



Call issued March 2022

## Postdoctoral Fellowship in Manufacturing Automation and Robotics

Closing Date - Will remain open until filled.

We are looking for two postdoctoral fellows to join the Interdisciplinary Center for Intelligent Manufacturing and Robotics. The current research focus of the group is on intelligent system design, automation, and manufacturing using Industry 4.0 principles and robotics in its various configuration. The successful candidates will conduct research in autonomous robotic system design and development, hands-on prototyping, programming, sensors integration and analysis, and intelligent process planning and optimization for offsite construction and manufacturing processes. The candidates must have a research focus, evidenced through published peer-reviewed articles or thesis, in one of the following areas:

1. Cyber Physical Manufacturing/Production Systems
2. Digital Twin Systems for Manufacturing and others
3. Modeling, simulation, and process optimization for robot-based operations
4. Autonomous robotics: design, path planning and programming
5. Optimization of robotic system design and operations
6. Manufacturing process modeling, simulation and/or automation
7. Manufacturing Process Monitoring
8. Mechatronics (programming and control)
9. Industrial intelligent automation
10. Computer-Aided X in both Design and Manufacturing

For validation, the candidate will have access to the center facility as well as the department of Mechanical Engineering facility. The candidates will also have access to 3-axis CNC machines, 3-axis 3D printing technologies, 2D and 3D vision systems, and other various types of sensors, and more equipment planned to be acquired e.g. 5-axis robotics system, 3-axis CMM,..etc.

The current vacancy is a full-time position based in Dhahran, Saudi Arabia for 2 years that can be extended. The salary will be commensurate with the candidates's qualifications and experience.

### Candidate profile

The position requires a self-starting researcher with a proven record of accomplishment of publications. Applicants require an excellent understanding of design and manufacturing principles, CAD modeling, robotic design and simulation, programming, and the capability to carry out independent research. The candidate must also demonstrate strong verbal and written communication skills evident through high-quality journal publications in the research area. The candidate must be able to work and lead in a team-oriented environment. As a part of the project, the candidate will work with a multi-disciplinary team of researchers, graduate students, and industrial collaborators. The candidate must also be able to travel as per the projects' needs, following COVID-19 mandated travel and immigration restrictions noted by King Fahd University of Petroleum and Minerals. The ideal candidate shall have evidence of the following:



### Specialized Training & Skills

1. A Ph.D. in mechanical, civil, computer science or electrical engineering, or a field closely related to advanced manufacturing, robotics, and mechatronics
2. Expertise and research experience in one or more of the core areas described above
3. Established experience in systems design, modeling, and simulation of automated or robotic processes evident through published research
4. Experience in the application of CAD modeling and robotic programming and control
5. Proficiency in programming in MATLAB, C/C++/C#, Python, PLCs and in an established CAD/CAM software packages

### Preferred Skills

1. Prior experience working with machine learning, especially deep learning and neural networks
2. Prior experience with digital-twins and visualization tools
3. Knowledge of design methodologies and design optimization
4. Experience with robotic simulation software, such as RobotStudio

### How to Apply

The position is now open, and applications will be reviewed as they are received until the position is filled. To apply, the candidates may email the application package to

Dr. Samir Mekid ([irc-imr@kfupm.edu.sa](mailto:irc-imr@kfupm.edu.sa)) containing the following:

1. A cover letter
2. A detailed academic CV including a minimum of three references (including PhD supervisor)
3. Copies of degree transcripts
4. Copies of degree certificates
5. Passport copy
6. One page research statement showing your fit with the described areas and a plan for future research

KFUPM is located in Eastern Province of Saudi Arabia. KFUPM is ranked top 165 universities in the world ranking and top university in the region.

**We thank all applicants for their interest. However, only those individuals selected for an interview will be contacted.**

Check the website: [https://postdoc.kfupm.edu.sa/available\\_vacancies.html](https://postdoc.kfupm.edu.sa/available_vacancies.html)