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Estera Vălean

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EDUCATION AND TRAINING

30/09/2021 – CURRENT Romania
PH.D. STUDENT Politehnica University of Timisoara, Faculty of Mechanical Engineering

Skills and expertise: Finite Element Analysis, Mechanics of Materials, Structural Analysis, Mechanical Properties, Additive Manufacturing
Mobility: NTNU-Trondheim (Norway) - 2 months.

Field of study Additive Manufacturing |

Thesis The effect of fiber reinforcement on the integrity of components obtained through Additive Manufacturing

2018 – 2021 Timișoara, Romania
MASTER Politehnica University of Timișoara, Faculty of Mechanical Engineering

Specialization: *Advanced Mechanical Engineering*

Studied subjects: Fatigue and Structural Integrity, Theory of Elasticity and Plasticity, Finite Element Method.

2014 – 2019 Timișoara, Romania
BACHELOR Politehnica University of Timișoara, Faculty of Mechanical Engineering

Specialization: *Mechanical Engineering*

Studied subjects: Strength of Materials, Materials Science, Materials Technology, Mechanisms, Vibrations, Mechanics and Dynamics, Technical Drawing, Mathematics, CATIA.

2010 – 2015 Timișoara, Romania
HIGH SCHOOL National College "Ana Aslan"

Profile: *Nature Sciences*
Studied subjects: Mathematics, Physics, Biology, Chemistry.

WORK EXPERIENCE

SIMULATION ENGINEER – VITESCO TECHNOLOGIES ENGINEERING – 08/2022 – Current – TIMISOARA, ROMANIA

Structural simulation, Thermomechanical simulation (take into account the fiber orientation - Digimat), Moldflow simulation, Materials calibration (thermoplastic and hyperelastic materials);

INTERNSHIP – VITESCO TECHNOLOGIES ENGINEERING – 07/2021 – 08/2022 – TIMISOARA, ROMANIA

Finite Element Analysis, Mechanical Properties, Modelling of elastomers, Materials calibration

WINTER SCHOOL – SIRRAM PROJECT, POLITEHNICA UNIVERSITY OF TIMIȘOARA – 23/01/2021 – 27/01/2021 – TIMIȘOARA, ROMANIA

Trends on Additive Manufacturing for Engineering Applications

Studied Subjects: Fatigue properties of metallic materials produced by AM, Experimental Fracture Mechanics, Simulation for additive manufacturing.

INTERNSHIP – FACULTY OF MECHANICAL ENGINEERING, STRENGTH OF MATERIALS LABORATORY – 06/2018 – 01/2021 – TIMIȘOARA, ROMANIA

Study of the impact application on the motor belt bracket using the Charpy hammer;
Numerical simulation of mechanical structures in Abaqus;
Study of crack propagation in different types of materials.

COURSE "APPLIED ENGINEERING" – S.C. CONTITECH ROMÂNIA S.R.L – 10/2017 – 06/2018 – TIMIȘOARA, ROMANIA

Studied subjects: Technical Drawing, Tolerances and Adjustments, Plastic Deformations. Deformation Devices, Automation, Bonding and Welding of Aluminium.

LANGUAGE SKILLS

Mother tongue(s): **ROMANIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	B1	B2	B1	B1	B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

SKILLS

Microsoft Office | Catia-V5 | Abaqus (FEM) | ANSYS WOrkbench | MathCad | MSC Digimat | Autodesk moldflow

DRIVING LICENCE

Driving Licence: B

AWARDS

Awards

- Diploma "Eminent Student 2018 ", from the University Horizons Association (Timișoara, Romania, 2018);
- Diploma for the article: "Evaluarea comportamentului mecanic la tracțiune al structurior auxetice", presented in the project: International Conference "Zilele Tehnice Studențești", Timișoara 2018;
- Special Prize "Lazăr Boleanțu", from the Politehnica University of Timișoara, at the national phase of the "C. C. Teodorescu" competition, for Strength of Materials (Iași, Romania, 2017);
- First place in the contest "C. C. Teodorescu", of Strength of Materials,at the national phase of the "C. C. Teodorescu" competition, for Strength of Materials (Iași, Romania, 12 May 2017);
- First place in the contest "C. C. Teodorescu", of Strength of Materials, local phase (Timișoara, Romania, 2017).

SCHOLARSHIP

Scholarships

- Scholarship of excellence;
- Merit scholarship.

PAPERS PRESENTED AT CONFERENCES

Papers presented at Conferences

E. Vălean, N. Florea, *Evaluarea comportamentului la tracțiune al structurilor auxetice*, ZTS Timișoara, Romania, 2018;
A. Murariu, **E. Vălean**, M. Buzdugan, L. Marsavina, *The strength of additive manufactured screws*, East Europe Conferennce on AM materials, Belgrade, Serbia, September 2021;
M. Buzdugan, **E. Vălean**, B. Galatus, D. Foltut, I. Duma, L. Marsavina, *The influence of temperature on the tensile mechanical properties of PPA*, TIMA21, Timisoara, Romania, November 2021;
D. Foltut, **E. Vălean**, L. Marsavina, *Influence of temperature on the tensile behaviour of FDM printed ABS at different spatial orientation*, 2nd International Workshop on Structural Integrity of Additively Manufactured Materials, Brno, Czech Rep., February 2022;
Foltuț, D., **Vălean, E.**, Dzitac, V., Batrîna, D.-Ş., Simoc, O., Pascal, D.-T., & Şerban, V.-A. (2023). Heat aging effect on tensile behavior at different strain rates of thermoplastic styrene elastomer. *Materials Today: Proceedings*, *78*, 257–262. https://doi.org/10.1016/j.matpr.2022.11.281;
Vălean, E., Foti, P., Razavi, S. M. J., Berto, F., & Marșavina, L. (2023). Static and fatigue behavior of 3D printed PLA and PLA reinforced with short carbon fibers. *Journal of Mechanical Science and Technology*, *37*(11), 5555–5559. https://doi.org/10.1007/s12206-023-2307-3;
Vălean, E., Foti, P., Razavi, S. M. J., Marșavina, L., & Berto, F. (2024). Effect of the notch opening angle on the quasi-static behavior of PLA and carbon fibers reinforced PLA realized through Fused Deposition Modelling. *Procedia Structural Integrity*, *56*, 58–64. https://doi.org/10.1016/j.prostr.2024.02.037;
Vălean, E., Foti, P., Berto, F., & Marșavina, L. (2024). Static and fatigue behavior of 3D printed smooth and notched PLA and short carbon fibers reinforced PLA. *Theoretical and Applied Fracture Mechanics*, *131*, 104417. https://doi.org/10.1016/j.tafmec.2024.104417;
Vălean, E., Foti, P., Razavi, S. M. J., Marșavina, L., & Berto, F. (2024). Effect of the notch opening angle on the quasi-static behavior of PLA and carbon fibers reinforced PLA realized through Fused Deposition Modelling. *Procedia Structural Integrity*, *56*, 58–64. https://doi.org/10.1016/j.prostr.2024.02.037;
Dzitac, V., Rusu, G. I., Gherman, V., **Valean, E.**, Vodă, M., & Șerban, V.-A. (2024). Obtaining antimicrobial polymer composites based on copper oxide nanoparticles for sports medical devices. *IOP Conference Series: Materials Science and Engineering*, *1319*(1), 012021. https://doi.org/10.1088/1757-899X/1319/1/012021;
Foltuț, D., Șoșoi, G.-I., **Vălean, E.**, Pospisil, J., Pascal, D.-T., & Șerban, V.-A. (2024). Impact of Aging on Tensile Properties of EPDM, TPV, and eco-TPV: A Comparative Study Across Diverse Environments. *IOP Conference Series: Materials Science and Engineering*, *1319*(1), 012022. https://doi.org/10.1088/1757-899X/1319/1/012022;
Foltuț, D., **Vălean, E.**, Șoșoi, G.-I., Pascal, D.-T., Pospisil, J., & Buzdugan, M. (2024). Comprehensive Study of EPDM Rubber Properties: Temperature-Dependent Stiffness, Tensile Behavior and FEA Calibration. *IOP Conference Series: Materials Science and Engineering*, *1319*(1), 012025. https://doi.org/10.1088/1757-899X/1319/1/012025;
Vălean, E., Marșavina, L., Galațanu, S.-V., Foti, P., & Berto, F. (2025). Effect of notches on static and dynamic bending of 3D printed PLA and PLA reinforced with short carbon fiber. Procedia Structural Integrity, 68, 955–961. https://doi.org/10.1016/j.prostr.2025.06.156;
Vălean, E., Marșavina, L., Galațanu, S.-V., Foti, P., & Berto, F. (2026). Are carbon fibres beneficial to improve mechanical and fracture properties of FDM printed composites? Engineering Fracture Mechanics, 332, 111791. https://doi.org/10.1016/j.engfracmech.2025.111791.

COMMUNICATION AND INTERPERSONAL SKILLS

Communication skills

- good diction and rich vocabulary, improved during the years of study;
- positive attitude, which helps others to listen to me and talk to me;
- sociable, open nature.