Atidel Aboubaker Ben Hadj-Alouane, Ph.D., Eng.

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CURRENT APPOINTMENT

FULL PROFESSOR	Department of Industrial Engineering and Engineering Management University of Sharjah	2021+

FORMER APPOINTMENTS

FULL PROFESSOR	Department of Industrial Engineering National Engineering School of Tunis University of Tunis El Manar	2011-2021
CO-FOUNDER & DIRECTOR	Ph.D. Program in Industrial Engineering National Engineering School of Tunis University of Tunis El Manar	2014-2021
FOUNDING DIRECTOR	OASIS Laboratory National Engineering School of Tunis University of Tunis El Manar	2005-2020
INVITED PROFESSOR	University of Lorraine, France.	March 2015
ASSOCIATE PROFESSOR	Department of Industrial Engineering National Engineering School of Tunis University of Tunis El Manar	Nov. 2005 Feb. 2011
CO-FOUNDER & DIRECTOR	Masters' Program in Industrial and Systems Engineering National Engineering School of Tunis University of Tunis El Manar	Sep. 2006 June 2013
ASSISTANT PROFESSOR	Department of Industrial Engineering National Engineering School of Tunis University of Tunis El Manar	Sep. 1997 Oct. 2005
ASSISTANT RESEARCH SCIENTIST	Intelligent Transportation Systems (ITS) Laboratory The University of Michigan, Ann Arbor	Jan. 1995 July 1997

POST-DOCTORAL FELLOW	Intelligent Transportation Systems (ITS) Laboratory The University of Michigan, Ann Arbor	Jan. 1994 Dec. 1994

EDUCATION

Dec. 1994 **Ph.D. in Industrial and Operations Engineering**, The University of Michigan, Ann Arbor, USA
<u>Thesis tile</u>: A dual genetic algorithm for nonlinear integer programs.

Dec. 1992 **M.S.E. in Industrial and Operations Engineering**, The University of Michigan, Ann Arbor, USA

July 1987 **Advanced Engineering Diploma in Industrial Engineering**, The National Engineering School of Tunis, Tunisia.

RESEARCH INTERESTS

- ❖ Artificial intelligence for optimization in the context of Industry 4.0
- ❖ Design and management of integrated logistics systems & green logistics
- ❖ Risk management in supply chains
- ❖ Development of decision support systems based on combinatorial optimization
- ❖ Application of Operations Research to service systems (Telecommunications, Cloud systems and infrastructure, Health systems, etc.)

EXPERTISE IN RESEARCH AND DEVELOPMENT

- ❖ **Tunisian Ministry of Transport:** Strategy development for promoting the multi-modal transport system.

- ❖ **Tunisian Ministry of Industry:** Co-founder and board member of the professional masters' program on Modernization and Optimization for Enterprises **(MOME),** for the Tunisian Virtual University.

- ❖ **Tunisian TELECOM Company:** Integrated dimensioning and routing in telecommunication systems.

- ❖ **SONEDE (Tunisian Water Distribution Company):** Optimization of energy consumption in a network of water pumping stations.

- ❖ **University of Minnesota:** Asset Management; Risk mitigation in supply chains.

- ❖ **Ecole Polytechnique de Montréal:** Decision support systems for reverse logistics.

- ❖ **Grenoble-INP:** Optimal planning in health care systems; Integrated supply chain design; Green logistics; Supply chain design under uncertainties.

- ❖ **University of Lorraine:** development of reliability based approaches for supply chain performance measure and optimization.

❖ **The University of Michigan Intelligent Transportation laboratory:** Manager of simulation and modeling team, working on the evaluation of advanced traffic and route guidance systems and infrastructures.

DISTINCTIONS

2013   **Invited speaker at the International Conference on Advanced Logistics and Transport (ICALT)**
Risk Mitigation in Supply Chain Design.

2007   **Best Student Paper Award at the International Conference on Industrial Engineering and Systems Management (IESM),** China.

1994   **Nominated member of Sigma Xi**, The Scientific Research Society.

1993   **Graduate Distinguished Achievement Award**, The University of Michigan.

TEACHING & STUDENT SUPERVISION

Main courses:
❖ Integrated Supply Chain Design
❖ Logistics Management
❖ Production Scheduling
❖ Production Management
❖ Project Management
❖ Engineering Management
❖ Process Design
❖ Operations Research
❖ Discrete Optimization

Student supervision:
❖ Ph.D. students (10)
❖ Master's students (over 40)
❖ Bachelor's students (over 60)

OTHER ACADEMIC & RESEARCH ACTIVITIES

❖ Member-elect of ENIT Scientific Board (2011-2013)
❖ Leading member of academic program committee in charge of modernization and reform for Industrial Engineering at ENIT.
❖ Member of the national committee for accreditation of undergraduate and graduate engineering programs in Tunisia.

❖ Regular member of Tunisian national committees for recruiting and promoting faculty members within the Ministry of Higher Education and Scientific Research.

- ❖ Principal Investigator of CMCU Franco-Tunisian research projects on *Integrated & Green Logistics* (2008-2016).
- ❖ Co-president of Program Committee of the International Conference on Modeling and Simulation (MOSIM, 2010), and regular member of program committees of various international conferences (IESM, CIGI, CIE, ILS, etc.).

PUBLICATIONS (30 journal papers & over 50 conference papers)

Selected journal papers

Fekih, A., H. Hadda, I. Kacem, **A. B. Hadj-Alouane**. A hybrid genetic tabu search algorithm for minimizing total completion time in a flexible job shop scheduling problem. To appear in *European Journal of Industrial Engineering*.

Brahmi, A., **A. B. Hadj-Alouane**, S. Sboui. Dynamic and reactive optimization of physical and financial flows in the supply chain. *International Journal of Industrial Engineering Computations*, 11:83–106, 2020.

Farhat, M., A. Akbalik, **A. B. Hadj-Alouane**, Nathalie Sauer. Lot sizing problem with batch ordering under periodic buyback contract and lost sales. *International Journal of Production Economics*, 208:500–511, 2019.

Chelly, A., I. Nouira, Y. Frein, **A. B. Hadj-Alouane**. On The consideration of carbon emissions in modelling-based supply chain literature: the state of the art, relevant features and research gaps. *International Journal of Production Research*, 57:15-16, 2019.

Akbalik, A., **A. B. Hadj-Alouane**, N. Sauer, H. Ghribi. NP-hard and polynomial cases for the single-item lot sizing problem with batch ordering under capacity reservation. *European Journal of Operational Research*, In Press, 257(2):483–4931, 2017.

Hfaiedh, W., C. Sadfi, I. Kacem, **A. B. Hadj-Alouane**. A branch-and-bound method for the single-machine scheduling problem under a non-availability constraint for maximum delivery time minimization. *Applied Mathematics and Computation*, 252:496–502, 2015.

Nouira, I., Y. Frein, **A. B. Hadj-Alouane**. Optimization of manufacturing systems under environmental considerations for a greenness-dependent demand. *International Journal of Production Economics,* 150:188–198, 2014.

Ben Aîcha, S., **A. B. Hadj-Alouane**. Super Facilities versus chaining in mitigating disruption impacts. *Computers and Industrial Engineering*, 65:351-359, 2013.

Abdessalem, M., **A. B. Hadj-Alouane**, D. Riopel. Decision modelling of reverse logistics systems: Selection of recovery operations for end-of-life products. *International Journal of Logistics Systems and Management*, 13(2):139-161, 2012.

Hammami R., Y. Frein, **A. B. Hadj-Alouane**. An international supplier selection model with inventory and transportation management. *Flexible Services and Manufacturing Journal*, 24 (1): 4-27, 2012.

Balma, A., N. Ben Hadj-Alouane, **A. B. Hadj-Alouane**. A near-optimal solution approach for the multi-hop traffic grooming problem, I*EEE/OSA Journal of Optical Communication Networking*, 3(12):1-11, 2011.

Ben Chihaoui, F., I. Kacem, **A. B. Hadj-Alouane**, N. Dridi, N. Rezg. No-wait scheduling of a two-machine flow-shop to minimise the makespan under non-availability constraints and different release dates, *International Journal of Production Research*, 49(21):6273-6286, 2011.

Hammami R., Y. Frein, **A. B. Hadj-Alouane**. Supplier selection in global context: modeling and managerial insights with emphasis on low-cost suppliers' issues, *Int. J. of Services Operations and Informatics* 6(1/2):138 – 159, 2011.

Bouchriha, H., S. D'Amours, M. A. Mammou, **A. B. Hadj-Alouane**. Chips Supply optimization for a network of pulp mills. *Journal of Operations Logistics (JOL)*, 2(1):IV.1-IV.14, 2009.

Hammami, R., Y. Frein, **A. B. Hadj-Alouane**. A strategic-tactical model for the supply chain design in the delocalization context: Mathematical formulation and a case study. *International Journal of Production Economics*, 122(1):351-365, 2009.

Hammami, R., Y. Frein, **A. B. Hadj-Alouane**. Supply chain design in the delocalization context: Relevant features and new modeling tendencies. *International Journal of Production Economics,* 113(2):641-656, 2008.

Znouda, E., N. Ghrab-Morcos, **A. B. Hadj-Alouane**. Multiobjective optimization of mediterranean building design. *Journal of Decision Systems*, 17(2):245-268, 2008.

Ettien, A. A. I., N. Ben Hadj-Alouane, **A. B. Hadj-Alouane**. A Scenario approach for a capacity planning problem with stochastic demands. *Journal of Logistics Systems and Management*, 3(2):158-173, 2007.

Znouda, E., N. Ghrab-Morcos, **A. B. Hadj-Alouane**. Optimization of mediterranean building design using genetic algorithms. *Energy and Buildings*, 39:148-153, 2007.

Ben Hadj-Alouane, N., M. Yeddes, **A. B. Hadj-Alouane**, F. Lin. A Mixed Integer Dynamic Programming Approach to a Class of Optimal Control Problems in Hybrid Systems. *Cybernetics and Systems: an International Journal*, 37:481-504, 2006.

Jebali, A., **A. B. Hadj-Alouane**, P. Ladet. Operating room scheduling. *International Journal of Production Economics (IJPE)*, 99:52-62, 2006.

Hadj-Alouane, A. B., J.C. Bean. A genetic algorithm for the multiple-choice integer program. *Operations Research*, 45(1):92-101, 1997.

Hadj-Alouane, A. B., J. C. Bean, K. G. Murty. A hybrid genetic/optimization algorithm for a task allocation problem. *Journal of Scheduling*, 2:189-201, 1999.

Hadj-Alouane, A. B., K. G. Murty. A Constrained assignment problem. *The Arabian Journal for science and Engineering*, 16(2B):233-238, 1991.

Selected Papers in Proceedings of International Conferences

Chelly, A., I. Nouira, **A. B. Hadj-Alouane**, Y. Frein.   A stochastic model for analyzing the combined effect of demand uncertainty and carbon tax within the context of green supply chain design. The *7th IESM Conference*, Saarbrücken, Germany, October 11–13, 2017 (2nd **Best student paper award**)*.*

Mechmech, R., S. Harbi, **A. B. Hadj-Alouane**. Identifying and ranking of clearance chain management (CCM) strategies. The *7th IESM Conference*, Saarbrücken, Germany, October 11–13, 2017.

Farhat, M., A. Akbalik, N. Sauer, **A. B. Hadj-Alouane**. Procurement planning with batch ordering under periodic buyback contract. *IFAC* PapersOnLine 50-1 (2017) 13982–13986.

Brahmi, A., **A. B. Hadj-Alouane**, S. Sboui. Optimisation conjointe des flux physiques et financiers de la chaine logistique en difficulté de trésorerie. *11ème Conférence Francophone d'Optimisation et Simulation (MOSIM'16)*, Montréal, Québec, Canada, Août 2016.

Ben Arbia, S. W. Klibi, **A. B. Hadj-Alouane**. The Design of Flexible Production-Distribution Networks. International Conference on Information Systems, Logistics and Supply Chain ILS Conference, Bordeaux, France, June 1 – 4, 2016.

Frihat, M., C. Sadfi, **A. B. Hadj-Alouane**. Problème d'ordonnancement d'atelier dans un environnement incertain et polyvalent. *11ème Congrès International de Génie Industriel (CIGI'15)*, Québec, Canada, Octobre 2015.

Frihat, M., C. Sadfi, **A. B. Hadj-Alouane**. Optimization of Integrated Employee Timetabling and Hybrid Job Shop Shceduling under Time Lags Constraints. *Proceedings of the 2nd International Conference on Control, Decision and Information Technologies (CoDIT'14)*, Metz, France, November 2014.

Klibi W., **A. B. Hadj-Alouane**. Integrating Resilience in Stochastic Production-Distribution Network Design Models, *20th Conference of the International Federation of Operational Research Societies, IFORS 2014*, Bacelona, Spain, July 2014.

Hfaiedh, W., C. Sadfi, I. Kacem, **A. B. Hadj-Alouane**. An effective iterative lower bound algorithm for the single machine scheduling problem with unavailability constraint and release date jobs and tails for maximum lateness minimization. *Proceedings* of *CoDIT'14 International Conference*, Metz, France, November 2014.

Balma, A., N. Ben Hadj-Alouane, **A. B. Hadj-Alouane**. A heuristic for the Network Migration Scheduling problem. *Proceedings of the 5th International Conference on Modeling, Simulation and Applied Optimization (ICMSAO'13)*, Hammamet, Tunisia, April 2013.

Nouira, I., Y. Frein, **A. B. Hadj-Alouane**. Carbon emissions and product greenness considerations in supply chain design models. *Proceedings of the 5th International Conference on Industrial Engineering and Systems Management (IESM'13)*, Rabat, Morocco October 2013.

Ben Aicha S., **A. B. Hadj-Alouane**. Super facility versus chaining in demand allocation problems under disruptions. *Proceedings of MOSIM'12 International Conference*, Bordeaux, France, June 2012.

Ben Aicha S., **A. B. Hadj-Alouane**. Mitigating disruptions impacts using super facilities. *International conference on information systems, Logistics and Supply chain (ILS'12)*, Québec, Canada, August 2012.

Nouira I., Y. Frein, **A. B. Hadj-Alouane**. Impact de décisions logistiques sur la qualité environnementale des produits. *9ème Congrès International de Génie Industriel (CIGI'11)*, St-Sauveur Quebec, Canada, Octobre 2011.

Trabelsi, S., R. Larbi, **A. B. Hadj-Alouane**. Linear programming for the home health care problem. *Proceedings of PALS'11 International Conference*, Clermont-Ferrand, France, 2011.

Balma, A., **A. B. Hadj-Alouane**, N. Ben Hadj-Alouane. A Graph based model for Intelligent Network design. *Proceedings of MOSIM'10 International Conference*, Hammamet, Tunisia, May 2010.

Ben Taarit, N., **A. B. Hadj-Alouane**, F. Zeghal Mansour. A lagrangian heuristic method and an iterative approach for the inventory routing problem, *Proceedings of MOSIM'10 International Conference*, Hammamet, Tunisia, 2010.

Elabassi, S. B., **A. B. Hadj-Alouane**, S. Benjaafar. Flexibility chaining in location-allocation problems. International Conference on Information Systems, *Proceedings of ILS'10 International Conference,* Casablanca, Morocco, 2010.

Elabassi, S. B., S. Benjaafar, **A. B. Hadj-Alouane**. On the performance of flexibility chaining in location-allocation problems under disruption, *Proceedings of MOSIM'10 International Conference*, Tunisia, 2010.

Hammami, R., Y. Frein, **A. B. Hadj-Alouane**. Impacts of Lead Times Constraints on Global Supply Chain Decisions. *POMS 21st Annual Conference,* Vancouver, Canada May 7-10, 2010.

Hammami R., Frein Y., **A. B. Hadj-Alouane**. International supplier selection: Literature review and modeling guidelines. *Proceedings of ILS'10 International Conference,* Casablanca, Morocco, 2010.

Nouira, I., Y. Frein, **A. B. Hadj-Alouane**. Towards the design of a green supply chain: A literature review and the basis of an optimization model, *Proceedings of ILS'10 International Conference,* Casablanca, Morocco, 2010.

Balma, A., **A. B. Hadj-Alouane**, N. Ben Hadj-Alouane. A branch and price approach for capacity dimensioning and demand routing in SDH/WDM networks. *Proceedings of the 39th International Conference on Computers & Industrial Engineering (CIE39)*, Troyes, France, July 2009.

Ben Chihaoui, F., N. Dridi, **A. B. Hadj-Alouane**. Two-machine no-wait flowshop scheduling with availability. *Proceedings of CIE39 International Conference*, Troyes, France, July 2009.

Ben Taarit, N., F. Zeghal Mansour, **A. B. Hadj-Alouane**. A Lagrangian Heuristic Approach for the Inventory Rouing Problem. *Proceedings of CIE39 International Conference*, Troyes, France, July 2009.

Abdessalem, M., **A. B. Hadj-Alouane**, D. Riopel. A decision support system for selecting recovery operations of in-use products. *Proceedings of ILS'08 International Conference*, Madison, Wisconsin, USA, May 2008.

Hammami, R., **A. B. Hadj-Alouane**, Y. Frein. Supply chain design with transfer pricing in the context of delocalization. *Proceedings of ILS'08 International Conference*, Madison, Wisconsin, USA, May 2008.

Hammami, R., **A. B. Hadj-Alouane**, Y. Frein. Mise en œuvre d'un modèle logistique de délocalisation et approche de résolution. *Actes du 7éme Congrès Génie Industriel*, Trois-Rivières, Québec, Canada, Juin 2007.

Hammami, R., **A. B. Hadj-Alouane**, Y. Frein. A strategic-tactical model for the supply chain design in the delocalization context: Mathematical formulation and a case study. *International Conference of Production Research*, Chili, 2007.

Hammami R., Y. Frein, **A. B. Hadj-Alouane**. A Strategic Model for Supply Chain Design in the Delocalization Context. *IESM*, Beijing, China, 2007 (**Best student paper award**)*.

Hammami, S., P. Ladet, A. Ruiz, **A. B. Hadj-Alouane**. Approche hiérarchique flux patients-flux matériels pour le pilotage du plateau médico-technique. *Actes du 7éme Congrès Génie Industriel,* Trois-Rivières, Québec, Canada, Juin 2007.

Hammami, S., P. Ladet, A. Ruiz, **A. B. Hadj-Alouane**. Joint Replenishment for the operating room. *The 33rd International Conference on Operational Research Applied to Health Services*, Saint-Etienne, France, July 2007.

Ben Chihaoui, F., N. Dridi, **A. B. Hadj-Alouane**. Minimizing Lmax and Cmax in a job shop problem with sequence-dependent setup times. *Proceedings of IFAC Symposium on Information Control Problems in Manufacturing (INCOM'06)*, 2006.

Znouda E., N. Ghrab-Morcos, **A. B. Hadj-Alouane**. Un algorithme génétique pour l'optimisation énergétique et économique des bâtiments méditerranéens. *Actes de la Conférence Internationale MOSIM'06*, Rabat, Maroc, 2006.

Bouchriha, H., A. Mammou, S. D'Amours, **A. B. Hadj-Alouane**. Supply optimization for a pulp and paper mill network. *Proceedings of IESM'05 International Conference*, Marrakech, Maroc, 2005.

Hammami, S., **A. B. Hadj-Alouane**, P. Ladet, S. Kharraja. Approche pour la construction des plages flexibles. *Actes de la Conférence Internationale MOSIM'04, 2004.*

Znouda, E., N. Ghrab-Morcos , **A. B. Hadj-Alouane**. Optimisation énergétique de l'enveloppe des bâtiments méditerranéens à l'aide des algorithmes génétiques. *Congrès Français de Thermique, SFT*, Presqu'île de Giens, France, 2004.

Jebali, A., **A. B. Hadj-Alouane**, P. Ladet. Operating room scheduling. *Proceedings of the International Conference on Industrial Engineering and Production Management*, Porto, Portugal, 2003.

Hadj-Alouane, A. B., S. Hajri. A genetic algorithm for an assignment problem with fuzzy data. *Proceedings of the 4th International Industrial Engineering Conference*, Aîx-Marseille, France, 2001.