

Joan Cardona

Noise and Vibration Engineer



Summary

Experienced acoustic consultant, project manager and business developer with more than 11 years experience in noise and vibration control techniques applied to industry, environment, buildings and transportation. Researcher in railway induced vibration field, part time lecturer in MSc programme, regular lecturer in conferences and founding partner of a technology-based company.

Personal profile

Name: | Joan Cardona
Nationality: | Spanish
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Professional experience

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| 2008- | <p>AV Ingenieros. St. Cugat del Vallès (Barcelona, Spain).
Founding partner. Noise and Vibration Consultant.</p> <p>Duties and responsibilities:</p> <ul style="list-style-type: none">• Business development.• Project manager, from offer stage to project completion.• Negotiate and liaise with third parties (e.g. clients, contractors, architects, engineers, manufacturers, national authorities).• Mentoring junior staff. |
| 2002-2008 | <p>Acoustical and Mechanical Engineering Laboratory (LEAM). Technical University of Catalonia, UPC. Terrassa (Barcelona, Spain).
Researcher & Technological Promoter.</p> <ul style="list-style-type: none">• Application for national and international funded research projects: European Commission LIFE+ Program, Spanish Education Ministry, Spanish Science Ministry, others.• Noise mapping using in situ measurements and numerical modeling.• Transportation Noise & Vibration impact assessment.• Measurement surveys: noise, vibration, sound insulation, sound intensity, stroboscope light, multichannel equipment, FRF, modal analysis, others.• Countermeasures' design to reduce noise and vibration impact/levels.• Training courses on noise and vibration control.• Technical paper presentations to congresses and conferences. |

Duties and responsibilities:

- Research in advanced noise and vibration control techniques.
- Ph. D research in railway induced ground-borne vibration propagation.
- Noise mapping.
- Noise impact assessment: transportation and industrial noise.
- Vibration impact assessment due to railway.

2000-2001

SUMMA, Servicios de Ingeniería. Manresa (Barcelona, Spain)
Industrial Installation Engineer.

Duties and responsibilities:

- Industrial installation design: electrical, mechanical, gas.

Education

2006-

Ph. D in Mechanical Engineering

Technical University of Catalonia (Spain)

Prediction model for railway-induced ground-borne vibration propagation

1999-2002

Master of Science in Mechanical Engineering

Technical University of Catalonia (Spain)

1995-1999

Bachelor of Science in Electrical Engineering

Technical University of Catalonia (Spain)

Publications

J. Romeu, T. Pàmies, M. Genescà, J. Cardona. Local active noise attenuation in a small piston engine aircraft cabin. *Noise Control Engineering Journal*, 55(6), 516-525, 2007.

International conference presentations

J. Cardona, R. Arcos, R. Torres, M. Polo. *RECYTRACK project: elastomeric eco-friendly material based on end-of-life tires blended with organic bind resin for railway applications*. Internoise 2012, New York City (USA).

J. Cardona, J. Romeu, R. Arcos, A. Balastegui. *A ground-borne vibration assessment model for rail systems at-grade*. Internoise 2010, Lisbon (Portugal).

J. Solé, J. Cardona, J.I. Palacios. *Effect of railway structures upon pass-by vibration transmission*. Internoise 2010, Lisbon (Portugal).

J. Cardona, R. Arcos, J. Romeu, S. Jiménez, A. Balastegui. *Characterization of ground-borne vibrations due to the passage of trains over a viaduct*. Iberian Congress of Acoustics, Tecniacústica, 2009, Cadiz (Spain).

A. Balastegui, R. Arcos, J.I. Palacios, J. Cardona. *Surface vibration pattern induced by underground trains*. Internoise 2008, Shanghai (China)

J. Cardona, J. Romeu, A. Sanchez, M. Genescà. *The definition of the train as the source of vibration in the prediction of the vibration propagation*. Internoise 2006, Honolulu, Hawaii (USA)

J. Cardona, J. Romeu, M. Genescà, J. Solé. *Characterization of ground vibration caused by trains for different configurations*. Internoise 2005, Rio de Janeiro (Brazil).

G. Alarcon; J. Solé; J. Romeu; J. Cardona. *Test and prediction of free field vibrations caused by high-speed trains near the Spanish candidate Iler site*. Eleventh International Congress on Sound and Vibration, 2004. St. Petersburg (Russia).

J. Romeu, S. Jiménez, J. Cardona, R. Capdevila, T. Pàmies. *Three dimensional traffic noise simulation*. Transport Noise and Vibration 2002. St. Petersburg (Russia).

Most relevant R&D projects

Title: VIBRO-IMPACT: Prediction model development to assess the vibration-induced impact caused by public works on surrounding buildings.

Funded by: CDTI (Spanish Centre for Industrial and Technological Development)

Consortium: AYESA, AV Ingenieros

Budget: 556.031 €

Duration: 24 months (2012-2014)

Title: RECYTRACK: Elastomeric eco-friendly material based on end-of-life tyres blended with bind resin for railway applications

Funded by: European Commission. LIFE+ Program

Consortium: Acciona Infraestructuras, ADIF, LADICIM, AV Ingenieros

Budget: 1.583.981 €

Duration: 42 months (2011-2015)

Title: Vibration generation due to railway traffic

Funded by: Spanish Educational and Science Ministry. Torres Quevedo Program

Consortium: AV Ingenieros

Budget: 48.744 €

Duration: 24 months (2008-2011)

Title: Design and construction of vibration exciting mechanisms to dynamically characterization of railway superstructure

Funded by: Spanish Science Ministry. PROFIT Program

Consortium: AV Ingenieros

Budget: 48.744 €

Duration: 24 months (2008-2011)

Title: Development of a vibration prediction model to assess railway-induced vibrations

Funded by: Spanish Development Ministry

Consortium: Technical University of Catalonia (UPC)

Budget: 120.119 €

Duration: 24 months (2005-2006)

Title: High Quality Acoustic and Vibration performance of lightweight constructions
Funded by: UE-Research Program of the Research Fund for Coal and Steel
Consortium: Rautaruukki Oyj, Steel Construction Institute (SCI), Stålbyggnads-institutet (SBI), Centre Scientifique et Technique du Bâtiment(CSTB), Technical research Centre of Finland (VTT), Luleå University of Technology (LTU), Eurosteel Technologies (EST), Technical University of Catalonia (UPC)

Budget: 868.688 €

Duration: 36 months (2003-2006)

Title: Development of low-noise electric motors
Funded by: Spanish Science and Technology Ministry. PETRI Program
Consortium: ABB Automation Products - Motors Division, Technical University of Catalonia (UPC)

Budget: 72.000 €

Duration: 24 months (2003-2005)

Other information

Member of the Spanish Acoustical Society.

Paper's reviewer for technical journals.

Part-time lecturer in MSc Environmental programme at La Salle Barcelona.

Part-time teacher in noise and vibration short courses.

Technical sessions' chairman in some international congresses: Internoise 2006, ICA 2007.