

# Curriculum Vitae

## Javier Sánchez

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## Bio

Javier Sanchez is currently Assistant Professor of Engineering Design at Tecnun, University of Navarra, Spain. He received his MS degree in Mechanical Engineering in 1995 from Tecnun, University of Navarra. In 2006 Javier received his PhD in Mechanical Engineering, focused in computational methods for the generation, manipulation and representation of tensile membrane structures in real time, in collaboration with the [civil engineering institute](#) at Tecnun.

He started his professional career in 1995 working in the cutting tools industry as Head of the technical office at Widia Valenite Iberica in Spain and Germany. His work was focus on special manufacturing processes for the automotive and aeronautic industry.

Javier joined Tecnun in 1999 to start his research and academic career in several fields such as Computer Graphics, Civil Engineering and manufacturing. His research activities include advanced parametric surface representation and construction, NURBS curve and surface fitting, surface interpolation and approximation, analysis of prestressed net and cables, formfinding of double-curved membrane structures, surface fitting for tensile structures models, [tensile membrane design software](#) and programming. His academic activities are related to Product Design methodologies, 3D solid and surface computer modeling techniques, covering all the stages of the product design process, from the conception of a product until its realization.

He founded the [Rapid Prototyping Laboratory](#) of Tecnun in 2004, introducing new techniques and technologies used in product design, such as clay modeling, rapid prototyping, rapid tooling, high speed machining, injection moulding, mold making, reverse engineering, free form modeling, face scanning and 3D medical imaging processing.

He is currently involved in several research and industrial projects related to product design and tensile membrane structures. Javier is very enthusiastic about bringing together creativity and engineering to generate new ideas to be used in other fields such as architecture, medicine, sculpture, music, cooking or any other that would appear.

## Educational Background

2006	Phd in Mechanical Engineering, Tecnun. Focused on computational methods for the representation of <a href="#">tensile membranes</a> in real time for Textile Architecture applications.
2004	Summer stay at <a href="#">University of Washington</a> . Seattle, USA. Phd Student
1995	M.S. in Mechanical Engineering at <a href="#">Tecnun</a> . School of Engineering. <a href="#">University of Navarra</a> , <a href="#">San Sebastian</a> , Spain
1994	BEng (Honours) Mechanical Engineering at <a href="#">Sheffield Hallam University</a> (U.K.). Visiting Student. Erasmus Program (EU)
1989	High School, Colegio La Salle, Burgos, Spain

## Professional Research Focus and Experience

1995-1996 Technical office at [Widia Heinlein GmbH](#). Cutting tools. [Lichtenau](#), Germany

1997-1999 Head of the technical office at [Widia Valenite Iberica](#), Vitoria, Spain.

1999-2007 [Tecnun](#). School of Engineering. [University of Navarra](#), [San Sebastian](#), Spain

- Assistant Profesor at Design Area of Mechanical Engineering Department, Tecnun.
- Head of Rapid Prototyping Laboratory at Tecnun. [www.tecnun.es/prototyping](http://www.tecnun.es/prototyping)
- Product Design, CAD/CAM/CAE. Wide experience in solid and surface modelling methodologies for conceptual and detailed design.
- Rapid Prototyping, Rapid Tooling & Mold design and manufacturing.
- Reverse Engineering & surface reconstruction.
- Computational methods for the representation of Tensile Membranes Structures. [www.tecnun.es/tensile](http://www.tecnun.es/tensile) . Tensinet Member.
- Collaborative global Product Design, PLM (Product Life cycle Management): EU/US funded Project in high education: PRESTIGE (PREparing Engineering Students To work In the Global Economy). Consortium of 7 EU&USA universities to collaborate in global product design. <http://www.ecsel.psu.edu/Prestige/>

## Publications

Sanchez, J., Serna, M. A.(2007). "Designing Textile Structures using generic CAD applications" in *Proceedings of Structural Membranes 2007*. Barcelona, Spain, 17-19 September 2007. pps

Sanchez, J., Serna, M. A. & Morer, P. (2007). "A Multi-Step Force-Density Method and Surface-Fitting Approach for the Design of Tensile Structures," *Engineering Structures* 29 (2007), 1966-1976

Sánchez, J. (2006). "Rapid Prototyping and Architecture" in *Proceedings of Rapid Prototyping Development Conference, RPD 2006*, Marinha Grande, Portugal, 13<sup>th</sup>-17<sup>th</sup> November 2006.

Sanchez, J., Serna, M. A. & Morer, P. (2006). "Using NURBS Fitting Techniques To Represent Tensile Structures," in *Proceedings of the Adaptable 2006. International Conference On Adaptable Building Structures*, Eindhoven, The Netherlands, 3-5 July 2006. pps

Sanchez, J., & Morer, P. (2006). "Innovación-Creatividad: una experiencia de la colaboración Empresa-Universidad", en XVIII Congreso Internacional de Ingeniería Gráfica. INGEGRAF 2006, 31 Mayo-2 Junio 2006, Sitges, Barcelona. pps

Sánchez, J., González, J. & Oyarbide, A. (2005). "Using Rapid Prototyping for Free-form Shapes in Architectural Scale Models," in *Proceedings of the International Association for Shell and Spatial Structures, IASS 2005*, Bucarest, Rumania, 6th-9<sup>th</sup> September 2005.pps

Richard F. Devon, Sven G. Bilén, and Javier Sánchez Sierra, and Peter Olf, "Teaching global engineering design" *15th International Conference on Engineering Design*, Melbourne, Australia, 14-18 August 2005.

Sanchez, J., Serna, M. A. & Morer, P. (2004). "Surface Fitting Approach for Tensile Membranes Design" in *Proceedings of the International Association for Shell and Spatial Structures*, IASS 2004, Montpellier, France, Sept.20-24,2004.pps

Devon R, Bilen S, McKay A, de Pennington A, Sanchez J, Serrafiero P "Integrated Design: What Knowledge is of Most Worth in Engineering Design Education?" *Proceedings of the MUDD Workshop IV, "Designing Engineering Education"*, Harvey Mudd College, Claremont, CA July, 2003

## Others

Born: September 1971, Murcia, Spain

Language skills: Spanish (mother language), English, German.