS).