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Mechanical Engineering  
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## Research interests

Ares A. Gomez-Gallegos is a **Mechanical Engineer** with an **MEng in Mechatronics**, from the Universidad Nacional Autonoma de Mexico, Mexico, and holds a **PhD in Materials and Manufacturing Engineering** from the University of Edinburgh, UK. Her main research activity is focused on **advanced manufacturing** with interdisciplinary experience in areas such as **operations management, materials science, and mechanical design**. She has hands-on experience in multiple manufacturing processes (manual and CNC tool-machines, WJC, ECM, SPF and AM) combined with high proficiency in **CAD/CAM/CAE, FEA, Multiphysics modelling and operations management modelling**. Her work has been presented in multiple national and international conferences. In parallel with her research activity, she has been also committed to teaching duties since 2008.

## Qualifications

University of Edinburgh  
31 Jan 2003 → 29 Aug 2015  
Award Date: 27 Jun 2016

National Autonomous University of Mexico  
1 Aug 2007 → 9 Apr 2010  
Award Date: 9 Apr 2010

## Employment

### Lecturer

Mechanical Engineering  
Glasgow Caledonian University  
Glasgow, United Kingdom  
10 Apr 2019 → present

## Research outputs

### Substituting Ti-64 with Aa2099 as material of a commercial aircraft pylon

Khalid, H. & Gomez-Gallegos, A. A., 1 Jun 2021, In: *Advances in Materials Science*. 21, 2, p. 77-92 16 p.

### Superplastic behaviour of Ti54M and Ti64

Mandal, P., Gomez-Gallegos, A., Gonzalez, D., Elrakayby, H. & Blackwell, P., 12 Oct 2020, *Proceedings of the 14th World Conference on Titanium (Ti 2019)*. MATEC Web of Conferences, Vol. 321. 6 p. 04028. (MATEC Web of Conferences).

### A study on modelling the superplastic behaviour of Ti54M alloy

Elrakayby, H., Gonzalez, D., Gomez-Gallegos, A., Mandal, P. & Zuelli, N., 30 Jun 2020, In: *Solid State Phenomena*. 306, p. 9-14 6 p.

### Studies on titanium alloys for aerospace application

Gomez-Gallegos, A., Mandal, P., Gonzalez, D., Zuelli, N. & Blackwell, P., 20 Jul 2018, In: *Defect and Diffusion Forum*. 385, p. 419-423 5 p.

### 3D multiphysics model for the simulation of electrochemical machining of stainless steel (SS316)

Gomez-Gallegos, A., Mill, F., Mount, A. R., Duffield, S. & Sherlock, A., Mar 2018, In: *International Journal of Advanced Manufacturing Technology*. 95, p. 2959-2972 14 p.

### **Al-Li Alloys – The Analysis of Material Behaviour during Industrial Hot Forging**

Bylya, O., Gomez-Gallegos, A., Stefani, N. & Blackwell, P., Dec 2017, In: *Procedia Engineering*. 207, p. 7-12 6 p.

### **A comparative study assessing the wear behaviour of different ceramic die materials during superplastic forming**

Gomez-Gallegos, A. A., Farrell, M., Zuelli, N. & Staiano, A., 19 Oct 2017, In: *Materialwissenschaft und Werkstofftechnik*. 48, 10, p. 983-992 10 p.

### **Surface finish control by electrochemical polishing in stainless steel 316 pipes**

Gomez-Gallegos, A. A., Mill, F. & Mount, A. R., Aug 2016, In: *Journal of Manufacturing Processes*. 23, p. 83-89 7 p.

### **Electrochemical machining: towards 3D simulation and application on SS316**

Gomez Gallegos, A. A., Jun 2016

### **Maquinado Electroquímico: fundamentos y simulación utilizando elemento finito**

Argelia, G. G. A., 30 Nov 2012, p. 103.

### **Investigación del proceso de corte por chorro de agua (wjc) y sus aplicaciones en micromecánica**

Ruiz-Huerta, L., Gomez-Gallegos, A. & Caballero-Ruiz, A., Nov 2009, *IX Congreso iberoamericano de ingeniería mecánica: Cibim9 libro de actas: 9th Ibero-American Congress of Mechanical Engineering*. Calero Perez, R. (ed.). Las Palmas: Universidad de Las Palmas de Gran Canaria

## **Awards**

### **Optimisation of Smart Precision Electrochemical Machining**

DeSilva, A., Gomez Gallegos, A. A. & Taggart, B.

Precision Tooling Services Ltd: £69,711.00, Innovate UK: £141,533.00

1/05/20 → 30/11/22

## **Projects**

### **Optimisation of Smart Precision Electrochemical Machining**

DeSilva, A., Gomez Gallegos, A. A. & Taggart, B.

Precision Tooling Services Ltd, Innovate UK

1/05/20 → 30/11/22