Bugra Alkan

Member – Institution of Mechanical Engineers (IMECHE)
Automation Systems Group, WMG, University of Warwick, Coventry, CV4 7AL, UK
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Education

June 2014-Present,
PhD in engineering WMG, University of Warwick, Coventry, United Kingdom,

May 2009 and May 2012,
MSc in mechanical engineering (First class honour with distinction)**,** Department of Mechanical Engineering, İzmir Institute of Technology, Izmir, Turkey.

Work experience

January 2015-Present,
Project Engineer
Fully Distributed Systems (FDS) Ltd., Coventry, United Kingdom,

February 2012-June 2014,
Research Assistant
Department of Mechanical Engineering, Bursa Technical University, Bursa, Turkey,

Research and Teaching Interests

Design theory;
Multidisciplinary design optimisation, six sigma analysis, statistical quality control, design of experiments, response surface methodology, lean manufacturing, meta-heuristics algorithms, axiomatic design theory, design for manufacturing and assembly (DFMA) and Design for automatic assembly (DFAA).
Manufacturing systems;
Design of manufacturing systems (planning, control and networking), complexity and performance analyses, capacity planning, statistical process control and monitoring, robust design, discrete event simulations and petri nets modelling.
Manufacturing process planning;
Assembly and materials joining, manufacturing concept planning, factory layout planning and analysis, workflow simulations, walk path assembly planning, plant design optimization, mixed model line balancing, process simulations, ergonomics simulation and assessment of production assembly tasks and resource planning.
Cyber Physical Systems;
Intelligent manufacturing, software-intensive industrial automation, IEC 61499 distributed system control, service oriented architectures, software complexity metrics.

Latest publications

- B. Alkan et al. (2016f). Complexity in manufacturing systems and its measures: A literature review and framework for development, submitted to Journal of Manufacturing Systems, (In peer-review)
- B. Alkan et al. (2016e). Systemic complexity modelling in evaluation of manual assembly processes in virtual manufacturing environments, submitted to Industrial Ergonomics, (In peer-review)
- B. Alkan et al. (2016d). Complexity modelling in component-based automation control systems using virtual engineering approach, submitted to Computers and Industrial Engineering, (In peer-review)
- B. Alkan et al. (2016c). Design evaluation of automated manufacturing processes based on complexity of control logic. In: 26th CIRP Design Conference, Stockholm, Sweden, 15-17 Jun 2016, Published in: Procedia CIRP (In press)
- B. Alkan et al. (2016b). A lightweight approach for human factor assessment in virtual assembly designs: an evaluation model for postural risk and metabolic workload. In: 6th CIRP Conference on Assembly Technologies and Systems (CATS), Gothenburg, Sweden, 16-17 May 2016. Published in: Procedia CIRP, 44, 26-31.
- B. Alkan et al. (2016a). A model for complexity assessment in manual assembly operations through predetermined motion time systems. In: 6th CIRP Conference on Assembly Technologies and Systems (CATS), Gothenburg, Sweden, 16-17 May 2016. Published in: Procedia CIRP, 44, 429-434.
- Ahmad, M, Alkan B, Ahmad B, Harrison R, Vera D, Meredith J O, and Bindel A. A framework for automatically realizing assembly sequence changes in a virtual manufacturing environment. In: 26th CIRP Design, Stockholm, 15-17 June 2016. Published in: Procedia CIRP (In press)
- Ahmad, M, Alkan B, Ahmad B, Vera D, Harrison R, Meredith J O, and Bindel A. The use of a complexity model to facilitate in the selection of a fuel cell assembly sequence. In: 6th CIRP Conference on Assembly Technologies and Systems (CATS), Gothenburg, Sweden, 16-17 May 2016. Published in: Procedia CIRP
- Ahmad M, Ahmad B, Alkan B, Vera D, Harrison R, Meredith JO, and Bindel A. Hydrogen fuel cell pick and place assembly systems: Heuristic evaluation of re-configurability and suitability. In: 49th CIRP Conference on Manufacturing Systems (CIRP-CMS 2016), Stuttgart, Germany, 25-27 May 2016. Published in: Procedia CIRP

Selected Awards and Research Fellowships

2016 Best Paper Award, CIRP Conference on Assembly Technologies and Systems, 16-18th May, Sweden,
2016 Research Grant from EPSRC, Under Knowledge Driven Configurable Manufacturing (KDCM) project (part of Innovate UK),
2014 Ph.D. Scholarship Award, Republic of Turkey Ministry of National Education,

References:
Available on request.