

Dr. MOHAMMAD HOSSAIN SHARIARE

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PROFILE

Mohammad Shariare is working as a Professor in the Department of Pharmaceutical Sciences, NSU. Mohammad Shariare did his PhD in Pharmaceutical Sciences from University of Bradford, UK under supervision of **Professor Peter York**. The title of his PhD dissertation was "The rational design of drug crystals to facilitate particle size reduction".

KEY SKILLS

- Experienced formulator with particular interest in poorly soluble, targeted drug delivery (**Nanotechnology**) and respiratory drug product development (**DPIs, MDIs**)
- Molecular level understanding in fundamentals of **material science** - particularly morphology, structure and mechanical properties of drug crystals
- Skilled in interpreting the mechanical processing behaviour and solid surface chemistry of powders using **computational molecular modeling methodology** (eg. Materials Studio 4.1)
- Pragmatic problem solving experience gained in industry, combined with a strong understanding of formulation science through PhD studies
- Proven ability to lead and mentor scientific projects

CAREER SUMMARY

Professor Department of Pharmaceutical Sciences North South University	April, 2022 – present
Associate Professor Department of Pharmaceutical Sciences North South University	Mar, 2017 – Mar, 2022
Assistant Professor Department of Pharmaceutical Sciences North South University	Jan, 2013 – Feb, 2017
Teaching (Lab) Assistance University of Bradford, UK	2009 – 2011
NOVO Healthcare and Pharma Ltd., Dhaka, Bangladesh Senior Development & Production Pharmacist	July 2005 – Aug 2007
<ul style="list-style-type: none">▪ Development and production of several drugs in pellet dosage forms using biodegradable polymers and matrix systems which have improved my knowledge on formulation.	

ACADEMIC CREDENTIALS

- **PhD in Pharmaceutical Sciences - University of Bradford, UK (2011)**
- **Bachelor of pharmacy - First Class, Jahangirnagar University, Bangladesh (2005)**
- **H.S.C. – First class, Dhaka Residential Model College, Bangladesh, (1998)**
- **S.S.C. – First class, Dhaka Residential Model College, Bangladesh, (1996)**

Book Chapter, Research Articles Published and Presented

Book Chapter:

- **Shariare M.H.** & Mohsin Kazi., "Phospholipid Based Nano Drug Delivery Systems of Phytoconstituents". Open Access Book, "Smart Drug Delivery" edited by Dr. Usama Ahmed. Intech Open, UK, October, 2021.

Research paper:

- **Mohammad Hossain Shariare**, Abdullah-Al Masum, Sultan Alshehri, Fars K. Alanazi, Jamal Uddin and Mohsin Kazi. Preparation and Optimization of PEGylated Nano Graphene Oxide-Based Delivery System for Drugs with Different Molecular Structures Using Design of Experiment (DoE). **Molecules**, 2021, 26: 1457.
- **Shariare M. H.**, Humaira Binte Noor, Junayet Hossain Khan, Jamal Uddin, Syed Rizwan Ahamad, Mohammad A. Altamimi, and Mohsin Kazi. Liposomal drug delivery of *Corchorus olitorius* leaf extract containing phytol using design of experiment (DoE): *in-vitro* anticancer and *in-vivo* anti-inflammatory studies. **Colloids and Surfaces B**. **199 (2021)** 111543.
- **Shariare M. H.**, Abdullah Al Masum, Sultan Alshehri, Fars K. Alanazi, Jamal Uddin, and Mohsin Kazi. Preparation and optimization of PEGylated nanographene oxide-based delivery system for drugs with different molecular structures using design of experiment (DoE). **Molecules**. **2021, 26(5):1457**.
- Daiyaan Kabir, Taseen Forhad, William Ghann, Balvin Richards, Mohammed M Rahman, Md. Nizam Uddin, Md. Refat J Rakib, MS; **Mohammad Hossain Shariare**, Faisal I Chowdhury, Mohammad Mahbub Rabbani, Newaz M Bahadur, Jamal Uddin. Dye-Sensitized Solar Cell with Plasmonic Gold Nanoparticles Modified Photoanode. **Nano Structures and Nano Objects**. **2021, 26: 100698**.
- **Shariare M. H.**, A. K. Parvez, G. A. Karikas, and M. Kazi. The growing complexity of COVID-19 drug and vaccine candidates: challenges and critical transitions. **J of infection and Public Health**. **2021, 14 (2) 214-220**.
- Mahfuza Marzan, Md. Shahedur Rahman, Md. Abu Hena Mostofa Jamal, **Mohammad Hossain Shariare**, Md. Anowar Khasru Parvez. Alternative medicine as a treatment options for COVID-19. **Current Traditional Medicine**. **2021**.
- Saeed Ali Syed, Ahmed Bari, Mohammed S. Aldughaim, Md Abdur Rashid, **Mohammad Hossain Shariare** and Mohsin Kazi. Analysis of a "3-(Naphthalen-1-ylimino)indolin-2-one" Compound and Its Antimicrobial Assessment Using Lipid-Based Self-Nanoemulsifying Formulations. **Molecules** **2021, 26, 15**.

- **Shariare, M.H.**, Rahman, M., Lubna, S.R. *et al.* **2020**. Liposomal drug delivery of *Aphanamixis polystachya* leaf extracts and its neurobehavioral activity in mice model. **Nat. Sci Rep 10, 6938**.
- **Shariare, M. H.**; Afnan, K.; Iqbal, F.; A. Altamimi, M.; Ahamad, S.R.; S. Aldughaim, M.; K. Alanazi, F.; Kazi, M. Development and Optimization of Epigallocatechin-3-Gallate (EGCG) Nano Phytosome Using Design of Experiment (DoE) and Their In Vivo Anti-Inflammatory Studies. **Molecules 2020, 25(22), 5453**.
- **Shariare M.H.**, Tonmoy Kumar Mondal, Hani Alotheid, Md. Didaruzzaman Sohel, MD Wadud, Mohammed S Aldughaim, Md Abdur Rashid, and Mohsin Kazi. Azithromycin nanosuspension preparation using evaporative precipitation into aqueous solution (EPAS) method and its comparative dissolution study. **Current Pharm. Anal. 2020**.
- Md. Anowar KhasruParvez, Karabi Saha, JuairiaRahman, Rahath Ara Munmun, Md. Atikur Rahman, Shuvra KantiDey, Md. Shahedur Rahman, Sohikul Islam, **Mohammad Hossain Shariare. (2019)**. Antibacterial activities of green tea crude extracts and synergistic effects of epigallocatechingallate (EGCG) with gentamicin against MDR pathogens. **Heliyon, 5 (7)**.
- **M. H. Shariare**, M. A. Altamimi, A. L. Marzan, R. Tabassum, B. Jahan, H.M.Reza, M. Rahman, G. U. Ahsan, M. Kazi. **(2019)**. In vitro dissolution and bioavailability study of furosemide nanosuspension prepared using design of experiment (DoE). **Saudi Pharmaceutical Journal, 27: 96-105**.
- N. Akter, L. Chowdhury, J. Uddin, A. A. Ullah, **M. H. Shariare** and Md S. Azam. **(2018)**. N-halamine functionalization of polydopamine coated Fe₃O₄ nanoparticles for recyclable and magnetically separable antimicrobial materials. **Mater. Res. Express, 5 (11)**
- A.L. Marzan, R. Tabassum, B. Jahan, M.H. Asif, M. Kazi, M. De Matas, **M.H. Shariare***. **(2018)**. Preparation and characterization of stable nanosuspensions for dissolution rate enhancement of Furosemide: A QbD Approach. **Current Drug Delivery. 15 (5): 672-685**.
- **M.H. Shariare***, S. Sharmin, I. Jahan, H.M. Reza. **(2018)**. The impact of process parameters on carrier free paracetamol nanosuspension prepared using different stabilizers by antisolvent precipitation method. **Journal of Drug delivery Science and Technology, 43: 122- 128**.
- M. Kazi, **Mohammad H. Shariare**, Mshaan al-bgomi, muhammad delwar hussain and fars k alanzi. **(2018)** Simultaneous determination of curcumin (cur) and thymoquinone (thq) in lipid based self-nanoemulsifying systems and its application to the commercial product using UHPLC-uv-vis spectrophotometer. **Current pharmaceutical analysis, 14(3): 277 - 285**.
- Zerine T.Rushmi, Nasrin Akter, Rabeya J.Mow, Merina Afroz, Mohsin Kazi, Marcel de Matas, Mahbubur Rahman, **Mohammad H.Shariare. (2017)**. The impact of formulation attributes and process parameters on black seed oil loaded liposomes and their performance in animal models of analgesia. **Saudi Pharmaceutical Journal, 25: 404 - 412**.
- **Shariare, M.H.**, Blagden, N., De Matas, M., Leusen, F.J.J. & York, P. (2012). Influence of solvent on the morphology and subsequent comminution of ibuprofen crystals by air jet milling. **Journal of Pharmaceutical Science. 101 (3): 1108-1119**.
- **Shariare, M.H.**, De Matas, M., Shao, Q. & York, P. (2011). The impact of material attributes and process parameters on micronisation of lactose monohydrate. **International Journal of Pharmaceutics. 408: 58-66**.
- **Shariare, M.H.**, De Matas, M. & York, P. (2012) Effect of crystallisation conditions and feedstock morphology on the aerosolization performance of micronised salbutamol sulphate. **International Journal of Pharmaceutics. 415: 62-72**.
- **Shariare, M.H.**, De Matas, M., Leusen, F.J.J., York, P. & Anwar, J. (2011). Prediction of the mechanical behaviour of crystalline solids. **Pharmaceutical Research; 29(1):319-31**.

- **Shariare, M.H.,** De Matas, M. & York, P. (2010). Influence of crystallisation conditions on the morphology of Ibuprofen crystals. **Journal of Pharmacy and Pharmacology, 62 (10), 1337.**

Oral Presentation:

- "Phospholipid Based Nano Drug Delivery systems of Phytoconstituents". Presented at International Seminar on '**Intervention of Nanotechnology in Targeted Drug delivery System**' Sinhgad College of Pharmacy, Savitribai Phule Pune University, Pune, India. Jan 13-14, 2020.
- "A rapid method for predicting the mechanical behaviour of active pharmaceutical ingredients", Presented at **CMP seminar, University of Bradford, UK, March, 2011.**
- "Towards a rapid method for predicting the mechanical behaviour of active pharmaceutical ingredients", Presented at '**APS Materials by design**', **University of Nottingham, UK, June 22-23, 2011.**
- "Milling to achieve the appropriate particle properties for inhalation, how can we rank or predict?" Presented at '**APS Inhalation**' **University of Bath, UK, July 4-6, 2011.**
"Best poster presentation award from the selected abstract"

Poster presentation:

- **Comparative Study of Lipid-Based Nano Drug Delivery System Using MSP1D1 Protein and Poloxamer 407.** Presented at Pharma Fiesta, 2020, University of Asia Pacific, Dhaka.
- **Lipid Based Nano Drug delivery System of Curcumin Using MSP1D1 Protein and Poloxamer 407.** Presented at International Seminar on '**Intervention of Nanotechnology in Targeted Drug delivery System**' Sinhgad College of Pharmacy, Savitribai Phule Pune University, Pune, India. Jan., 2020.
- **A Comparative Study of Lipid-Based Nano Drug Delivery System Using MSP1D1 Protein and Poloxamer 407.** Accepted for presentation at American Association of Pharmaceutical scientists (AAPS) Annual Meeting and Exposition, **USA. 2019.**
- **Liposomal drug delivery of *Blumea lacera* leaf extract using phospholipid from different Egg Sources.** Presented at Pharma Fiesta, 2018, University of Asia Pacific, Dhaka.

- **Preparation and development of Liposomal drug delivery of *Blumea lacera* leaf extract using phospholipid from different egg sources.** Accepted for presentation at American Association of Pharmaceutical scientists (AAPS) Annual Meeting and Exposition, **USA. 2018.**
- **The Impact of Different Stabilizers in the Preparation and Development of Nanosuspension for Different Drugs.** Accepted for presentation at American Association of Pharmaceutical scientists (AAPS) Annual Meeting and Exposition, **USA. 2018.**
- **Liposomal Drug Delivery System of *Corchorus olitorius* Leaf Extract.** Presented at International Conference on Genomics, Nanotech and Bioengineering, 2017, North South University, Dhaka.
- **Liposomal Drug Delivery System of *Corchorus olitorius* Leaf Extract Containing Oleic Acid And Phytol.** Presented at American Association of Pharmaceutical scientists (AAPS) Annual Meeting and Exposition, USA. **2017.**
- **Formulation and Optimization of Epigallocatechin Gallate (EGCG) Nano Drug Delivery System Using QbD Approach.** Presented at American Association of Pharmaceutical scientists (AAPS) Annual Meeting and Exposition, **USA. 2016.**
- **Preparation and Characterization of Graphene Oxide Nanoparticle Based Suspension for Optimized Drug Delivery.** Presented at American Association of Pharmaceutical scientists (AAPS) Annual Meeting and Exposition, **USA. 2016.**
- **Formulation and Optimization of Furosemide Nanosuspension by Anti-solvent Precipitation.** Presented at American Association of Pharmaceutical scientists (AAPS) Annual Meeting and Exposition, **USA. 2016.**
- **"Oral Delivery of Insulin using Nano-emulsion Approach'** Presented at American Association of Pharmaceutical scientists (AAPS) annual Meeting and Exposition, **USA, 2015.**
- **'Preparation and characterization of Gliclazide Nanosuspension'** Presented at American Association of Pharmaceutical scientists (AAPS) annual Meeting and Exposition, **USA, 2015.**
- **'Preparation and characterization of Black Seed Oil loaded liposomes'** Presented at **American Association of Pharmaceutical scientists (AAPS) annual Meeting and Exposition, 2014.**
- **'PREPARATION AND CHARACTERIZATION OF CARRIER FREE PARACETAMOL NANOSUSPENSION'** Accepted for presentation at **American Association of Pharmaceutical scientists (AAPS) annual Meeting and Exposition, 2014.**
- **"Influence of solvent properties on the morphology of Ibuprofen crystals and its impact on particle size reduction".** Presented at *FIP Pharmaceutical Sciences world congress in association with American Association of Pharmaceutical scientists (AAPS), 2010.*

- Effect of crystallisation conditions and feedstock morphology on the aerosolization performance of micronized salbutamol sulphate delivered by DPI. **Drug delivery to Lung (DDL) Conference, Edinburgh, UK, 2010.**
- The impact of morphology and process parameters on micronisation of salbutamol sulphate. **EUPAT 4, Finland, 2010.**
- Influence of crystallisation conditions on the morphology of Ibuprofen crystals. Presented at **UKPharmSci conference, Nottingham, UK, 2010.**
- "Particle process optimisation for enhanced respiratory drug delivery". Presented at **American Association of Pharmaceutical scientists (AAPS) conference, 2009.**
- Particle optimisation for enhanced respiratory drug delivery. Presented at: **BPC conference, UK, 2009.**

Ongoing Research

- A Comparative Study of Lipid-Based Nano Drug Delivery System Using MSP1D1 Protein and Poloxamer 407
- Development and optimization of phospholipid based nano drug delivery system for anticancer drugs
- Development and optimization of phospholipid based nano drug delivery system for neurodegenerative disease
- Development and optimization of phospholipid based nano drug delivery system for antibiotic resistance.

Award and Grant

Award:

- Merck Bangladesh Publication Award, 2021
- Samson H Chowdhury Memorial Young scientist Award", 2019 on Bangladesh Pharmaceutical industry and current issues of Pharmaceutical Sciences
- Best poster presentation award from the selected abstract, Presented at '*APS Inhalation*' University of Bath, UK, July 4-6, 2011
- First runner-up award on Poster Presentation, University of Asia Pacific, 2020
- Champion award on Poster presentation, University of Asia Pacific, 2018
- Champion award on Poster presentation, North south University, 2018
- First Prize on Poster presentation, ICGNB, North South University, 2017
- Champion award on Poster presentation, North South University, 2016

Grant:

- NSU Research Grant for Fiscal year 2016-17
- NSU Research Grant for Fiscal year 2018-19

- NSU Research Grant for Fiscal year 2019-20
- NSU Research Grant for Fiscal year 2020-21
- R & D project Ministry of Science and Technology, Bangladesh, 2018-19
- Education Ministry Project (BANBEIS), Bangladesh, 2019

TRAINING PROGRAMMES

- **The UK Professional standards frameworks for teaching and learning** in higher education (Standard descriptor 1)
- Short course on **stability testing** of pharmaceuticals (**Royal Pharmaceutical Society of GB, 2011**)
- Workshop on Inhalation and nasal drug delivery (**Academy of Pharmaceutical Science GB, 2011**)
- Workshop on Quality by design (**QBD**) and process analytical technology (**PAT**)
- Course on control of substances hazardous to health (**COSHH**) assessment

References

- Professor Jamshed Anwar
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Signature

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Dr. Mohammad Hossain Shariare