



PERSONAL INFORMATION

Nicolae BÂLC



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Date of birth 29/07/1963 | Nationality Romanian

ACTUAL EMPLOYER

• Date	1990
• Department	Manufacturing Engineering Department; Machine Building Faculty
• Profession	Engineer, Manufacturing Engineering, Professor
• Position held	Dean of the Machine Building Faculty
• Main activity	Teaching and Research
• PhD Coordinator	Yes
• Domain	Industrial Engineering

EDUCATION AND TRAINING

• Year	1987
• Name and type of organization	Polytechnic Institute of Cluj-Napoca, Faculty of Mechanics
• Title	Engineer
• Specialization	Manufacturing Engineering
• Year	1994
• Name and type of organization	Technical University of Cluj-Napoca
• Title	European Master of Science (Honour Degree)
• Specialization	Mechanical Engineering and Energy Management
• Year	2001
• Name and type of organization	Technical University of Cluj-Napoca
• Title	Doctor of Engineering
• Specialization	Industrial Engineering

TEACHING ACTIVITY WORK EXPERIENCE

COURSE LEADER	PROGRAM	YEAR
Non-traditional Technologies	Industrial Engineering	III
Rapid Prototyping	Industrial Design	IV
Design for Competitive Manufacturing	Master IVFC-Eng	I
Innovative Manufacturing for RPD	Master IVFC-Eng	II

SCIENTIFIC EXPERIENCE

- Non-traditional Technologies; Selective Laser Melting; Selective Laser Sintering; Water Jet Cutting; Investment Casting of Complex Metal Parts;
- Product Design for Competitive Manufacturing, / Innovative Manufacturing for Rapid Product Development, Industrial Applications of Rapid Prototyping;
- Medical applications of RP / Manufacturing of the customised medical implants.

PERSONAL SKILLS

Native language Romanian

Foreign languages

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	B2	B2	B2	B2
French	B2	B2	B2	B2	B2

SCIENTIFIC ACTIVITY

- **Scientific Coordinator** of 26 PhD Thesis (18 defended PhD thesis and 8 ongoing PhD thesis)
- **Patents:** 5; 2 international (registered in USA and Germany) and 3 national patents
- **15 books published** (8 as first author / editor)
- **160 published scientific papers**, in the last 10 years (**40 ISI indexed**, 38 BDI indexed and 42 published in other journals/volumes)
- **Reviewer** of the Rapid Prototyping Journal (ISI)
- **Chairman of the International Conference: MTeM 2013, MTeM 2015, MTeM 2017 and MTeM 2019:** „The 14th International Conference on Modern Technologies in Manufacturing”, 10-12 October, 2019, <http://www.mtem.utcluj.ro/>
- **Laureate of the Romanian Academy:** “Henri Coandă” prize of the Romanian Academy/2017, for publishing the book “Aplicațiile Medicale ale Tehnologiilor de Fabricație prin Adăugare de Material”.

INTERNATIONAL COOPERATION

- **Honorary Professor** of "Transylvania" University from Braşov (Senate decision from November 24th, 2000)
- **Research Associate** at Loughborough University (UK) (2 Research Contracts: in 2002 Work Permit E-766013 and in 2003 Work Permit E-865239), Dept. of Design and Technology
- **Visiting Academic** at Nottingham University (UK) - courses held: Rapid Prototyping, Design for Manufacture and Concurrent Engineering
- **Invited Professor** Nottingham University (UK), De Montfort University – Leicester
- **Invited Lecturer** at the universities from Poznan, Maribor, Debrecen, Miskolc, Viena and Rijeka (courses held within these universities)
- **Invited Speaker** at Dover Presidents Meeting in 2009 (DE-STA-CO Europe GmbH) (<http://www.dovercorporation.com/>), N. Bâlc: “Engineering resources in CEE, including Romania”, Warsaw, 3rd of March 2009, Poland.

MANAGERIAL EXPERIENCE

- **Head of Department:** for 12 years (2004-2016), at Manufacturing Engineering Department (Technical University of Cluj-Napoca)
- **Dean of the Machine Building Faculty:** from 2016 to the present
- **Coordinator/Director** of international research projects (Horizon 2020, FP7 și FP6) and national research projects (UEFISCDI, PN II – Partnerships , etc.). Examples: Horizon 2020: AMaTUC – No. 691787, Period: 3 years (01.01.2016-30.12.2018), Coordinator: Prof. Nicolae Bâlc (www.amatuc.com)
- **Coordinator of Manufacturing Engineering Bachelor Program** (Tehnologia Construcțiilor de Masini – TCM), which obtained the International Accreditation: ENAEE (European Network for Accreditation of Engineering Education) – www.enaee.eu
 - TCM Cluj: the 1st Program of Bachelor studies in engineering, from Romania, which received European accreditation: [http://eurace.enaee.eu/](http://eurace.enaee.eu) (search using filter by country - Romania);
- **Coordinator of Master Program** – Virtual Engineering and Competitive Manufacturing (in Romanian and English language), held in the last 10 years .

PUBLICATIONS

107 articles published in the last 10 years

(Examples from the last 10 years)

ISI Publications

1. Cosma, C; Kessler, J; Gebhardt, A; Campbell, I; **Balc, N.**,“ Improving the Mechanical Strength of Dental Applications and Lattice Structures SLM Processed”, Publisher: MDPI, ST ALBAN-ANLAGE 66, CH-4052 BASEL, SWITZERLAND, Volume: 14, Issue 4, Article no: 905, 2020, eISSN: 1996-1944, (ISI, FI: 2.972); DOI: 10.3390/ma13040905;
2. Perini, M; Bosetti, P; **Balc, N.**“ Additive manufacturing for repairing: from damage identification and modeling to DLD”, Rapid Prototyping Journal, Publisher: Emerald Group Publishing LTD, UK, Volume: 14, Issue 4, Article no: 905, 2020, ISSN: 1355-2546 / eISSN: 1758-7670, (ISI, FI: 2.801); DOI: 10.1108/RPJ-03-2019-0090;
3. Popan I. A.; Bocanet, V.; **Balc, N.**; et al.,“ Investigation on Feed Rate Influence on Surface Quality in Abrasive Water Jet Cutting of Composite Materials, Monitoring Acoustic Emissions”, Advances In Manufacturing Engineering and Materials, Book Series: Lecture Notes in Mechanical Engineering, Pa.: 105-113 : Int Conference on Manufacturing Engineering and Materials (ICMEM), SLOVAKIA, Published: 2019;
4. Cosma, C.; Moldovan, C.; Campbell, I.; **Balc, N.**, et al.,“ Theoretical Analysis And Practical Case Studies Of Powder-Based Additive Manufacturing”, Acta Technica Napocensis Series-Applied Mathematics Mechanics And Engineering Vol : 61, Issue: 3, Pag.: 369-378, Published: 2018;
5. Moldovan, C.; Cosma, C.; Berce, P.; **Balc, N.**“ Theoretical Analysis And Practical Case Studies Of Sla, Polyjet And Fdm Manufacturing Techniques”, Acta Technica Napocensis Series-Applied Mathematics Mechanics And Engineering, Vol : 61, Issue: 3, Pages: 401-408, Published: 2018;
6. Leordean, D, Dulescu, C, Marcu, T, Berce, P, **Balc, N.** “Customized Implants With Specific Properties, Made by Selective Laser Melting”, Leordean, D, Dulescu, C, Marcu, T, Berce, P, Balc, N, published in Rapid Prototyping Journal, Volume: 21, Issue 1, Pages: 98-104, 2015 – (ISI, FI:2,031); WOS:000349647500010;
7. Panc, N; Hancu, L; **Balc, N.** „Research Regarding the Improvement of the Performance of Rubber Dies”, WORLD CONGRESS ON ENGINEERING, WCE 2011, VOL I Book Series: Lecture Notes in Engineering and Computer Science Pages: 783-789, Published: 2011; WOS:000393011100155;
8. Radu, SA; Leordean, D; **Balc, N.**; Nemes, O, „Resin type influence on moulded parts final dimensions”, Studia Universitatis Babes-Bolyai Chemia, Volume: 60 Issue: 2 Pages: 219-228 Published: JUN 2015; WOS:000369161800021;
9. **Balc, N.**; Berce, P; Pacurar, R, „CAD For Optimal Scaling of the 3D Model, to Compensate the SLS Post-Processing Errors”, ANNALS OF DAAAM FOR 2008 & PROCEEDINGS OF THE 19TH INTERNATIONAL DAAAM SYMPOSIUM Book Series: Annals of DAAAM and Proceedings Pages: 63-64 Published: 2008; WOS:000262860100031;
10. Vilau, C; Moldan, D; **Balc, N.**; Leordean, D, „Researches on the buckling test of a tripod components used in emergencies”, Acta Technica Napocensis, Series-Applied Mathematics Mechanics And Engineering, Volume: 58 Issue: 2 Pages: 299-302, Published: Jun 2015; WOS:000387965200024;

- **BDI Articles:** 38 scientific papers, registered in international data bases (in the last 10 years)
- Articles published in **conference proceedings:** 42 scientific papers, scientific papers published publicate in the last 10 years (other than those indexed ISI and BDI)

RESEARCH GRANTS CONTRACTS

51 research contracts:

- **3 grants in international competition**, as a Project Coordinator
- **6 grants in national competition**, as a Project Coordinator

INTERNATIONAL

1. **Horizon 2020:** AMaTUC – No. 691787: „Boosting the scientific excellence and innovation capacity in additive manufacturing of the TUC-N”, period: 01.01.2016 – 30.12.2018, budget: 999.443 Euro, **Coordinator:** Prof. **N. Bâlc** (www.amatuc.com);
2. **Horizon 2020:** DiCoMI – No. 778068: „ Directional Composites through Manufacturing Innovation”, period: 01.03.2018 – 28.02.2022, budget: 1.426.500 Euro, **TUCN Coordinator:** Prof. **N. Bâlc** (<http://www.dicomi.eu/>);
3. **FP7** no. 295016: "Adm-ERA-Reinforcing Additive Manufacturing research cooperation between the Central Metallurgical Research and Development Institute and the European Research Area", period: 01.10.2011 – 01.10.2013, budget: 496.634 €, (**Team leader TUCN:** Prof. **N. Bâlc**), (<http://www.fp7-admera.org/>);
4. **FP6** “Optical 3D Metrology – Automated in-line metrology for quality assurance in the manufacturing industry” – OP3MET (Contract no. 3721 / 2006) – Co-operative Research Project, Partner – Prof. **N. Bâlc**;
5. “Center for Innovative Manufacturing” – international contract – 2005 – funded by KOICA (KOREAN INTERNATIONAL COOPERATION AGENCY), Coordinator: Prof. Dr. eng. Petru Berce (budget 325.000 USD), Coordonator of manufacturing WP: Prof. **Nicolae Bâlc** (Manufacturing WP Budget: 160.000 USD), finished in 2007;
6. **FP5 European project:** EVEN, "European Virtual Engineering Network", 13 partners from 11 EU countries (period: 2002-2003 – <http://www.even.tcd.ie>). Prof. **N. Bâlc** – employed by Loughborough University in that period;
7. **Postdoctoral Research**, contract at Loughborough University (England), title of Post (job): Postdoctoral research associate – Grade 1A, **Contract of Employment** – Prof. **Nicolae Bâlc**;
8. Contractor of 3 years **European Project** "National Pilot Centre for Continuing Education in Rapid Prototyping", S-JEP-12490-97, period: 15.12.1997-14.03.2001, budget: 252.000 €, **Coordinator – Prof. N. Bâlc**;
9. **International Contract** no. 28484/05.11.2012, between TUCN and KODEWA GmbH: „Research on developing of F1 car”, finished in 2013, **Director:** Prof. **Nicolae Bâlc**;
10. **International Contract** no. 3135/11.02.2010, between TUCN and DESTACO Europe GmbH: „Design a new version of a clamp and produce physical prototype”, finished in 2011, **Director:** Prof. **Nicolae Bâlc**.

NATIONAL (Examples)

1. **UEFISCDI, Bridge Grant** Project, (2 years) “Optimizarea tipăririi 3D pentru Aplicații Dentare Personalizate (OpTi-DeP)”, Contract no. 101BG/2016, Period: 01.10.2016-30.09.2018, Budget: 450.000 RON, **Project Coordinator:** Prof. **Nicolae Bâlc**;
2. **UEFISCDI, PP H2020** Project, (2 years), “Support AMaTUC”, Contract no. 11/2016, Period: 2016-2018, **Project Coordinator:** Prof. **Nicolae Bâlc**;

3. **UEFISCDI**, National Grant **PN-II-PT-PCCA-2013-4-0917**, "Implanturi cranio-faciale personalizate obtinute prin prototipare inovativa 3D din materiale compozite ranforsate cu fibra de sticla (PECIFCO)", Contract no. 115/2014, Period: 3 years (2014-2017), Budget: 250.000 RON, **Team Leader TUCN: Prof. N. Bâlc**
4. **UEFISCDI**, National Grant **PCCE** "New Biocompatible Materials for customized implants made by SLS and SLM (BIOMAPIM)" – contract nr. 5/2010, budget 6.790.297 RON; Consortium Director: Prof. Petru Berce, Team Leader – Prof. Nicolae Bâlc; www.biomapim.utcluj.ro;
5. **UEFISCDI** Grant "Rețea Inovativă de Fabricație" – **CEEX** Contract no. 41/2005, Budget 1.420.000 RON; Consortium Director: Prof. Petru Berce, **Team Leader: Prof. Nicolae Bâlc**, <http://www.iman.utcluj.ro> ;
6. **Grant CNCSIS – tip A** Project (3 years): "Cercetări privind utilizarea tehnicilor de FRP și a tomografiei computerizate la fabricarea implantelor ortopedice și maxilo-faciale", **Director – Prof. N. Bâlc** (Ref. 37118 / 2000, 37118 / 2001 - Cod CNCSIS – tema 26);
7. **Grant CNCSIS - tip A** Project (3 years): "Cercetări privind Fabricația prin Sinterizare Selectivă cu Laser", **Director - Prof. N. Bâlc**, (Ref. 33532 / 2003, 33385 / 2004 - Cod CNCSIS 406);
8. Contract no. 31716/20.12.2013, Cercetări privind fabricația unui manechin, pentru a simula tratamentul tumorilor. Budget: 29.000 lei, **Director: Prof. Nicolae Balc**;
9. **POSDRU Contract** no. 87/1.3/S/64234, Parteneriat transnational, pentru dezvoltarea învățământului preuniversitar tehnic prin aplicarea sistemului german de "Proiecte pentru lucrări practice" în atelierele școlare din România, Director: Conf.dr.ing. Radu A. Munteanu; **Long-term expert: Prof. Nicolae Balc**;
10. **POSDRU Contract** no. 89/1.5/S/52603 Multidisciplinaritate în domenii tehnice prioritare ale strategiei naționale de cercetare-dezvoltare-inovare. Director: Prof.dr.ing. Aurel Vlaicu; **Long-term expert: Prof. Nicolae Balc**;
11. **POSDRU Contract** no. 159/1.5/S/137516, „Parteneriat interuniversitar pentru excelență în inginerie – PARTING”, Director: Prof.dr. Călin Munteanu, **Long-term expert: Prof. Nicolae Balc**.

PATENTS, INTERNATIONAL / NATIONAL

INTERNATIONAL

1. Actuating Device – **USA patent**, owner: DE-STA-CO Company, **N. Bâlc**, D. Leordean, ș.a., Domain: Industrial Engineering, No. US9199358 B2, Date: 1 Dec 2015; <http://www.google.ch/patents/US9199358> ;
2. Betätigungsvorrichtung – **European patent**, owner: DE-STA-CO Company, D. Leordean, **N. Bâlc**, ș.a., Domain: Industrial Engineering, No. EP2433750 A1, Date: Mar 28, 2012; <http://www.google.com/patents/EP2433750A1?cl=en> ;

NATIONAL

3. Procedeu și dispozitiv de obținere a plăcilor din materiale compozite polimerice armate cu fibre, Bere P., Berce P., Nemeș O., **Bâlc N.**, No. A/00540/2012, Date: 29.05.2015, <http://pub.osim.ro/publication-server/pdf-document?PN=RO128093%20RO%20128093&iDocId=6900&iepatch=.pdf> ;
4. Metoda și dispozitiv de poziționare și fixare al cadrului circular neurochirurgical stereotaxic, **N. Balc** and A. Donca, No. RO129623-A2, Date: 30.07.2014, <http://apps.webofknowledge.com>;
5. Method and Composite Material for Ornamental synthetic plates manufacturing, Autori: E. Sabău, **N. Balc**, P. Bere, RO130062-A2, <http://research.utcluj.ro/index.php/cereri-de-brevete-2012-2015.html>.

20th of April 2020

Professor Nicolae BALC