

ACOUSTICS, APPLIED MECHANICS AND CAD RESEARCH LABORATORY

Contact details

Name	Acoustics, Applied Mechanics and CAD Research Laboratory	
Acronym	AMAC	
Logo		
Site	http://cm.utcluj.ro/cercetare--centre-de-cercetare,23,ro.html	
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Areas of expertise

Acoustics

- Physical acoustics, Industrial/Environmental noise and vibration control, Urban acoustics, Bioacoustics

Applied mechanics

- Mechanical vibrations, Machine dynamics, Analytical mechanics, Computational mechanics, Biomechanics

Computer Aided Design

- Surface and solid modeling, Parametric modeling, Theoretical foundation of CAD, Mechanical drafting, CAE

Team

Prof. Dr. Eng. Diana Ioana Popescu, Prof. Dr. Eng. Math. Nicolae Ursu-Fischer, Prof. Dr. Phys. Ioan Cosma, Lect. Dr. Eng. Lucia Margareta Ghioltean, Lect. Prof. Dr. Eng. Radu-Mircea Morariu-Gligor, Assist.Dr. Eng. Luminita Molnar, Drd.Eng. Iuliana Fabiola Moholea

Representative projects

“**Fundamental and applied research on the modernization of the vibrating plate compactors - design and execution**”, Managerial Agency for Scientific Research, Innovation and Technological Transfer, RELANSIN, (2001-2003)

“**Research and studies on perception, assessment, control and prediction of industrial noise**”, CNCSIS, A33, Ministry of Education and Research, (2004-2005)

“**Modelling, simulation and precision in the study of mechanical systems vibrations, with applications for crankshafts of internal combustion engines and piston compressors**”, CNCSIS A41-1049, (2004-2005)

“**Modelling, algorithms and precision in the study of mechanical systems vibrations**”, CNCSIS A-1259, Ministry of Education and Research, (2006)

“**Development of engineering models and methods for assessment and prediction of the environmental noise**”, PNII-Idei, (2007-2010)

Significant results

The most representative publications of the past 5 years:

1. Popescu, D.I., “Study of Particle Motion on a Helical Vibrating Surface”, The Third International Conference of Mechanical Engineering, Faculty of Mechanics, University of Craiova, 8-9 October 2015, Proceedings on CD, *Trans Tech Publication: Current Solutions in Mechanical Engineering, Applied Mechanics and Materials*, vol. 823, pp. 13-16, Jan. 2016, DOI 10.4028/www.scientific.net/Amm.823, ISBN-13: 978-3-03835-566-3.

2. Cosma, I., Popescu, D.I., "Phenomenological Modeling of Sound Field Generated by Transversal Vibrations of Strait-Lined and Cylindrical Sources", *Studia Universitatis Babeş-Bolyai, Physica*, LX, 2, 2015, pp. 33-41
3. Popescu, D.I., "Managing the Risks of Noise Exposure at Work", *ICSV22 - The 22nd International Congress on Sound and Vibration*, Florence, Italy, 12-16 July 2015, The International Institute of Acoustics and Vibration (IIAV), Acoustical Society of Italy, Proceedings on CD: Paper Nr. 360, ISBN: 978-88-88942-48-3, ISSN 2329-3675, 6 p.
4. Popescu, D.I., "Teaching Computer Aided Design for Engineering Students", *Acta Technica Napocensis, Series: Applied Mathematics, Mechanics and Engineering*, vol.58, Issue III, september 2015, pp. 331-336
5. Moholea, I.F., Popescu, D.I., Ursu-Fischer, N., "Contributions to the Study of the Masses Chaotic Movements of a Mechanical System", *Acta Technica Napocensis, Series: Applied Mathematics, Mechanics and Engineering*, vol.58, Issue III, 2015, pp. 435-440
6. I. A. Muscă, N. Ursu-Fischer, D. I. Popescu, „Determination of Equal Sound level Curves behind the Noise Barriers”, in *International Conference on Engineering Graphics and Design*, 13-15 June, Timișoara, 2013, pp. 17-20
7. D. I. Popescu, L. Ghiolțean, „Design Configuration under Parametric Control”, *International Conference on Engineering Graphics and Design*, 13-15 June, Timișoara, 2013, pp. 67-70
8. D. I. Popescu, I. F. Moholea, R. M. Morariu-Gligor, "Urban noise annoyance between 2001 and 2013 – study in a Rmanian City", in *Archives of Acoustics*, vol. 38, no. 2, 2013, pp. 205-210
9. Popescu, D.I., Alămoreanu, R., "Information and Warning on Road Traffic Noise by Visual Means", *Acta Technica Napocensis, Series: Applied Mathematics and Mechanics*, vol.56, Issue I, March, 2013, ISSN 1221-5872, pp. 19-28
10. D. I. Popescu, R. E. Tuns, I. F. Moholea, "The Urban Acoustic Environment - A Survey for Road Traffic Noise", in *Carpathian Journal of Earth and Environmental Sciences*, February 2011, vol. 6, no. 1, pp. 285-292

Book:

- Ursu-Fischer, N., "Elemente de mecanica analitica", Casa Cartii de Stiinta, Cluj-Napoca, 2015

Significant solutions:

- Development of specific methods for assessment and prediction of road and railway traffic noise
- Assessment of environmental and industrial noise impact on human
- Solutions to improve the urban acoustic environment and reduce the exposure to noise
- Noise maps

- Development of models, simulations and dynamical studies of vibrating machines: vibrating compactors, elevators, feeders and mills.

The offer addressed to the economic environment

Research and development	The research team is interested in new ideas for cooperation in the field of acoustics and vibrations, for completing projects aiming the assessment, prediction and reduction of pollution.
Consulting	Consulting in the fields of: <ul style="list-style-type: none"> - Acoustics - Noise mapping - Vibrations - Machine dynamics - Vibro-acoustic diagnostics - Computer aided design and engineering graphics.
Applied engineering services	<ul style="list-style-type: none"> - Assessment of noise and vibration - Computer aided drafting, design and engineering - 3D modelling
Training	CAD training courses (AutoCAD, Inventor) developed by authorised instructors of the Autodesk Authorised Training Centre in UTC-N