Prof. Dr. Ali Dad Chandio

HEC approved PhD supervisor

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Summary

I am an esteemed HEC-approved PhD Supervisor and a seasoned professional in Materials and Metallurgical Engineering. With a wealth of experience as a consultant, failure analyst, and researcher, my expertise lies in engineering materials and metals, encompassing export/import intricacies and feasibility report assessments. Leading the Advanced Materials & Sustainable Environments Research Group at NED University of Engineering & Technology. I am dedicated to advancing knowledge and solutions in this field.

Education

Postdoc-2015 to 2016
PG Analysts
The University of Manchester
Manchester, United Kingdom

PhD-2015
Material Engineering
The University of Manchester
Manchester, United Kingdom

Master-2009
Material Engineering

NED University of Engineering and Technology
Karachi, Pakistan

Bachelor-2005
Material Engineering
Mehran University of Engineering and Technology
Jamshoro, Pakistan

Achievements

1. Launch of Master of Engineering in Metallurgical Engineering Program 2023-24
2. Launch of PhD Program in Materials Engineering Department 2017
3. Launch of PhD Program in Metallurgical Engineering Department 2021
4. Launch of Bachelor of Engineering Programs in Metallurgical Engineering & Materials Engineering 2005-06

Experience

- **Chairman-** January 2020 to date
  Department of Metallurgical Engineering, NEDUET
- **Acting Chairman**-January 08 - 14, 2023
  Department of Material Engineering, NEDUET
- **Professor**- January 2022 to date
  Department of Metallurgical Engineering, NEDUET
- **Program & Department Lead Auditor**-June 2020 to date
- **Consultant PMO,SBIP-** July 2018 to date
  Sindh Government.
- **Associate Professor**-July 2017 to date,
- **Acting Chairman**-June 2018 to July 2018
  Department of Metallurgical Engineering, NEDUET
- **Associate Professor**-July 2017 to date
  Department of Metallurgical Engineering, NEDUET
  Department of Material Engineering, NEDUET

- **Assisting Professor**-2010 to 2020.
  Department of Metallurgical Engineering, NEDUET
  Department of Material Engineering, NEDUET
- **PG Data Analyst-**2015
  Assisting in the Development of Labs in School of Materials
  The University of Manchester
- **Demonstrator/GTA**-2014,
  School of Materials
  The University of Manchester, UK
- **Lecturer**-2006 – 2010,
  Department of Metallurgical Engineering, NEDUET
  Department of Material Engineering, NEDUET
- **Trainee Engineer**-2006
  Bolan Castings Ltd, Pakistan
- **Service Engineer**-2005 TO 2006
  Chem Link International

Publications

1. Asif Hussain; Muhammad Khalid; **Ali Dad Chandio**; Muhammad Yasin; Nasir Abbas; Kiran Naz; Thamraa Alshahrani; Muhammad Younas, Dielectrically modified Nd3+ doped (Ni-Mn) based Spinel ferrite Ni0.5Mn0.5NdxFe2-xO4 nanoparticles for energy storage applications, Physica B: Condensed Matter, (accepted manuscript), 2023

2. Madeeha Sadia, Norhidayu Muhamad Zain, Nurizzati Mohd Daud, Faizuan Abdullah, **Ali Dad Chandio**, Iftikhar Ahmed Channa, Syed Ali Ammar Taqvi, Nik Ahmad Nizam Nik Malek, Syafiqah Saidin, **Electrospun Membrane Fabrication in Assisting Tissues Healing,** Journal of Human Centered Technology, July 2023

3. Irfan Ali Abro, and **Ali Dad Chandio**. 2023. "Analysis and Evolution on Diffusional Stability of Nickel Aluminide Bond Coat via Nickel Electro-Plating." European Physical Journal Plus 138(3). doi: 10.1140/epjp/s13360-023-03816-6.

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5. Imran Ali, Yasir Jamil, Saeed Ahmed Khan, Yunxiang Pan, Aqeel Ahmed Shah, **Ali Dad Chandio**, Sadaf Jamal Gilani, May Nasser Bin Jumah, Yusra Fazal, Jun Chen, and Zhonghua Shen. 2023. "Magnetic Hyperthermia and Antibacterial Response of CuCo2O4 Nanoparticles Synthesized through Laser Ablation of Bulk Alloy." Magnetochemistry 9(3):68. doi: 10.3390/magnetochemistry9030068.

6. Romaisa Iqbal, Malika Rani, Aqeel Ahmad Shah, Rabia Siddiqui, **Alidad Chandio,** Muhammad Nawaz Sharif, Waseem Abbas, and M. Ajmal Khan, Facile synthesis and characterization of Al-MOFs using benzene-1,3,5-tricarboxylic acid as a new class of materials for Far-UVC applications, Modern Physics Letters B, https://doi.org/10.1142/S0217984923502512

7. Jaweria Ambreen, Abdul Haleem, Aqeel Ahmed Shah, Fozia Mushtaq, Muhammad Siddiq, Muhammad Ali Bhatti, Syed Nizam Uddin Shah Bukhari, **Ali Dad Chandio**, Wael A. Mahdi, and Sultan Alshehri. 2023. "Facile Synthesis and Fabrication of NIPAM-Based Cryogels for Environmental Remediation." Gels 9(1). doi: 10.3390/gels9010064.

8. Ambreen Azmat, Shafaq Asrar, Iftikhar Ahmed Channa, Jaweria Ashfaq, Irfan Ali Chandio, **Ali Dad Chandio**, Muhammad Ali Shar, Mohamad S. AlSalhi, and Sandhanasamy Devanesan. 2023. "Comparative Study of Biocompatible Titanium

Alloys Containing Non-Toxic Elements for Orthopedic Implants." Crystals 13(3):467. doi: 10.3390/cryst13030467.

9. Hamna Shahid,[1],Aqeel Ahmed Shah [2],Syed Nizam Uddin Shah Bukhari [3],Anjum Zehra Naqvi [4], Iqra Arooj [1,*], Mehvish Javeed [1],Muhammad Aslam [5], **Ali Dad Chandio** [2],Muhammad Farooq [6], Sadaf Jamal Gilani [7] and **May Nasser Bin Jumah** [8,9,10] Synthesis, Characterization, and Biological Properties of Iron Oxide Nanoparticles Synthesized from *Apis mellifera* Honey, MDPI Molecules, 2023

10. Muhammad Ali Bhatti, Sadaf Jamal Gilani, Aqeel Ahmed Shah, Iftikhar Ahmed Channa, Khalida Faryal Almani, **Ali Dad Chandio**, Imran Ali Halepoto, Aneela Tahira, May Nasser Bin Jumah, and Zafar Hussain Ibupoto. 2022. "Effective Removal of Methylene Blue by Surface Alteration of TiO2 with Ficus Carica Leaf Extract under Visible Light." Nanomaterials 12(16):2766. doi: 10.3390/nano12162766.

11. **Ali Dad Chandio,** Iftikhar Ahmed Channa, Asif Ahmed Shaikh, Shabbir Madad, Syed Bilal, Hasan Rizvi, Aqeel Ahmed Shah, Jaweria Ashfaq, Muhammad Ali Shar, and Abdulaziz Alhazaa. 2023. Beneficiation of Low-Grade Dilband Iron Ore by Reduction Roasting, Metals MDPI, 1–16. 2023.
12. **Ali Dad Chandio**, Asif Ahmed Shaikh, and Haseeb Ahmed. 2022. "Isothermal Oxidation Studies of BNiAl Coatings for Aeroengine Applications." High Temperature 60(3):345–52. doi: 10.1134/S0018151X2203004X.

13. **Ali Dad Chandio**, Asif Ahmed Shaikh, Iftikhar Ahmed Channa, Muhammad Shahzad Bacha, Jahanzeb Bhatti, Muhammad Yasir Khan, and Shahid Bhutto. 2023. "Synthesis of Graphene Oxide (GO) by Modified Hummer's Method with Improved Oxidation through Ozone Treatment." Journal of the Chemical Society of Pakistan 45(1):1–7. doi: 10.52568/001190/JCSP/45.01.2023.

14. Abdul Karim Shah, Ghulam Taswar Shah, Aqeel Ahmed Shah, Yeung Ho Park, Ayaz Ali Shah, Mooseok Choi, Shoaib Ahmed, Syed Nizamuddin, Shah Bukhari, **Ali Dad Chandio**, Muhammad Atta Mahar, Muhammad Ali Shar, and Abdulaziz Alhazaa. 2023. "Design of Nickel Supported Hierarchical ZSM-5 / USY Zeolite."

15. Abdul Rauf Jamali, Asif Ahmed Shaikh, and **Ali Dad Chandio**. 2023. "Nano-Based Biodegradable Food Packaging of Vitis-Vinifera Synthesized by PVA/ZnO Nanocomposites." Physical Chemistry Research 11(2):449–58. doi: 10.22036/pcr.2022.341930.2104.

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and starch for the packaging applications, Polymers MDPI, 2022

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35. Jaweria Ashfaq, Iftikhar Ahmed Channa, Asif Ahmed Shaikh, **Ali Dad Chandio**, , Aqeel Ahmed shah, Bushra Bughio, Ashfaque Ahmed Birhmani, Syed Sarim Imam, Sultan A Alshehri, Mohammed Ghoneim, Gelatin and papaya based biodegradable and edible packaging films to counter plastic waste generation, Materials, 2022.

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38. Azmat A, Tufail M, **Chandio AD**. Synthesis and Characterization of Ti-Sn Alloy for Orthopedic Application. *Materials*. 2021; 14(24):7660. https://doi.org/10.3390/ma14247660

39. I. A. Channa, A. A. Shah, M. Rizwan, M. A. Makhdoom, **A. D. Chandio**, M. A. Shar, et al. Process Parameter Optimization of a Polymer Derived Ceramic Coatings for Producing Ultra-High Gas Barrier, Materials 2021 Vol. 14 Issue 22 Pages 7000.

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41. **Ali Dad Chandio**†, Nafisul Haque, and Asif Ahmed Shaikh, Interdiffusion Studies of βNiAl Bond Coats: Understanding the Zr, Pt, and Al Migration Trends and Their Beneficial Effects, Korean Journal of Advanced Materials, Vol 31, No. 8 (2021)

42. Muhammad Samiuddin, Li Jinglong, Ali Dad Chandio, Muammad Muzamil, Sumair Uddin Siddiqui and Xiong Jiangtao Diffusion welding of CoCrNi Medium Entropy Alloy (MEA) and SUS 304 stainless steel at different bonding

temperatures, welding in the World, July 2021

43. Iftikhar Ahmed Channa, **Ali Dad Chandio**, Muhammad Rizwan, Aqeel Ahmed Shah, Jahanzeb Bhatti, Abdul karim Shah, Fayaz Hussain, Muhammad Ali Shar and Abdul Aziz AlHaza, Solution Processed PVB/Mica Flake Coatings for the Encapsulation of Organic Solar Cells, Materials May 2021.

44. **Ali Dad Chandio**, Iftikhar Ahmed Channa, Muhammad Sufyaqn Javed, Muhammad Saleem, Sajid Hussain Siyal, Polynivyal Alcohol and Nanoclay based solution processed packaging coatings, Coatings July 2021

45. Aqsa Khan [A], Ghazna Hassan Khan [A], Eraj Humayun Mirza[a*], **Alidad Chandio** [B], Maliha Mohsin [A], Mahnoor Hassan [A], Manal Naushad [A] And Ali Raza Jafri , Development and Characterization of Acrylic Based Bone Cements, Journal of Biomaterials and Tissue Engineering **2022.**

46. Warda Rehman, Summyia Masood, Samreen Begum, **Ali Dad Chandio**, Sameera Razi Khan, Lubna Gulnar, Rozina Khattak, Muhammad Sufaid Khan, Viscometric and FTIR studies of chloroquine phosphate, acefylline piperazine and gentamicin sulfate in aqueous-polyethylene glycol and aqueous-polyvinyl pyrrolidone at different temperatures, Arabian Journal of Chemistry, Volume 14, Issue 8, 2021,

47. Iftikhar Ahmed Channa, **Ali Dad Chandio**, Muhammad Rizwan, Aqeel Ahmed Shah, Jahanzeb Bhatti, Abdul Karim Shah, Abdulalziz Al Hazaa, Muhammad Ali Shar, Fayaz Hussain, Solution coated PVB/mica flake coatings for the encapsulation of organic solar cells, Materials, 2021.

48. Shafaq Asrar, Muhammad Tufail and **Chandio AD**, Facile coating of HAP on Ti6Al4V for Osseointegration", Engineering, Technology & Applied Science Research 2021.

49. **A. D. Chandio**, M. N. Alghamdi *, S. H. Abro, H. Moria*, Measurement of mechanical properties of nickel thin film over steel substrate through simulation of Nano Indentation Technique, *Sindh Univ. Res. Jour. (Sci. Ser.) Vol. 53 (01) 99-104 (2021)*

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57. Muhammad Ali bhatti,[a] Aneela Tahira[d], **Ali Dad Chandio[c]**, Khalida Faryal Almani[a], Adeel Liaquat Bhatti[e], Baradi Waryani[g], Ayman Nafady[f], Zafar Hussain Ibupoto[b,] Enzymes and phytochemicals from neem extract robustly tuned the photocatalytic activity of ZnO for the degradation of malachite green (MG) in aqueous media, *Res Chem Intermed* (2021). https://doi.org/10.1007/s11164-020-04391-6

58. **A.D. Chandio,** Residual Stress Study of Nickel Aluminide (βNiAl) Coatings Deposited by *In Situ* Chemical Vapour Deposition Method, Key Engineering Materials Vol. 875, February 2021.

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84. MS Hanif, **A.D. Chandio** High-Temperature Effectiveness of Ginger Extract as Green Inhibitor,for Corrosion in Mild Steel, NUST Journal of Engineering Sciences (NJES) **(accepted manuscript)**

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86. Kashif Abro, **Ali Dad Chandio,** Ilyas Khan and Irfan Abro**,** Dual Thermal Analysis of Magnetohydrodynamic Flow of Nanofluids Via Modern Approaches of Caputo-Fabrizio and Atanagana-Baleanu Fractional Derivatives Embedded in Porous Medium
Journal of Thermal Analysis and Calorimetry

87. Muhammad Yasir Khan, **Ali Dad Chandio,** Muhammad Sohail, Muhammad Arsalan, Muhammad Wasim Akhtar, SYED Zeeshan Abbas and ZEESHAN Akhtar, Low Temperature Synthesis of Anatase TiO_2 Nanoparticles and its Application in Nanocrystalline Thin Films, Journal of Key Engineering Materials, Trans Tech Publications, Switzerland Vol. 778, pp 86-90, 2018.

88. **Ali Dad Chandio,** Nabeel A. Khan, Rameez Jawaid and S. Naqi Mohsin "Failure Study of Two Dissimilar Steels Joined by Spot Welding Technique" Journal of Key Engineering Materials, Trans Tech Publications, Switzerland Vol. 778, pp 262-267, 2018.

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96. Abdul Rauf Jamali, **Ali Dad Chandio,** Waseem Khan, Zubia Anwer and Imtiaz Ali Soomro, Plasmonic Effect of Gold Nanoparticles Surrounded by Multidielectric Matrix, Mehran University Research Journal of Engineering & Technology, Vol 36, issue 3, 2017.

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Leadership

- Keynote Speech on "Superalloys and Thermal Barrier Coatings; Aggressive Environments in Aeroengine" October 2023, ISAM 2023, Islamabad.
- Keynote Speech on "Surface Engineering of Aeroengine Turbine Blades; Environmental Aspects" in 2nd International Conference on Global Challenges in Energy and Environment Development-2023 (ICGCEED-2023), The Women University of Multan, March 3, 2023 – Online
- Keynote Speech on "Carbon Steels in Barrages; Assessment of Structure & Properties", Minex 2022, September 20, 2022, Iran – Online
- Member Think Tank for Revival of Pakistan Steel Mills – Oxygen plant 2021.
- Keynote Speech in 10th iMat 2021 conference, Iran, November 16-17, 2021
- Keynote Speech in International Symposium on Advance Materials 2021 – TBC (October 2021)
- Keynote Speech in 1st International Conference on Advanced Materials and Emerging Technologies (ISAMET 2021), Jamshoro, Pakistan (July 27 – 28, 2021)
- Co-Convenor, 1st International Conference on Advances in Material Science and Environmental Engineering (ICAMSEE - 2021), June 25 – 26, 2021 at NED UET, Karachi, Pakistan.
- Keynote Speech in 9th iMat 2020 conference, Iran, November 10-11, 2020
- Keynote Speech in International Symposium on Advance Materials 2019 – TBC: residual stresses.
- Keynote Speech in iMat 2019, Mosalla, Tehran Iran on Thermal barrier coatings.
- Keynote Speech in "1st International Conference Sustainable Mineral Resources Development & Utilization (SMRDU'19)" title as Strategies to Iron Ore Beneficiation: Revival of Steel Sector of Pakistan, PCSIR Karachi Feb 2019
- Invited Speech in International Symposium on Advanced Metallurgy and Materials 2018, PIEAS Islamabad – TBC (October 16 – 18 2018)
- Invited Speech in International Symposium on Advanced Metallurgy and Materials 2017, PIEAS Islamabad – TBC (October 28 – 31 2017)
- Invited Speech in International Symposium on Advance Materials 2017 – TBC (September 2018)

Patents

- Improved Extraction Process of Sugarcane Wax from Bagasse Collected from Sugar Mills of Sindh Province of Pakistan 2023
- CO2 Capture, Sequestration and Utilization 2023

Editor/Reviewer / Member

- Member Editorial Board, Journal of Hendese Technical Sciences and Engineering, Muş Alparslan Üniversitesi, Turkey 2023 to date
- The Journal of The Minerals, Metals & Materials Society (TMS) 2023 to date
- Member Editorial Board, Iranian Journal of Materials Science and Engineering 2023 to date
- MDPI - Molecules – Reviewer 2022 to date
- MDPI - Membranes – Reviewer 2022 to date
- MDPI - Food – Reviewer 2022 to date
- MDPI - Materials – Reviewer 2020 to date
- Frontiers in Materials – Review Editor 2020 to date
- Surface Coating Technology – Reviewer
- Key Engineering Materials – Reviewer

- Mehran University Research Journal – Reviewer
- NUST Journal – Reviewer
- Engineering, Technology and Applied Science – Reviewer
- SURJ – Reviewer

Consultancy / Investigations / Cases

- Failure Investigations of various Engineering components (>50 cases)
- Revival of Pakistan Steel Mills – Oxygen plant 2021.
- General Consultant on Engineering Materials – case to case basis (Karachi)
- Consultant on Sindh Barrages Rehabilitation Project, PMO, Government of Sindh – on going.
- Expert / Consultant, Home Ministry for Strategic Materials, Government of Sindh 2017 to 2018
- Failure Investigations of Aircraft Engines – Pakistan Airforce – case to case basis (>50 cases)

Memberships/Committees

- Local Councillor for Chemical & Allied Disciplines – Institute of Engineers of Pakistan 2023 – 2025.
- Member Institute of Engineers of Pakistan since 2020
- Member, International Association of Engineers (IaEngg)
- Convenor BOS, Department of Metallurgical Engineering, NED University (2019 to date)
- Member BOR, DWS, BOR ORIC, BOF-CPE, Academic Council, NED University (2020 to date)
- Member Procurement Committee Dawood University, Karachi (2020 to date)
- Member Senate, NED University of Engineering & Technology, Karachi, Sindh, Pakistan (June 2019 to date)
- Member Technical Evaluation Committee Home Office, Government of Sindh for Chief Minster Secretariat (2017 to 2018)
- Member Technical Evaluation Committee for MYD and MMD, NED University, Karachi
- Member Technical Evaluation Committee for Metallurgy and Materials Engineering Department, MUET, Jamshoro, Sindh, Pakistan
- Expert Member, BOS, Metallurgy and Materials Engineering Department, MUET, Jamshoro, Sindh, Pakistan
- PhD Proposal Reviewer, Metallurgy and Materials Engineering Department, MUET, Jamshoro, Sindh, Pakistan
- Member PSQCA on various standards related to Materials and Metallurgical Engineering which includes, Material Testing, Welding and Material Selection
- Member National Curriculum committee (NCRC) of "Materials and Metallurgical Engineering", HEC Islamabad, Pakistan
- Member Engineering Practice Examination (EPE), Pakistan Engineering Council,
- Others (American Ceramic Society, ASM, USA)
- Member for Assessment Teams (AT) for both M. Engg. and Ph.D, NED University

Projects / Research Activities

- Ti-Sn based implants for orthopaedic and dental applications
- Materials for Skin Burns
- Hydrogen Production through water splitting – renewable energy applications
- Design and Development of Dental Implants – HEC Funding (Rs. 5.4 million)

- Failure Investigation of Aircrafts, Sub-marines, power plants etc. – case to case basis
- Beneficiation of Dilband Iron Ore – until 2018. (Rs. 2.8 million)
- Synthesis and Characterisations of Nanomaterials
- Dental composites and Implants
- X-ray doses
- High Temperature Materials
- Corrosion Science and Engineering
- Battery Materials
- X-rays for Medical Applications
- Reverse Engineering of Castings to be used in Automotive Applications
- Biomaterials – Pakistan Perspective

Awards

- Best Published Researcher Award 2022, NED Alumni Association of Southern California, USA
- Best Published Researcher Award 2021, NED Alumni Association of Southern California, USA
- Best Teacher Researcher Award 2020, NED Alumni Association of Southern California, USA
- Best Teacher Award 2019, NED Alumni Association of Southern California, USA
- Best Teacher Researcher Award 2019, NED Alumni Association of Southern California, USA
- Best Teacher Researcher Award 2018, NED Alumni Association of Southern California, USA
- Nominated for Speaker Award, Beatle, (USA) (2015)
- Manchester Postgraduate Award (UK) (2011 – 2014)
- Quaid e Azam Scholarship during undergraduate studies (2003 to 2005)

Teaching Interests

- Materials Science & Engineering
- Advanced Materials
- Advanced Materials Characterisation Techniques
- Corrosion Science and Engineering
- High Temperature Materials and Superalloys
- Surface Engineering of Materials
- Biomaterials
- Heat Treatment of Materials
- Nanotechnology
- Phase Transformations

PhD/MS Thesis Viva Voce / Examiner

- PhD Thesis Title: Synthesis and Characterization of Multiferroic-Ceramics for Energy Applications. Student: Engr. Sajida Sheikh and Supervisor: Prof. Dr. Fayaz Hussain, Department of Materials Engineering, NED University May 11, 2023.
- MS Thesis Title: Synthesis of Amino Acid-Assisted Iron Oxide (Fe3O4) Nanostructures for Low-density Lipoprotein (LDL) Cholesterol Removal by Nisar Brohi and Supervised by Prof. Dr. Ishaq Abro, Department of Metallurgy & Materials Engineering, MUET, Jamshoro, Sindh, Pakistan
- MS Thesis Title: Green Synthesis of Alumina Doped Cobalt Oxide Nanostructures for Water Oxidation Application by Rehan Ali Qureshi and Supervised by Prof. Dr. Ishaq

Abro, Department of Metallurgy & Materials Engineering, MUET, Jamshoro, Sindh, Pakistan
- More than 15 others

Countries Visited

UK, Switzerland, Austria, UAE, Malaysia, Spain, China, Italy, Germany, USA, France, Belgium, Netherlands, Iran, Turkey, Norway, Vatican City, Thailand etc.

References

- Dr. Mingwein Bai, Assistant Professor, , University of Leeds, UK, m.bai2@leeds.ac.uk
- Prof. Dr. Fayaz Hussain, Department of Materials Engineering, NED University of Engineering & Technology, Karachi 75270, Sindh, Pakistan , fhussain@neduet.edu.pk
- Prof. Dr. Shahid Hussain, Department of Materials Science & Engineering, Jiangsu University, China, shahid@ujs.edu.cn
- Dr. Fan Yang, Associate Professor, Institute of Fuel Cells, School of Mechanical Engineering, Shanghai Jiao Tong University, 800 Dongchuan Road, Shanghai, 200240, fanyang_0123@sjtu.edu.cn