

**EUROPEAN  
CURRICULUM VITAE  
FORMAT**



**PERSONAL INFORMATION**

Surname(s) / First name(s)	<b>Assist. Prof. Basan Robert, D. Sc.</b>
Address(es)	Vukovarska 58, 51000 Rijeka
Telephone(s)	++385 51 651 530
Fax(es)	++385 51 651 416
E-mail(s), Web address(s)	<a href="mailto:robert.basan@riteh.hr">robert.basan@riteh.hr</a> <a href="http://www.riteh.hr/zav_katd_sluz/zvd_kons_stroj/djelatnici/rbasan_en.html">http://www.riteh.hr/zav_katd_sluz/zvd_kons_stroj/djelatnici/rbasan_en.html</a>
Nationality(-ies)	Croatian
Date of birth	29.11.1972.
Identification number from Records of Scientific Workers	<b>243803</b>

**WORK EXPERIENCE**

• Dates (from – to)	2000.-
Name and address of employer	Faculty of Engineering, University of Rijeka, Vukovarska 58, HR-51000 Rijeka, Croatia
Type of business or sector	Science and education
Occupation or position held	2009 → Assistant professor 2009 Senior teaching and research assistant 2006 – 2009 Teaching and research assistant 2004 → Head of the Laboratory for strain-gauge measurements (part of the Department of Mechanical Engineering Design) 2004 – 2008 Graduate Students Representative in the Faculty of Engineering Council 2000 – 2006 Scientific apprentice
Main activities and responsibilities	Scientific research, lecturing, professional work
• Dates (from – to)	1997.-2000.
Name and address of employer	FIBIS d.o.o., Mučići 25A, Jurdani, Croatia
Type of business or sector	Special purpose tool development and production
Occupation or position held	Development Engineer
Main activities and responsibilities	Design and construction of new tooling, planning, organising and introduction of new production schemes, creating written and electronic technical and organisational documentation

**INVOLVEMENT IN SCIENTIFIC AND RESEARCH PROJECTS**

• Dates (from – to)	2010 →
Title and type of project	Project „Development of mathematical model of rolling-sliding-contact fatigue crack initiation and growth“, international croatian-austrian scientific project
Organisations / project partners	Faculty of Engineering, University of Rijeka; FH Joanneum Graz; MU Leoben
Role/position	Project leader
• Dates (from – to)	2007 →
Title and type of project	Project „Materials, Durability and Load Carrying Capacity of Modern Gear Transmissions“ (Scientific project of Ministry of Science, Education and Sports of Republic of Croatia - Project Nr. 069-0692195-1796) (Part of Scientific Program Nr. 0692195 „Optimisation of Properties of Mechanical Engineering Constructions for Innovative Purposes“)
Organisations / project partners	Faculty of Engineering, University of Rijeka
Role/position	Project collaborator

• Dates (from – to)	2007 – 2008.
Title and type of project	Project „Laboratory for Precision Engineering and Micro- and Nanosystems“ (Project of The National Foundation for Science, Higher Education and Technological Development of the Republic of Croatia)
Organisations / project partners	Faculty of Engineering, University of Rijeka
Role/position	Project collaborator

• Dates (from – to)	2006 – 2007.
Title and type of project	Project „Influence of Low-Cycle Fatigue on Load Carrying Capacity of High Contact Ratio Gearing“, international croatian-slovenian scientific project
Organisations / project partners	Faculty of Engineering, University of Rijeka; Faculty of Mechanical Engineering, University of Ljubljana
Role/position	Project collaborator

• Dates (from – to)	2002 – 2005.
Title and type of project	Project „Research of Modern Gearing Transmissions with High Load Carrying Capacity“ (Scientific project of Ministry of Science, Education and Sports of Republic of Croatia - Project Nr. 0069019)
Organisations / project partners	Faculty of Engineering, University of Rijeka
Role/position	Project collaborator

• Dates (from – to)	2001 – 2003.
Title and type of project	Project „Influence of Stiffness on Load Carrying Capacity of High Contact Ratio Gearing“, international croatian-slovenian scientific project
Organisations / project partners	Faculty of Engineering, University of Rijeka; Faculty of Mechanical Engineering, University of Ljubljana
Role/position	Project collaborator

• Dates (from – to)	2000 – 2002.
Title and type of project	Project „Gear Transmissions with High Transverse Contact Ratio“ (Scientific project of Ministry of Science, Education and Sports of Republic of Croatia - Project Nr. 069007)
Organisations / project partners	Faculty of Engineering, University of Rijeka
Role/position	Project collaborator

## EDUCATION

Date	2000. – 2009.
Place of education	Rijeka, Croatia
Name and type of organisation providing education	Faculty of Engineering, University of Rijeka
Title or qualification awarded	D. Sc., mechanical engineering

Date	1991. – 1997.
Place of education	Rijeka, Croatia
Name and type of organisation providing education	Faculty of Engineering, University of Rijeka
Title or qualification awarded	M. Sc., mechanical engineering

Date	1987. – 1991.
Place of education	Rijeka, Croatia Science and Mathematics Program Secondary School in Rijeka
Name and type of organisation providing education	Science and Mathematics Program Secondary School in Rijeka
Title or qualification awarded	Mathematics-IT technician

## TRAINING

Year	2010.
Place of training	Rijeka, Croatia
Name and type of organisation providing training	IT Academy, University of Rijeka, Croatia
Principal subjects/Occupational skills covered	Course „UNISTAT-2“

Year	2009.
Place of training	Rijeka, Croatia
Name and type of organisation providing training	IT Academy, University of Rijeka, Croatia
Principal subjects/Occupational skills covered	Course „Project management“,

Year	2009.
Place of training	Rijeka, Croatia
Name and type of organisation providing training	IT Academy, University of Rijeka, Croatia
Principal subjects/Occupational skills covered	Course „E-learning in teaching practice“

Year	2008.
Place of training	Ljubljana, Slovenia
Name and type of organisation providing training	Faculty of Mechanical Engineering, University of Ljubljana
Principal subjects/Occupational skills covered	Material testing, Material behavior characterisation and modelling

Year	2007.
Place of training	Udine, Italy
Name and type of organisation providing training	International Centre for Mechanical Sciences – CISM
Principal subjects/Occupational skills covered	Advanced School in "Advances in Constitutive Relations Applied in Computer Codes"

Year	2006.
Place of training	Ljubljana, Slovenia
Name and type of organisation providing training	Faculty of Mechanical Engineering, University of Ljubljana
Principal subjects/Occupational skills covered	Material testing, Material behavior characterisation and modelling

Year	2003.
Place of training	Wien, Austria
Name and type of organisation providing training	Technische Universität Wien
Principal subjects/Occupational skills covered	Mechatronics, mechanical design

Year	2003.
Place of training	Ilmenau, Germany
Name and type of organisation providing training	Technische Universität Ilmenau, Fakultät für Maschinenbau
Principal subjects/Occupational skills covered	Seminar "Methoden um neue Ideen zu generieren"

Year	2003.
Place of training	Ilmenau, Germany
Name and type of organisation providing training	Tecnishe Universität Ilmenau
Principal subjects/Occupational skills covered	Mechatronics, design methodology

Year	2002.
Place of training	Ljubljana, Slovenia
Name and type of organisation providing training	Faculty of Mechanical Engineering, University of Ljubljana
Principal subjects/Occupational skills covered	FEA, fracture mechanics, gearing research

Year	2002.
Place of training	Rijeka, Croatia
Name and type of organisation providing training	University of Rijeka
Principal subjects/Occupational skills covered	Workshop "Discussion as a teaching method in higher education"

Year	2001.
Place of training	Graz, Austria
Name and type of organisation providing training	Technikum Joanneum GmbH
Principal subjects/Occupational skills covered	Fracture mechanics

Year	2001.
Place of training	Rijeka, Croatia
Name and type of organisation providing training	University of Rijeka
Principal subjects/Occupational skills covered	Workshop "Supporting Staff development to Improve Teaching and Learning Through a National Network"

**PERSONAL SKILLS AND COMPETENCIES**

Mother tongue(s)	Croatian
------------------	----------

Other language(s)

Language	English
Speaking	Excellent
Writing	Excellent
Understanding (listening and reading)	Excellent

Language	German
Speaking	Very good
Writing	Very good
Understanding (listening and reading)	Very good

Language	Italian
Speaking	Basic
Writing	Basic

Understanding (listening and reading) Basic

**SOCIAL SKILLS AND COMPETENCIES** Working and functioning as a part of the team  
Adaptability to live and work in different places and working surroundings

**ORGANISATIONAL SKILLS AND COMPETENCIES** Coordination and organisation of work and people

**TECHNICAL SKILLS AND COMPETENCIES**

- calculations of load capacity and durability of various machine elements and assemblies
- determination of load capacity of diferent machine elements by implementing FEA (ANSYS)
- preparation and writing of technical documentation and its translation from english and german to croatian language
- working with NI Data Acquisition systems and software
- technical measurements using strain gauges transducers
- operating standard and programming CNC machines
- programming using Pascal, Fortran and Borland Delphi programming languages and environments
- proficient with other software: AutoCAD, CATIA v5, Mechanical Desktop

**ARTISTIC SKILLS AND COMPETENCIES**

- web pages design
- graphical design
- DTP

**DRIVING LICENCE(S)** Category B

**ADDITIONAL INFORMATION** 2010 → Peer reviewer for Scientific Journal "Computational Materials Science"  
Member of European Structural Integrity Society (ESIS)  
Member of Technical Committee Nr. 529 of Croatian Standards Institute  
Member of Croatian Machine Elements Society  
Member of Academic club AKDMI

**ANNEXES** List of published work and articles

**SIGNATURE**

---

## LIST OF PUBLISHED WORK AND ARTICLES

**Textbooks**

1. Križan, Božidar; Basan, Robert.  
Polimerni konstrukcijski elementi, Rijeka : Zigo – Rijeka, Tehnički fakultet Sveučilišta u Rijeci, 2009.
2. Šercer, Mladen; Križan, Božidar; Basan, Robert.  
Konstruiranje polimernih proizvoda / Juraga, Ivan (ur.). Zagreb : Sveučilište u Zagrebu, 2009.

**Scientific papers in Journals cited in Current Contents database**

1. Franulović, Marina; Basan, Robert; Kunc, Robert; Prebil, Ivan.  
Automation of LCF material model parameters' identification. // Computational materials science. 48 (2010) ; 529-536
2. Franulović, Marina; Basan, Robert; Prebil, Ivan.  
Genetic algorithm in material model parameters' identification for low-cycle fatigue. // Computational Materials Science. 45 (2009) , 2; 505-510

**Scientific papers in other Journals**

1. Basan, Robert; Rubeša, Domagoj; Franulović, Marina; Križan, Božidar.  
A novel approach to the estimation of strain life fatigue parameters. // Procedia Engineering. 2 (2010) , 1 ; 417-426
2. Basan, Robert; Franulović, Marina; Smokvina Hanza, Sunčana.  
Estimation of cyclic stress-strain curves for low-alloy steel from hardness. // Metalurgija. 49 (2010) , 2; 83-86
3. Basan, Robert; Kunc, Robert; Franulović, Marina.  
Ponašanje normaliziranog i poboljšanog čelika 42CrMo4 u uvjetima monotonog opterećenja. // Engineering Review. 28 (2008) , 2; 23-30
4. Franulović, Marina; Basan, Robert; Križan, Božidar.  
Kritični položaj zuba HCR zupčanika s obzirom na odstupanja koraka na zahvatnoj crti. // Engineering Review. 28 (2008) , 2; 1-10
5. Križan, Božidar; Basan, Robert; Lovrin, Neven.  
A Contribution to the Optimal Choice of the HCR-Gears Regarding Frictional Losses. // International journal of applied mechanics and engineering. 7 (2002) ; 249-254

**Conference papers**

1. Basan, Robert; Franulović, Marina; Prebil, Ivan; Kunc, Robert.  
Strain-life behavior of different groups of metallic materials // Proceedings of The Ninth International Conference on Multiaxial Fatigue & Fracture (ICMFF9) / Carpinteri, A. (ur.). Parma, 2010. 639-646
2. Franulović, Marina; Basan, Robert; Kunc, Robert; Prebil, Ivan.  
Numerical modelling of fatigue damage in gears tooth root // Proceedings of The Ninth International Conference on Multiaxial Fatigue & Fracture (ICMFF9) / Carpinteri, A. (ur.). Parma, 2010. 623-630
3. Franulović, Marina; Basan, Robert; Kunc, Robert; Prebil, Ivan.  
Automation of LCF Material Model Parameters' Identification // Finite Plasticity and Visco-plasticity of Conventional and Emerging Materials / Khan, Akhtar S. ; Farrok, Babak (ur.). St Kitts : NEAT Press, 2010. 169-171
4. Basan, Robert; Franulović, Marina.  
Evolution of Stress Components at Involute Gears Teeth Flanks During the Mesh // Proceedings of the 3rd International Conference Power Transmissions '09 / Athanassios, Mihailidis (ur.). Thessaloniki : Sofia Publications, 2009.
5. Franulović, Marina; Križan, Božidar; Basan, Robert.  
Residual Stresses in Gear Tooth Root // Proceedings of the 3rd International Conference Power Transmissions '09 / Athanassios Mihailidis (ur.). Thessaloniki, Greece : Sofia Publications, 2009. 279-284
6. Basan, Robert; Franulović, Marina; Križan, Božidar.  
Numerical model and procedure for determination of stresses in spur gears teeth flanks // Mechanical Engineering SI 2008 - Proceedings of Papers / Starek, L. / Hučko, B. (ur.). Bratislava : Slovak University of Technology, 2008.

7. Basan, Robert; Franulović, Marina; Križan, Božidar.  
Development of Custom Gear Design and Modelling Software Solution // Proceedings of The 11th International Conference Mechanical Engineering SI 2007 / Onderova, Iveta. ; Horvat, Miroslav (ur.). Bratislava : Slovak University of Technology, 2007.
8. Basan, Robert; Franulović, Marina; Lovrin, Neven.  
Influence of HCR-Gears Geometric Parameters on Their Load Carrying Capacity and Frictional Losses // Proceedings of Papers of 48th International Conference of Machine Elements and Mechanisms Departments / Bošansky, M ; Koša, R. (ur.). Bratislava : Slovak University of Technology, 2007. 7-14
9. Franulović, Marina; Križan, Božidar; Basan, Robert.  
Calculation of Stresses in HCR Gears with Regard to Quality Grade // EAEC 2007, 11TH European Automotive Congress / Voith, Andras A. (ur.). Budimpešta : Diamond Congress, 2007.
10. Lovrin, Neven; Križan, Božidar; Basan Robert.  
Some considerations about the HCR gear's load distribution calculation // 48th International Conference of Machine Elements and Mechanisms Departments 2007 / Bošansky, Miroslav ; Koša, Radoslav ; (ur.). Bratislava : Slovak University of Technology in Bratislava, Faculty of Mechanical Engineering, 2007. 159-166
11. Franulović, Marina; Križan, Božidar; Basan, Robert.  
Calculation Methods of Load Carrying Capacity of Spur Gears // Advanced Engineering Design AED 2006 / Musilek, Ladislav (ur.). Prag, 2006.
12. Basan, Robert; Franulović, Marina.  
Application of Fracture Mechanics for Determination of Load Carrying Capacity of HCR Gears // Proceedings of The 16th International DAAAM Symposium "Intelligent Manufacturing & Automation: Focus on Young Researchers and Scientists" / Katalinić, Branko (ur.). Vienna : DAAAM International Vienna, 2005. 21-22
13. Franulović, Marina; Križan, Božidar; Basan, Robert.  
The Increase of Tooth Root Stresses on HCR Gears with Pitch Errors // International Conference on Gears 2005 : Proceedings / Höhn, Bernd-Robert (ur.). Düsseldorf : VDI Verlag GmbH, 2005. 1227-1241
14. Lovrin, Neven; Križan, Božidar; Basan, Robert.  
A contribution to the determination of the hertzian stress in high transverse contact ratio gears // International Conference on Gears : Proceedings / Hoehn, Bernd-Robert (ur.). Duesseldorf : VDI Verlag GmbH, 2005. 1761-1765
15. Basan, Robert; Križan, Božidar; Franulović, Marina.  
The Influence of the Gears Geometry on Value of the Force Acting on Tooth of HCR Gears // Proceedings of the 3rd DAAAM International Conference on Advanced Technologies for Developing Countries, ATDC '04 / Katalinić, Branko ; Veža, Ivica ; Bilić, Boženko (ur.). Split : Sveučilište u Splitu, Fakultet elektrotehnike, strojarstva i brodogradnje u Splitu DAAAM International, Vienna, 2004. 11-16
16. Basan, Robert; Lovrin, Neven; Križan, Božidar.  
A Contribution to The Analytical Determination of Tooth Root Stresses in High Transverse Contact Ratio Gears // The Eleventh International Conference on Machine Design and Production, Conference Proceedings / Akkok, Metin ; Erden, Abdulkadir ; Kilic, Engin S. ; Konukseven, Ilhan ; Tonuk, Ergin (ur.). Antalya : Middle East Technical University, Ankara, 2004.

### **Conference abstracts**

1. Basan, Robert; Siminiati, Dubravka.  
Modelling and simulation of pneumatic impact cylinder performance // 3rd International Conference on Computer Aided Design and Manufacturing - Book of Abstracts / Obsieger, Boris (ur.). Rijeka : Zigo Rijeka, 2005. 5-6
2. Franulović, Marina; Basan, Robert.  
The Application of Nonlinear Contact Analysis of Gears in Mesh // 1st International Conference on Computer Aided Design and Manufacturing - Book of Abstracts / Obsieger, Boris (ur.). Ičići : Ravelin, 2003. 23-24

### **Dissertation**

1. Basan, Robert.  
Fatigue and damage of the gear tooth flank / Doctoral thesis. Rijeka : Faculty of engineering, 06.03. 2009, 168 str.  
Mentors: Križan, Božidar ; Rubeša, Domagoj.