PROFILE

I am a Biomedical Engineer by profession and completed BSc in Biomedical engineering from University of Engineering & Technology (UET) Taxila Pakistan. I completed my MSc in Biomedical Engineering from Brunel University. As part of my MSc academic program, I completed a research project entitled "Appraisal of the efficacy and effectiveness of Auxetic structures configured as endovascular implant relevant to the palliative treatment of esophageal cancer".

After completing my MSc, I worked as a Project Director at National Engineering & Scientific Commission (NESCOM) Pakistan, and setup a dedicated coronary stent manufacturing unit for coronary heart disease application which entailed design, manufacturing, mechanical testing (in vitro pulsatile fatigue testing and in vivo animal study), standardization of the production unit and CE Marking. The developed coronary stent named as "SAVIOR" is currently in the stage of being marketed

PROF. DR. MURTAZA NAJABAT ALI *(CENG (UK) FIMecHE) P.E.)*

Professor Biomedical Engineering Dept. Riphah International University
Founding CEO at Revive Medical Technologies Inc.
DISTINGUISHED SCHOLAR at COMSTECH

EDUCATION

PhD in Material Sciences
Sept 2009 – Sept 2012
University of Sheffield, Sheffield, UK

Master's in Biomedical Engineering
Sep 2005 – Sep 2006
Brunel University, West London, UK

Bachelor's in Biomedical Engineering
Aug 1999- Dec 2004
University of Engineering & Technology (UET), Pakistan

WORK EXPERIENCE

Founding CEO
2023 – To date
REVIVE MEDICAL TECHNOLOGIES Inc. USA

Professor
2024 – To date
Biomedical Engineering Dept.
Riphah International University
Islamabad, Pakistan

Distinguished Scholar
2023 – To date
COMSTECH Headquarter
Islamabad, Pakistan

Founding CEO
2020 – 2023
N-ovative Health Technologies (NHT a state-owned Enterprise and a subsidiary of NUST University, Pakistan

within Pakistan. After fulfilling the responsibility which was given by the Government of Pakistan (GoP) of developing and launching the coronary stent into the market, I realized that now I should enhance my qualifications and research skills. Therefore, I started my PhD at School of Engineering and Material Science Queen Mary University of London entitled "Development of Auxetic Polymeric Stent-graft for the palliative Treatment of Esophageal Cancer". After one year, I joined Department of Material Science and Engineering Kroto Research Institute University of Sheffield, as my supervisor (Dr. Ihtesham ur Rehman) shifted to Kroto Research Institute University of Sheffield.

Following my PhD, I worked for Kroto Research Institute University of Sheffield in the position of Post-Doctorate Research Assistant for the pilot project which was funded by the Research and Innovation Department University of Sheffield. My job responsibilities in this project involve 3D CAD designing, fabrication of the medical device by both conventional subtractive and new additive manufacturing techniques, mechanical characterization of the medical device and finite element analysis. While working on the design and development of the medical prostheses, I have also gained extensive knowledge about their validation, standardization and protection of intellectual property rights.

My credentials and qualifications have also been

Founding Director
2017 – 2023
Medical Devices Development Center (MDDC) NUST University, Pakistan

Professor
July 2013 – 2023
Biomedical Engineering & Sciences Dept. SMME, NUST Pakistan

Founding CEO
2014 – 2016
Kounter Intuitive Technologies (KIT)

Head of Department (HOD)
Dec 2012 – June 2013
Biomedical Engineering & Sciences Dept. SMME, NUST Pakistan

Post-Doctoral Research Assistant (PDRA)
Feb 2012 – Dec 2012
Kroto Research Institute University of Sheffield, UK

Project Director
2007 – 2009
National Engineering & Scientific Commission NESCOM, Pakistan

Biomedical Engineer
2004 – 2005
HP*plus* Pvt. Ltd. Islamabad Pakistan

Internee
2003-2004
Shaukat Khanum Memorial Cancer Hospital

TEACHING EXPERIENCE

- More than 12 years teaching experience and the following courses were taught in Undergraduate, Masters and PhD levels,

- Advanced Biomaterials
- Advances in Biomaterials
- Biomechanics
- Biofluid Mechanics
- Anatomy and Physiology
- Bioinstrumentation
- Medical Implants and devices

RESEARCH PROJECTS SUPERVISED

- Supervised **50** research project as a Masters thesis
- Supervised **05** PhD projects

approved by the Academic Review Committee at Institute of Mechanical Engineers (IMeche) United Kingdom, for the status of Chartered Engineer (CEng) and in 2012 I was designated as Chartered Engineer (CEng) from UK Engineering Council and became member of IMechE. Recently, I have been elected Fellow of IMechE and I have also been qualified as Professional Engineer from Pakistan Engineering Council (PEC) and Higher Education Commission (HEC) approved supervisor in 2013.

In 2017, Government of Pakistan (GoP) funded me a project under the special directives of Prime Minister Office of Pakistan for the development of purpose-built Medical Devices Development Center (MDDC) as a National Center of Excellence for the indigenous production of Bare-metal cardiac stents, Drug Eluting Stents, Angioplasty Balloon Catheters and artificial heart valves etc. According to the Federal Government decision MDDC project was completed on June 2020 and a Special Purpose Vehicle i.e. N-ovative Health Technologies (NHT) Pvt. Ltd. has been recently established as a Public Sector Company with Securities Exchange and Commission of Pakistan (SECP). The state of art, NHT Pvt. Ltd. facility is now ISO 13485:2016 Certified from European Commission Notified Body and recently Manufacturing License was also acquired from Drug Regulatory Authority of Pakistan (DRAP). In 2016, Government of Pakistan also awarded me a National Development award based on my outstanding contribution in

OTHER WORK EXPERIENCE

Tutor/ Lab Demonstrator
2009-2010
School of Engineering and Material Science
Queen Mary University of London, UK

Involved in taking Tutorials and laboratory demonstrations for undergraduate students at the School of Engineering & and Material Sciences for Engineering subjects like Mathematics, Fluid Mechanics, Thermodynamics, MATLAB, Biomechanics and Design and Innovation.

Tutor/ Lab Demonstrator
2010-2012
Department of Material Science and Engineering
University of Sheffield

Involved in taking tutorials and laboratory demonstrations for undergraduate students at the Department of Engineering & and Material Sciences for Engineering subjects.

AWARDS

- Awarded **Best Researcher in 2016** of the NUST University
- **1st Best Business Plan Prize** won at USAID Science and Technology Workshop
- **National Development Award** as Emerging Entrepreneur in 2016 from Government of Pakistan
- Awarded **Gold Medal** for the excellent paper presentation in the International Conference on recent advances in medical science (ICRAMS) in 2018 at Krakow Poland
- **Professional Achievement Award** by British Council in 2020
- Pakistan Engineering Council **(PEC) Excellence Award** conferred by the President of Pakistan in 2024

MEMBERSHIP WITH BODIES

- Member of Institution of Mechanical Engineers (IMechE)
- Chartered Engineer (CEng) from UK Engineering Council
- A Reviewer of two scientific journals: Journal of Materials Research (JMR) and Journal of Materials Science
- Designated as HEC Approved Supervisor
- Exper Member in Technical Advisory Committee at Drug Regulatory Authority Pakistan (DRAP)

the Emerging Science based on high impact factor of my research and development projects. I also worked as Managing Director at "KOUNTER INTUITIVE TECHNOLOGIES" I founded in 2014 where we developed different medical technologies, devices and equipment for the Neonatal Intensive Care Unit (NICU) along with technical services to the medical device industry in terms of Clinical Evaluation Reports, Technical report/Design Dossier and Biological Evaluation Reports.

Current Status

I am an Associate Professor in Biomedical Engineering & Sciences department at NUST Pakistan. I am also working as the Director MDDC since December 2016 where along with academic career pursuits I am also heading NHT as CEO and responsible for all the activities involved in this center.

Technology Transfer of worth Rs. 1.3 million

Total financial grant secured: Rs. 956.579 million

- Member of Association of Physicians of Pakistani Descent of North America (APPNA)
- Designated as Professional Engineer (P.E) from Pakistan Engineering Council
- Elected as a Fellow of Institution of Mechanical Engineers (IMechE)

TECHNICAL SKILLS

Languages
C, C++, MATLAB

Engineering Design Tools
Autodesk AUTOCAD Mechanical software, Autodesk INVENTOR Software, SOLIDWORKS, ABAQUS (FEA Package), ANSYS

Manufacturing Skills
CNC guided Laser cutting, laser-etching, laser engraving, Mechanical Engraving/ Milling, Fused Deposition Modelling (Rapid Prototyping), Vacuum Casting process (Rapid Prototyping), Electron Beam Melting (Rapid prototyping), 3D Inkjet Printing of Solid prototypes (Rapid prototyping), Electroless Nickel coating process, Die-Casting process, Spin Coating process.

Technological Skills
Finite Element Analysis (Solid Mechanics), Electro-chemical Polishing, Annealing with vacuum furnace, Scanning Electron Microscopy (SEM), Tensile Testing, Dynamic Mechanical Analysis, FTIR Spectroscopy, RAMAN Spectroscopy, optical microscopy, X-ray Diffraction (XRD).

REGULATORY/LICENSING EXPERIENCE

Regulatory/licensing services were provided to different industries, including the following:

CLINICAL EVALUATION REPORT (CER)

UNIMED KSA
Sterile, Single Use, Synthetic, Partially Absorbable & Non-Absorbable HERNIA MESH; Single Use, Metallic / Synthetic Non-Absorbable, Surgical Sutures & Ligatures; Sterile, Single Use, UNICOT Cotton Umblical Tape; Absorbable Suture PGA; Suture Polyethylene Terephthalate (polyester); UNICOT (Suture of Surgical Grade Cotton); UNISTEEL (Steel) Pacemaker; Polyester Hernia Mesh; PTFE Buttresses/Pledgets; UNISILK (Silk used for Suture; UNIMIDE SUTURE (polyamide)

Heinz Schade GmbH, Germany
(Cobalt-Chromium MP35NLT) STENT SYSTEM

(Polyamide/PEBAX/Silicone) PTCA Balloon Catheter

Weldon Surgicals, Sialkot Pakistan
Non-Sterile, Single Use, Surgical Scissors
Non-Sterile, Single Use, Haemostat Forcep
Non-Sterile, Single Use, Dissecting & Tissue Forceps (Tweezers)

BIOLOGICAL EVALUATION REPORT (BER)
Polyglycaprone 25 FLEXPRO® Hernia Mesh; Polypropylene used to manufacture Polypropylene Hernia Mesh; Polyester used to manufacture Polypropylene Hernia Mesh; Stainless Steel used to manufacture UNISTEEL® Surgical Sutures & Ligatures; Linen Ivory used to manufacture UNILIN® Surgical Sutures & Ligatures; Cotton used to manufacture UNICOT® Cotton Umbilical Tape; PTFE; Polyamide; PEBAX; Silicone; Cobalt-Chromium (MP35 NLT); Stainless Steel (316L)

TECHNOLOGY TRANSFER

- Technology Transferred/Licensed to Pharmatec Group of Industries karachi, '***Smart Wound Management System for controlled drug delivery and pH monitoring',*** Pharmatec Group of Industries signed a technology transfer agreement of worth **Rs. 2.3 million**
- Technology Transferred/Licensed to Shifa International Hospital, '***Fascia Closure (Suturing) Device for abdominal surgery,*** Shifa International Hospital signed a technology transfer agreement of worth **Rs. 1.5 million**
- Technology Transferred/Licensed to Dr. Frigz International Surgical Instrument Industry, '***Surgical Instrument Counting Dip Coating and Counting Machine,*** Dr. Frigz International signed a technology transfer agreement of worth **Rs. 3.0 million**

FINANCIAL GRANTS

- **Rs. 33 million** Awarded from Ministry of Science and Technology for the Industrial setup of Angioplasty Balloon Catheters
- **Rs. 1.0 million** awarded from HEC for the research project entitled "*Smart Oesophageal Stent for the treatment of Oesophageal Cancer*"
- **Rs. 0.8 million** awarded from Shifa International Hospital for the development of fascia closure (suturing) device
- **Rs. 2.0 million** awarded from HEC for the research project entitled "Cost-effective and novel *Coronary Stent device for the treatment of coronary heart diseases in Pakistan*"

Granted Patents: 2
Filed Patents: 20

- **Rs. 2.0 million** awarded from Pakistan Science Foundation for the research project entitled "Development and commercialization of intelligent functional stent for the treatment of Lung Cancer *in Pakistan*
- Complete Coronary Stent manufacturing setup of worth **Rs. 60 million** is awarded and handed over to me at MDDC NUST and I have been designed as Project Director.
- **Rs. 331 million** Awarded from Ministry of Science and Technology for the establishment of purpose-built ***Medical Devices Development Center (MDDC)***
- **Rs. 8.096 million** awarded from National ICT R&D (IGNITE) for the research project entitled "Smart coronary stent endo-prosthesis for real-time monitoring
- **USD 7000** awarded from UNESCO (TWAS) for the research project entitled **"***Biodegradable drug eluting stent-grafts***"**
- **Rs 14.242 million** granted for the project titled '*Up-scaling and Production of Ventilator'* by Pakistan Science Foundation
- **Rs 16.743 million** is funded for the project titled *'Development and Indigenous Production of Diagnostic/Angiographic Catheter in Pakistan'* by Pakistan Science Foundation
- **Rs. 700 million** presented by Ministry of Science and Technology for the establishment of *Electromedical production facility* at MDDC-NUST
- **Rs. 3.0 million** awarded from APPNA MERIT member for the *research and development of Intracranial stent system*
- **Rs. 7.4 million** granted from PSF for the *design and development of Powered Air purifying Respirator (PAPR) prototype*
- **Rs. 1.75 million** approved for grant by PSF for the development of biodegradable sutures for surgical incisions and wound
- **Rs. 79 million** approved from Korea Invention Promotion Association (KIPA) for Design and Prototype Development of a Novel Oxygen Concentrator controlled by the Real-Time Physiological Oxygen Saturation Level Feedback

PATENTS

Granted Patents

- Murtaza Najabat Ali, Faisal Amin, Anisotropic Stent Device for the Treatment of Coronary Heart Disease 26/2014

- Murtaza Najabat Ali, Zainab Munib, Counter-intuitive Auxetic Intramedullary Bone Stent and Method for Treating Long Bone Fracture 77/2014

Filed Patents

- Murtaza Najabat Ali (2013), "*Auxetic Structures and Their Applications in Non-Vascular Pathologies",* 104/2013
- Murtaza Najabat Ali, Mariam Mir (2014), "*Intelligent Bandage with Drug Dispensation and Adjustable Porosity System for Topical Wounds",* 291/2014
- Murtaza Najabat Ali, Umar Ansari, Seemab Mehmood,(2014), "*A Novel Skeletal Plate Fixation System For Tubular And Flat Bones Fractures",* 396/2014
- Mariam Mir, Murtaza Najabat Ali (2014), "*A Multifunctional Device That Promotes Wound Healing Through Drug Delivery and Exudate Removal*", 711/2014
- Murtaza Najabat Ali, Tehreem Jamil, "*Ligament Augmentation Stent Technology for Augmenting Anterior Cruciate Ligament Healing Through Primary Repair",*
- Murtaza Najabat Ali, Umar Ansari, Hafsah Akhtar, Faiza Bukhari, "*A New Stent with Novel Auxetic Structural Configurations",455/2015*
- *Murtaza Najabat Ali, M. Kashan Siddiqui, "Industrial Automation Solution for Quality Testing of Suturing Needle Holder",* 428/2017
- Murtaza Najabat Ali, Mariam Mir, "Smart Wound Management System for Controlled Drug Delivery and PH Monitoring".681/2018
- Murtaza Najabat Ali, Faiza Bukhari, Hafsah Akhtar (2018), "A Novel Deployment Device for Stents having Negative Poisson's Ratio", 690/2018
- Murtaza Najabat Ali, "Catheter Trackability Testing Machine" 36/2021
- Murtaza Najabat Ali, "Stent Drug Coating Machine" 37/2021
- Murtaza Najabat Ali (2020), "Ventilator Device for ICU and Non-ICU Based Applications" 533/2020
- Murtaza Najabat Ali (2020), "Powered Air Purifying Respirator (PAPR) Device" 99/2021
- Murtaza Najabat Ali, Hafsa Inam (2020), "A Novel Hybrid Braid Configuration for Cardiovascular Applications, 2/2020
- Murtaza Najabat Ali (2020), "In Vitro Investigation and Evaluation of Novel Drug based on Polyherbal Extract against Type 2 Diabetes", 5/2021
- Murtaza Najabat Ali (2021), "Smart Stent – A Real Time Piezoresistive-Based Displacement Monitoring Concept", 856/2020

Total International research and review articles published: 40

- Murtaza Najabat Ali, Zunaira Qureshi (2021), "A Polyherbal Based Pharmaceutical Formulation Comprising of Anti-Hyperglycemic and Antioxidant Properties" 175/2021
- Murtaza Najabat Ali, Bakhtawar Ghafoor, "Drug Eluting System with Smart Polymer for Tunable Drug Release" 504/2021
- Hafsa Inam, Murtaza Najabat Ali (2021), "A Novel Design of Universal Laser Cut Flexible Reinforced Tube for Coronary Catheters"
- Murtaza Najabat Ali, Hafsa Inam (2021), "A Portable Thermoforming Machine for Distal Shaping of Cardiovascular Catheter"

JOURNAL PUBLICATIONS

- Murtaza Najabat Ali, Ihtesham U Rehman, (2011), "*An Auxetic structure configured as oesophageal stent with potential to be used for palliative treatment of oesophageal cancer; development and in vitro mechanical analysis*", Journal of Materials Science: Materials in Medicine; Vol. 22 Issue 11, p2573
- Faisal Amin, Murtaza Najabat Ali, Muhammad Asim Minhas (2013), "*An Evolutionary Appraisal of the Efficacy of Coronary Artery Stents relevant to the Treatment of Coronary Heart Diseases*", International Journal of Biomedical and Advance Research, Vol.4 Issue 11
- M.N.Ali, James J.C. Busfield, Ihtesham U. Rehman (2013), "*Auxetic oesophageal stents: structure and mechanical properties, Journal of Material Science: Materials in Medicine*, Volume 25, Issue 2, pp 527-553.
- M.N.Ali, Faisal Amin (2014), "*Smart stent: A new concept for the treatment of central airway obstructions*", NUST Journal of Engineering Sciences, Vol. 5 No.1, pp. 27-34
- Seemab Mehmood, Umar Ansari, Murtaza Najabat Ali (2014), "Internal fixation: An evolutionary appraisal of methods used for long bone fractures", International Journal of Biomedical and Advance Research, Vol. 5 issue 3.
- Zainab Munib, Umar Ansari, Murtaza Najabat Ali, (2014),"A *paradigm shift of the conventional intramedullary devices to new biological osteosynthetic devices: Bone stents* ", International Journal of Biomedical and Research, Vol.5 Issue 3.
- Rabeil Sakina, Murtaza Najabat Ali (2014), "*An appraisal of the efficacy and effectiveness of nanoscaffolds developed by different techniques for tissue engineering and orthopedic applications: Electrospinning A Paradigm shift*", Advances in Polymer Technology.
- Faisal Amin, Murtaza Najabat Ali, Umar Ansari, Mariam Mir, Muhammad Asim Minhas and Wakeel Shahid,

(2014),"*Auxetic Coronary Stent Endoprosthesis: Fabrication and Structural Analysis",* Journal of Applied Biomaterials & Functional Materials

- Murtaza Najabat Ali, Ihtesham U. Rehman (2014),"*Auxetic polyurethane stents and stent-grafts for the palliative treatment of squamous cell carcinomas of the proximal and mid oesophagus: A NOVEL FABRICATION ROUTE*", Journal of Manufacturing Systems
- Murtaza Najabat Ali, Faisal Amin, Mariam Mir, Umar Ansari (2014), "*Emerging Approach for Treating Complications Associated with Pertrochanteric Fractures: A Review*", Minerva Ortopedica E Traumatologica, 66 (2)
- Mariam Mir, Murtaza Najabat Ali, Umar Ansari, Javaria Sami, , (2014), "*Review of Mechanics and Applications of Auxetic Structures*" Advances in Materials Science and Engineering
- Munneza Ata Khan, Umar Ansari, Murtaza Najabat Ali, (2015), "*Real-time wound management through integrated pH sensors: A Review*", Sensor Review.
- Zainab Munib, Murtaza Najabat Ali, Umar Ansari, Mariam Mir (2015), "*Auxetic Polymeric Bone Stent for Tubular Fractures: DESIGN, FABRICATION AND STRUCTURAL ANALYSIS*", Polymer-Plastics Technology and Engineering.
- Seemab Mehmood, Murtaza Najabat Ali, Umar Ansari, Mariam Mir, Munezza Ata Khan (2015), "*Auxetic Polymeric Bone Plate As Internal Fixator For Long Bone Fractures: Design, Fabrication And Structural Analysis*", TECHNOLOGY AND HEALTH CARE.
- Mariam Mir, Murtaza Najabat Ali, Umar Ansari, Javaria Sami, (2015), "*Structure and Motility of the Esophagus from a Mechanical Perspective*" ESOPHAGUS-TOKYO.
- Mariam Mir, Umar Ansari, Murtaza Najabat Ali, (2014),"*A Macro-Scale Model of a Tunable Drug Dispensation Device for Enhanced Wound Healing*", Journal of Applied Biomaterials & Functional Materials.
- Bakhtawar Ghafoor, Murtaza Najabat Ali, Umar Ansari, Muhammad Faraz Bhatti, Mariam Mir, Hafsah Akhtar, Fatima Darakhshan, (2016), "*New Bio functional loading of Natural Anti-microbial agent in biodegradable Polymeric films for Biomedical Applications*", International Journal of Biomaterials.
- Murtaza Najabat Ali, Umar Ansari, Javaria Sami, Faisal Qayyum (2016), "*To develop a biocompatible and biodegradable polymer-metal composite with good;mechanical and drug release properties",* Journal of Materials Sciences and Engineering, Vol.5, issue 5
- Faiza Bukhari, Murtaza Najabat Ali, Umar Ansari, Hafsah Akhtar, Muhammad Sarim, Muhammad Umer (2016) "*A biaxial strain based expansion mechanism for Auxetic*

stents deployment", Journal of Applied Biomaterials & Functional Materials (JABFM).

- Tehreem Jamil, Umar Ansari, Murtaza Najabat Ali (2016), "*A Review on Biomechanical and Treatment Aspects Associated with Anterior Cruciate ligament*", *Innovation and Research in Biomedical Engineering (IRBM)*.
- Mariam Mir, Umar Ansari, Murtaza Najabat Ali, Muhammad Hassan ul Iftikhar, Faisal Qayyum (2016), "Electromechanically Actuated Multifunctional Wireless Auxetic Device for Wound Management", *IEEE JOURNAL OF TRANSLATIONAL ENGINEERING IN HEALTH AND MEDICINE-JTEHM*
- Mariam Mir, Murtaza N Ali, Afifa Barakullah, Aishah Gulzar, Munam Arshad, Shizza Fatima, Maliha Asad, (2017),"*POLYMERIC BIOMATERIALS FOR WOUND HEALING-A REVIEW*", Progress in Biomaterials,
- Mariam Mir, Murtaza Najabat Ali, Patrick. J. Smith, Ambar Zahoor, Umar Ansari, Faisal Qayyum, Sabtain Abbas, (2017), "*AQUA-GEL pH SENSOR: Intelligent Engineering and Evaluation of pH Sensor based on Multi-Factorial Testing Regimes*", SENSOR REVIEW.
- Mariam Mir, Murtaza N. Ali, Amber Zahoor, Patrick Smith (2018), "*Comparison of Sensing Behaviour of two hydrogel based polymeric materials in the physiological range*", Biomedical Physics & Engineering Express
- Muhammad Umer, Murtaza Najabat Ali, Aamir Mubashar, Mariam Mir (2018), "*Computational Modeling of the Balloon Expandable Stent Deployment in Coronary Artery Using Finite Element Method", Research Reports in Clinical Cardiology*
- Bakhtawar Ghafoor, Amna Aleem, Murtaza Najabat Ali, Mariam Mir, (2018), "*Review of the Fabrication Techniques and Applications of Polymeric Electrospun nanofibers for drug delivery systems",* Journal of Drug Delivery Science and Technology.
- Zainab Riaz, Ali, Murtaza Najabat Ali, Zunaira Qureshi, & Muhammed Mohsin (2020). "*In Vitro Investigation and Evaluation of Novel Drug Based on Polyherbal Extract against Type 2 Diabetes",* Journal of Diabetes Research, 2020, 1–9. doi:10.1155/2020/7357482
- Zunaira Qureshi, Murtaza Najabat Ali, "*Diabetic Neuropathy Pain Management: A Global Challenge*", Current Diabetes Reviews. 2020 Nov. DOI: 10.2174/1573399816666201103142521.
- Bakhtawar Ghafoor, Murtaza Najabat Ali, Zainab Riaz (2020), "*Synthesis and Appraisal of Natural Drug –Polymer Based Matrices Relevant to the Application of Drug-Eluting Coronary Stent Coatings",* Cardiology Practice and Research, Oct 2020, https://doi.org/10.1155/2020/4073091

Total Conference Papers published: 12

- Murtaza Najabat Ali, Mariam Mir, Piotr Buszman (2021), "*Preclinical Evaluation of the Vascular Effects of Rejuvenate® Cobalt Chromium Coronary Stent System Implanted in the Porcine Coronary in Stent Restenosis Model",* Pakistan Heart Journal.
- Nayab Azam, Murtaza Najabat Ali, Tooba Javaid (2021), "*Carbon quantum dots for biomedical applications: review and analysis*", Frontiers in Materials
- Azhar Mahmood Kayani, Nadeem Rizvi, Khusrow A. Niazi, Murtaza Najabat Ali, Muhammad Mubashar Aslam, Mariam Mir, Haris Ali (2021), "*Clinical Evaluation of the indigenously manufactured REJUVENATE bare metal stent system in Pakistani Patients with coronary artery disease",* Pakistan Heart Journal
- Sadia Hassan, Murtaza Najabat Ali, Mariam Mir, Ammad Ahmad, Munam Arshad (2021), "*Development and evaluation of drug delivery patch for topical wound healing application*", SN Applied Sciences
- Natasha Mukhtiar, Murtaza Najabat Ali, Hafsa Inam (2021), "*Design and development of impurities free pyrolytic coated mechanical bi-leaflet heart valve prototype",* Pakistan Heart Journal
- Zunaira Qureshi, Murtaza Najabat Ali, Minahil Khalid (2022), "An insight into Potential Pharmacotherapeutic Agents for Painful Diabetic Neuropathy", Journal of Diabetes Research
- Bakhtawar Ghafoor, Murtaza Najabat Ali (2022), "Synthesis and in-vitro evaluation of Natural Drug loaded polymeric films for cardiovascular applications" Journal of bioactive and compatible polymers. (Accepted for publication
- Hafsa Inam, Murtaza Najabat Ali, Faizan Javed, Aimen Arshad (2022), "Design Development and Modeling of the Laser-cut Reinforced Shafts for Radiopaque Media Delivery to Coronary Artery Using Finite Element Method: Laser cut catheter reinforced shaft", International conference proceedings by ACM digital library
- Sadia Hasan, Murtaza Najabat Ali, Bakhtawar Ghafoor (2022)"Evolutionary Perspective of drug eluting stents from thick polymer to polymer free approach" Journal of Cardiothoracic Surgery
- Sadia Hasan, Murtaza Najabat Ali, Bakhtawar Ghafoor (2022)"An Appraisal of polymers of DES technologies and their impact on drug release kinetics", International Journal of Polymeric Materials and Polymeric Biomaterials
- Sadia Hassan, Aroosa Younis Nadeem, Muhammad Ali, Murtaza Najabat Ali, Muhammad Bilal Khan Niazi, Azhar Mahmood (2022), "Graphite coatings for biomedical

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implants: A focus on anti-thrombosis and corrosion resistance properties", Materials Chemistry and Physics

- Sadia Hassan, Murtaza Najabat Ali, Mariam Mir (2022), Investigation of Presence of Carbon-rich particles on Cobalt-based Cardiovascular implants and their influence on the corrosion resistance and biocompatibility, Journal of Materials Engineering and Performance
- Murtaza Najabat Ali, Mariam Mir, Rabeil Gul (2023), "An appraisal of pH triggered bacitracin drug release through composite hydrogel systems", Journal of Biomaterials Applications
- Sadia Hassan, Tooba Javaid Khan, Murtaza Najabat Ali, Namra Bilal (2023), "Development of Plant based bioactive, anticoagulant and antioxidant surface coatings for medical implants, Materials Today Communications
- Hafsa Inam, Murtaza Najabat Ali, Ibraheem Raza Jameel, Dil Awaiz and Zunaira Qureshi, (2022), Development of Robust PEBAX-Based Angiographic Catheter: Design and In Vitro Study, Materials MDPI
- Rabail Gul, Mariam Mir, Dr. Murtaza Najabat Ali (2023), An appraisal of pH triggered Bacitracin drug release, through composite hydrogel systems, Journal of Biomaterials Applications
- Rabail Gul, Mariam Mir, Dr. Murtaza Najabat Ali (2023), An appraisal of pH triggered Bacitracin drug release through composite hydrogel systems, Journal of Biomaterials Applications
- Sadia Hassan, Namra Bilal, Tooba Javaid Khan, Murtaza Najabat Ali, Bakhtawar Ghafoor, Khawaja Usman Saif (2024), Bioinspired chitosan based functionalization of biomedical implant surfaces for enhanced hemocompatibility, antioxidation and anticoagulation potential: an in silico and in vitro study, Royal society of Chemistry
- Dr. Murtaza Najabat Ali, Fatima Zahra, Zunaira Qureshi (2024), Carbon quantum dots, its synthesis and evaluation of its toxicity, Emerging sustainable Nanomaterials for biomedical application in springer

Book Chapter

- Murtaza Najabat Ali. Fatimah Zahra, Zunaira Qureshi (2024), "Carbon quantum dots, its synthesis and evaluation of its cytotoxicity", Emerging sustainable nanomaterials for biomedical applications by Springer nature's book

CONFERENCE PAPERS

- Murtaza Najabat Ali (2008), "An Overview of Auxetic Materials and their Clinical Relevance" One day symposium on Biomedical Materials at CIIT (IRCBM).
- Murtaza Najabat Ali (2009) "Smart Auxetic Material self-expanding Esophageal Stent-graft, relevant to the palliation of Oesophageal Cancer", 6th International Bhurban Conference on Applied Sciences and Technology (IBCAST).
- Murtaza Najabat Ali (2013), "An Auxetic stent relevant for the treatment of oesophageal cancer," International Science and Technology Conference (ISTEC).
- Tehreem Jamil, Mariam Mir, Faisal Amin, Umar Ansari, Murtaza Najabat Ali, NaumanulHaq (2014), "Fabrication and mechanical testing of synthetic cervical anterior longitudinal ligament" 2014 Global Conference on Polymer and Composite Materials (PCM2014)
- Murtaza Najabat Ali, Faisal Amin, Umar Ansari, Muhammad Asim Minhas (2014), "Anisotropic Coronary Stent Device: Fabrication and Structural Analysis", International Conference on Future Mechanical Engineering and Materials Engineering (MEME 2014)
- Murtaza Najabat Ali, Umar Ansari, Javaria Sami, Faisal Qayyum (2016), "To develop a biocompatible and biodegradable polymer-metal composite with good; mechanical and drug release properties", 5th World Congress on Materials Science and Engineering, Alicante Spain. (Published in Journal of Material Sciences and Engineering)
- Murtaza Najabat Ali, Hafsa Inam (2018), "Smart coronary stent endo-prosthesis for the real-time coronary heart disease management" International conference on recent advances in medical science (ICRAMS), Krakow Poland.
- Bakhtawar Ghafoor, Aisha Tahir, Murtaza Najabat Ali, Mariam Mir, Hassan Ali and Hafsa Inam (2018), "Synthetization and characterization of natural biocompatible composite having sustained drug release mechanism for topical and subcutaneous applications" 19th World Congress on Materials Science and Engineering Barcelona Spain.
- Hafsa Inam, Murtaza Najabat Ali, Mariam Mir, Ammad Ahmed, Manal Fatima and Bakhtawar Ghafoor, (2018), "Designing and fabrication of anisotropic stent for the treatment of coronary heart disease" 19th World Congress on Materials Science and Engineering Barcelona Spain.
- Mariam Mir, Murtaza Najabat Ali, Ayesha Gulzar, Afifa Barakullah, Munam Arshad, Bakhtawar Ghafoor and Hafsah Inam (2018), "Design and fabrication of a

hydrogel based pH sensor array for physiological applications" 19th World Congress on Materials Science and Engineering Barcelona Spain.

- Faizan Saifullah, Hafsa Inam, Murtaza Najabat Ali, Umar Ansari (2019), "Magnetically targeted drug delivery system through imaging technology, PID feedback control and MATLAB", Proceedings of 2019, 11th International conference on Bioinformatics and Biomedical Technology (Published in International Conference Proceedings by ACM), page No. 142-148.
- Hafsa Inam, Murtaza Najabat Ali, Faizan Javed, Aimen Arshad (2021), "Finite Element Simulation and Testing Of Novel Laser Cut Catheter Reinforced Shaft: A Parametric Study On Flexibility, Pushability, Kink Resistance, And Burst Pressure Endurance" 12th International Conference on Bioscience, Biochemistry and Bioinformatics (ICBBB 2022) (Paper Accepted for publication in International Conference Proceedings by ACM (ISBN: 978-1-4503-8738-5))

WORKSHOPS ATTENDED

- Training on PTCA Balloon Catheter manufacturing processes, its certification requirements, test/trials involved at Heinz Schade **Germany**.
- Training on Automated Coronary Drug Eluting Stent manufacturing processes, its certification requirements, test/trials involved at *Heinz Schade* **Germany**.
- Training on Coronary Stent manufacturing processes, its certification requirements, test/trials involved at *M/s Eucatech Rheinfelden* **Germany**.
- Training on the operation and maintenance of STARCUT 12FM Laser machine for stent cutting and on **CAGILA** software at *Rofin Baasel Lasertech Starnberg* **Germany**.
- Training, Operational and Clinical Aspects of Continuous Renal Replacement Therapy (CRRT) on the **Gambro Prisma** CRRT machine.
- Training on operation of **ARROW** (ACAT- I) intra-aortic balloon pump.