

Resume of Mohammad Alnaief



- **Personal Information:**

Name:	Mohammad Hussein Ali Alnaief
Nationality:	Jordanian
Place of birth:	Abha, Saudi Arabia
Date of birth:	March 16, 1981
Marital status:	Married and father of two boys
Mailing address:	School of Applied Medical Sciences German Jordanian University P.O.Box 35247 Amman 11180 Jordan
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- **Research interest:**

- ❖ Process developments for the production of nanoparticles and nanoporous materials/hybrid materials as an advanced solution for life science applications.
- ❖ Supercritical fluid technology as versatile tool for production of nanostructured materials
- ❖ Drug delivery and targeting systems.
- ❖ Scale up of production processes of nano and nanoporous particles.

- **Professional Experience :**

September 2011 - Present	Head of the Pharmaceutical Engineering Department, German-Jordanian University. Amman, Jordan.
September 2011 - Present	Assistant professor at the Pharmaceutical Engineering Department, German-Jordanian University. Amman, Jordan.
Jan. 2011 – September 2011	Post doctoral research Production of Biodegradable Nanoporous Materials Hamburg University of Technology, Institute of Thermal Separation Processes, Eissendorferstr. 38, D-21073, Hamburg Germany

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- Sep. 2006- Feb. 2007 German Jordan University, Jordan
Research Assistant and lab supervisor.
- June 30, 2003 – Sep 29, 2003 Internship in degussa, Germany.
“Quality control and development of carbon black by investigating the equisetetic signal from the carbon black reactor using MATLAB”.
- **Education:**

May 2008 – Jan 2011 **PhD Study**
Development of production processes of nanoporous materials for Advance Drug Delivery System
Hamburg University of Technology, Institute of Thermal Separation Processes, Eissendorferstr. 38, D-21073, Hamburg Germany

Feb. 2007-April 2008 **PhD Study**
Functionalization and preparation of silica aerogels for advanced drug carriers systems
Friedrich - Alexander - University Erlangen – Nuremberg, Chair of Separation Science and Technology Science, Egerlandstr. 3 D-91058 Erlangen, Germany.

Sep. 2004 – Aug. 2006t **Master Study**
Master of Science in Chemical and Bio-Engineering
Friedrich-Alexander University, Erlangen-Nürnberg.
Master thesis: “**Particle Substrate Adhesion in Humid Ambience**”

Sep. 1999 – June 2004 **Undergraduate Study**
Bachelor of Science in Chemical Engineering.
Jordan University of Science and Technology, Irbid, Jordan.
With an average of 85.2% (excellent), the rank was the first among 72 students.

Sep. 1987 - July 1999 **Primary and High School**
Certificate Examination of General Secondary Education (Tawjihi).
With a percentage average of 89.8, Al-Hussein High School, Irbid, Jordan.
 - **Academic research :**

March 2007- May 2008 **Research Associate**

Institute of thermal separation processes, Friedrich-Alexander University, Erlangen-Nürnberg Prof. W. Arlt.

 - production of silica aerogel functionalization of silica aerogel for tailor made drug delivery system

Institute of thermal separation processes, Hamburg University of Technology Prof. I. Smirnova.

 - Production of microspherical silica aerogel using supercritical drying of emulsion.
 - Production of biodegradable nanoporous materials with

specific surface properties.

- Applying the produced porous material for drug delivery systems, inhalation rout.

October 2004 – Aug. 2006

Research Assistant

Institute of Particle Technology, Friedrich-Alexander University Erlangen-Nürnberg, Germany.

- Developing the “toner jumping method” for the investigation of the adhesion forces between toner particles, and different substrates.
- Investigation of adhesion forces between different polymer particles and different substrates, applying Atomic Force Microscope.
- FEM simulation of particle deformation and its influence on the adhesion forces.

B.Sc. Research

Simulation, Sensitivity Analysis, and Parameters Estimation of an Existing Wastewater Treatment Plant

- **Computer skills:**

Plate forms

Programming Languages

Software Tools

Mathematical Packages

Technical Simulators

Windows

C, C++

MS Office

MATLAB, Polymath

ASPEN+, DesignII, GPS-X for waste water treatment labVIEW, ABAQUS, Patran

- **Languages:**

Arabic

English

German

Mother language

Excellent

Excellent

- **Awards:**

- ❖ Return of expert award “Centre for international Migration and Development” (CIM) 2012
- ❖ PhD scholarship from German-Jordan University 2007 – 2011 (Jordan-Germany)
- ❖ Degussa stiftung scholarship for master thesis Feb 2006 – Aug 2006.
- ❖ Bayern scholarship for master study 2005-2006.
- ❖ Dean’s honor list, College of Engineering, Jordan University of Science and Technology, 1999-2004.
- ❖ B.Sc. Scholarship, Ministry of Higher Education and Scientific Research, 1999-2004.
- ❖ Students Deanship award for performance, 1999-2004.
- ❖ Prime ministry award for excellent academic performance, 2000, 2004.

- **Publications:**

- ❖ **Published articles:**

1. **Alnaief M**, Smirnova I: Effect of surface functionalization of silica aerogel on their adsorptive and release properties. *Journal of Non-Crystalline Solids* 2010, 356(33-34):1644-1649.
2. **Alnaief M**: Process Development for Production of Aerogels with Controlled Morphology as Potential Drug Carrier Systems. Hamburg: Hamburg University of Technology; 2011.
3. **Alnaief M**, Alzaitoun MA, García-González CA, Smirnova I: Preparation of biodegradable nanoporous microspherical aerogel based on alginate. *Carbohydrate Polymers* 2011, 84(3):1011-1018.
4. García-González CA, **Alnaief M**, Smirnova I: Polysaccharide-based aerogels - Promising biodegradable carriers for drug delivery systems. *Carbohydrate Polymers* 2011, 86(4):1425-1438.
5. **Alnaief M**, Smirnova I: In situ production of spherical aerogel microparticles. *The Journal of Supercritical Fluids* 2011, 55(3):1118-1123.
6. **Alnaief M**, Antonyuk S, Hentzschel CM, Leopold CS, Heinrich S, Smirnova I: A novel process for coating of silica aerogel microspheres for controlled drug release applications. *Microporous and Mesoporous Materials* 2012, 160(0):167-173.
7. García-González CA, Camino-Rey MC, **Alnaief M**, Zetzl C, Smirnova I: Supercritical drying of aerogels using CO₂: Effect of extraction time on the end material textural properties. *Journal of Supercritical Fluids* 2012, 66:297-306.
8. García-González CA, Uy JJ, **Alnaief M**, Smirnova I: Preparation of tailor-made starch-based aerogel microspheres by the emulsion-gelation method. *Carbohydrate Polymers* 2012, 88(4):1378-1386.
9. Hentzschel CM, **Alnaief M**, Smirnova I, Sakmann A, Leopold CS: Enhancement of griseofulvin release from liquisolid compacts. *European Journal of Pharmaceutics and Biopharmaceutics* 2012, 80(1):130-135.
10. Hentzschel CM, **Alnaief M**, Smirnova I, Sakmann A, Leopold CS: Tableting properties of silica aerogel and other silicates. *Drug Development and Industrial Pharmacy* 2012, 38(4):462-467.
11. Wörmeyer K, **Alnaief M**, Smirnova I: Amino functionalised Silica-Aerogels for CO₂-adsorption at low partial pressure. *Adsorption* 2012, 18(3-4):163-171.

- ❖ **Conferences (presentation)**

1. Smirnova; **M. Alnaief**, Mehling, T.; Arlt, W.; Günther, U.; Neubert, R. Poröse anorganische und organische Materialien als Träger für Arzneistoffe ProcessNet-Jahrestagung 2008, Karlsruhe, Deutschland (2008).
2. **M. Alnaief**; I. Smirnova, "Production of Biocompatible Aerogel Microparticles" (Vortrag) ProcessNet-Jahrestagung 2009, Mannheim, Deutschland (2009).
3. Hentzschel C.M., Sakmann A., **Alnaief M.**, Smirnova I., Leopold C.S. „Tableting properties of silica aerogel and various silicates" DPhG Jahrestagung 2009, Jena, Deutschland (2009).
4. **M. Alnaief**, I. Smirnova. "Production of Spherical Aerogel Microparticles by Supercritical Extraction of Emulsion" 12th European Meeting on Supercritical Fluids, Graz (2010) **(Keynote Lecture)**.
5. **M. Alnaief**, I. Smirnova. "Production and Coating of Silica Aerogel Microspheres for Advance Drug Delivery" CHISA 2010 & ECCE 7, Prague (2010).
6. P. Gurikov, A. Kolnoochenko, A. Didenko, **M. Alnaief**, I. Smirnova, N. Menshutina. "Adsorption of drug from sc. CO₂ and their release from aerogel based formulations: modeling using cellular automata" CHISA 2010 & ECCE 7, Prague (2010).

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7. **M. Alnaief**, I. Smirnova, S. Antonyuk, S. Heinrich. "A novel process for production of aerogel microspheres and their coating with polymeric materials in a spouted bed" (Talk) ProcessNet-Jahrestagung, Aachen, 2010.
 8. S. Antonyuk, S. Heinrich, **M. Alnaief**, I. Smirnova. "Application of novel spouted bed process for the drying and coating of silica aerogels microspheres for advanced drug delivery" International Drying Symposium (IDS 2010) Magdeburg, Germany (2010).
 9. C.A. García-González, **M. Alnaief**, L. Pérez-Cantú; M. Betz, S. Cumana, U. Kulozik, I. Smirnova
"Natural polymer-based aerogels: Promising biodegradable nanostructured matrices for life sciences applications" (Talk). 8th European Congress of Chemical Engineering, Berlin, Germany (2011)
 10. **M. Alnaief**, C.A. García-González, S. Cumana, K. Wörmeyer, I. Smirnova "Supercritical fluid technology for tailor-made aerogel particles" (Talk) 8th European Congress of Chemical Engineering, Berlin, Germany (2011)
 11. C.A. García-González, **M. Alnaief**, I. Smirnova "TITLE: Polysaccharide-based aerogels: Promising biodegradable matrices for life sciences applications", 13th European Meeting on Supercritical Fluids, The Hague, The Netherlands (2011)
- ❖ **Conference (poster)**
1. **M. Alnaief**; I. Smirnova "Functionalized Silica Aerogels for Advanced Drug Carrier Systems" 9th international symposium on supercritical fluids, Arcachon, France (2009)
 2. **Alnaief, M.**; Smirnova, I. "Production of Spherical Aerogel Microparticles by Supercritical Extraction of Emulsion and Spray Drying" Jahrestreffen der FA Fluidverfahrenstechnik und Hochdruckverfahrenstechnik, Fulda (2010)
 3. **M. Alnaief**, I. Smirnova, S. Antonyuk, S. Heinrich, C.M. Hentzschel, R. Conradi, C.S. Leopold. "Aerogel based solid dosage forms for target drug release" 7th World Meeting on Pharmaceutics, Biopharmaceutics and Pharmaceutical Technology, Malta (2010)
 4. **M. Alnaief** , I. Smirnova , R.H.H. Neubert. "Polysaccharide aerogels: nanoporous material with high surface area and potential to stabilize amorphous drug forms" 7th World Meeting on Pharmaceutics, Biopharmaceutics and Pharmaceutical Technology, Malta (2010)
 5. C.M. Hentzschel, **M. Alnaief**, I. Smirnova, A. Sakmann, C.S. Leopold. " Hydrophilic Silica Aerogels and Liquisolid Systems - Two drug delivery systems to enhance dissolution rates of poorly soluble drugs". The 37th Annual Meeting and Exposition of the Controlled Release Society, Portland, Oregon, U.S.A 2010
 6. **M. Alnaief**, I. Smirnova. "Biodegradable nanoporous microspheres for advanced drug carrier systems "Innovative materials and technologies in chemical-pharmaceutical industry, Moscow (2010).
 7. **M. Alnaief**, I. Smirnova. "Production of Spherical Silica Aerogel Microparticles by Supercritical Extraction of Emulsion" Innovative materials and technologies in chemical-pharmaceutical industry, Moscow (2010).

Date: November 9, 2012

Mohammad Alnaief