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Profile summary

I am an enthusiastic and hardworking person with an interest in improving people's life quality. I have extensive experience as a product designer and developer as well as a lead product engineer managing global projects. I developed and characterised bio-inks for stem cell screening arrays as part of my PhD as well as optimising the inkjet printing process for such inks. I relish from collaborations with co-workers from different disciplines and cultures to develop new skills and solve new challenges. Keen to find a challenging and suitable position with an ambitious group/institution that offers opportunities for career development and advancement.

Work experience

January 2020 – To date RKS Industrial (Metrology division)
Engineering Manager

I am in charge of the reverse engineering and design projects of the metrology division. Optimisation of design processes. The design and manufacture of quality gauges and fixtures for diverse companies. Designing for CNC machining and 3D printing. I work in conjunction with the service and sales teams for the distribution of Creaform 3D Scanners as well as providing scanning services for quality and reverse engineering purposes to different industries. Provide courses and capacitation for different industries in design, reverse engineering and metrology software.

2011-2013 Villeroy & Boch (Bathroom and Wellness division)
Lead Product Designer and Developer for North America

Oversaw the product development and implemented 3D CAD modelling for new designs of washbasins, toilets and urinals for the Vitromex sub-brand. I also worked in conjunction with the Mettlach design team for the design and launch of new products to be manufactured in the Ramos Arizpe Plant. Another important role was being the link between the design and development headquarters (in Mettlach, DE), the manufacturing plants in Mexico and the North American marketing team (based in Ramos Arizpe, MX).

2008-2011 Johnson Controls, Inc. Center of Excellence South East Region
Product Design Engineer

I was hired as part of the Head Rest Solutions department to start a team of 3D modellers/designers to take on product engineering roles as well as on-site problem solving in the TechnoTrim Saltillo plant. Overall, I spent 1 year and 4 months giving support to the HRS department in Johnson Controls, Inc. headquarters in Plymouth, MI (USA) designing and developing new products such as novel plastic head-restraint inserts for General Motors and BMW in compliance with 202a safety requirements. I helped overseeing and coordinating design work for an offshore team in India while continuing my role as product designer/engineer. When required, I worked developing trim patterns for headrest covers.

As a product designer with product engineering responsibilities, I worked as part of large multidisciplinary and multicultural teams and clients, such as Ford, Chrysler, Honda, KIA, GM and BMW and oversaw and managed projects successfully. From August 2010 to my departure in June 2011 I took on the role of HRS lead product engineer for a Ford global project, having to oversee all the product engineering, design and project management for the second-row headrests in North America, South America, Europe, Russia and Asia, having to consider all safety and manufacturing requirements for each region.

While in Johnson Controls, Inc. I was trained in Kaizen and 5S's, Kepner-Tregoe problem solving and decision making, CATIA V5 and GD&T (geometric dimensioning and tolerancing).

Education

2014-2019 University of Liverpool, School of Engineering
Ph.D. Engineering
Thesis: Inkjet printing for high throughput screening arrays.
Supervisors: Dr. Kate Black, Dr. Jude Curran

Development and printing optimisation of novel inks for the manufacturing of cell screening arrays, focusing on a cell repellent polyethylene glycol (PEG) based coating to be deposited via inkjet printing to contain cell populations to specific locations; and the development of a range of cell active aminopropyl-triethoxysilane (APTES) based inks, to be deposited where the cell populations are to be contained, to evaluate their effect on human mesenchymal stem cells (hMSC). The inkjet printed cell screening arrays were characterised using microscopy, fluorescent microscopy, change in surface energy (via

measurements of water contact angle), chemical composition (via FTIR) and change in surface topography (via AFM). Cell populations were then evaluated in terms of viability and cell density after 28 days in culture.

2013-2014 University of Liverpool, School of Engineering
M.Sc.(Eng) Product Design and Management
Final project: Design of a monocoque-style wheel chair with curb climbing capabilities for third world countries, to be manufactured using a sugarcane bagasse composite base and bicycle spare parts.
Supervisors: Mr Dan Hibbert, Mr Stuart Burns

Modules included materials processing and selection, structural biomaterials, advanced manufacturing with lasers, product design, industrial design, project management, management of design and design for environment, manufacture and assembly.

2003-2007 Instituto Tecnológico de Saltillo
BSc Mechatronic Engineering
Industrial project: Development of an automated recognition and positioning of pour-in-place moulds through the use of bar codes for TechnoTrim Planta Saltillo (6 months internship).

Modules included material properties, mechanics of materials, mechanical design, mechanisms, computer aided design, manufacturing processes, electricity and magnetism, electrical machines, control of electrical machines, digital electronics, microcontrollers, digital control, computer science, visual programming, industrial interfaces and networks, robotics, advanced manufacturing, maintenance, sustainable development and statistics and quality control.

Awards and achievements

- Johnson Controls, Inc. Merit Award: For Customer Satisfaction and Employee Ingenuity.
- Johnson Controls, Inc. Merit Award: For 10-year Marker excellence. Toyota FMVSS202a Compliance Team
- University of Liverpool, Certificate of Excellence for exemplary academic performance and receipt of a merit scholarship to study at the University of Liverpool.

Laboratory skills

- Inkjet printing optimisation.
- Rheology measurements (viscosity, density, surface tension).
- Ink and material development
- Contact angle measurements.
- Spectroscopy analysis: FTIR.
- Atomic force microscopy (AFM).
- Optical microscopy.
- Fluorescent microscopy.
- Cell culture (focused on fibroblasts and hMSC).
- Cell fixing and dye.
- 3D Scanning
- Fused deposition modelling (FDM).
- Stereolithography.
- Competent in Microsoft office, Image J and 3D modelling software such as ProE, CATIA V5, SolidWorks and NX6-8.

Other skills developed: Process optimisation, analytical and observational skills, independence and confidence in the laboratory, good time management, enhanced my research skills through my PhD. Project management and parallel track of different projects as well as coordinating work load for different teams.

Activities and interests

Voluntary work: I have been involved in the organisation and participation of projects that bring school supplies and Christmas presents for kids in low-income communities in the state of Coahuila in Mexico.

Travel: I have been fortunate enough to travel to 26 countries over 3 continents and plan to continue increasing this number.

Languages: Keen interest in languages and fluent in Spanish, English and French.

References

Available on demand