Habil. Dr. Eng. **GAVRUS Adinel**

Associate Professor (Maître de Conférences des Universités **HC HDR)**

National Institute of Applied Sciences of Rennes - INSA Rennes
Department of Mechanical and Control Systems Engineering
INSA Rennes, 20, Av. des Buttes des Coësmes

Web Page: http://insa-rennes.academia.edu/AdinelGAVRUS

DIPLOMA & ACADEMIC EDUCATION LEVEL

From 2019 **Qualified Univ. Professor degree by *French Universities National Council (CNU – 60CNU)***
2014-2018 **Qualified Univ. Professor degree by *French Universities National Council (CNU – 60CNU)***
2009-2014 **Qualified Univ. Professor degree by *French Universities National Council (CNU – 60 CNU)***
2008- **Habilitation Degree to Manage Researches (*HDR Diploma in Mechanics*) – *Univ. Rennes 1, France***
1997 **Qualified Univ. Assoc. Professor degree by *French Universities National Council (CNU – 60CNU)***
1993-1996 **PhD Thesis - Materials' Sciences** *(Summa Cum Laude)* - ***Ecole Nat. Sup. des Mines de Paris (ENSMP), France***
1992-1993 **Research Master Degree** (*D.E.A – 3rd Ranked)* in ***Special Metallurgy & Materials – ENSMP, Paris, France***
1987-1992 **Eng. Diploma Degree** *(Diploma of Merit, 2nd Univ. Ranked)* ***Univ. of Galati, Eng. Mech. Faculty-TCM, Romania***
1982-1986 **Scientific Bachelor Degree - *High School « Vasile Alecsandri » (Mathematics & Physics), Galati, Romania.***

PROFESSIONAL EXPERIENCES

From Sept. 2015 **Promotion Assoc. Prof. HC** by ***French University National Council (CNU – 60 CNU)***
From Sept. 1997 **Assoc. Prof. (Maître de Conférences** des Universités**)** – ***INSA Rennes, France***
Dec. 1996-Aug.1997 **Associate Researcher** – ***ENSMP - MINES ParisTech, CEMEF, Sophia Antipolis, France***, post-doc
Nov. 1996 **Coordinator of France-Romanian Seminar***, University of Galati, Romania*
Oct. 1992-Nov.1996 **PhD Res.** – ***Materials Forming Center (CEMEF–ENSMP), Sophia Antipolis, France***, PhD student.
Jan. 1992-April 1992 **TEMPUS Training** – ***CEMEF - ENSMP, Sophia Antipolis, France***, engineering student M2.

*COMPETENCES (***MATERIALS SCIENCE, THEORETIC & NUMERICAL MECHANICS***)*

* Theoretic & Applied Mechanics of Continuum Media, Materials Forming Science, Mechanics Metallurgy
* Modelling of Fluid and Solid Material Flow (especially for Materials Forming Processes)
* Numerical Mechanics, Numerical Engineering Science, Optimization, Inverse Problems, Inverse Analysis
* Numerical Methods and Numerical Algorithms Developments:
  - Finite Element Modelling & Finite Element Analysis
  - Physical Parameter Identification by Inverse Analysis
  - Inverse Problem, Non-Linear, Structural and Operational Optimizations, Parameter's Sensitivity Analysis
  - Optimal Design and Integrated Design Approach "Experimental – Modelling – Optimization"
* Rheology and Tribology of Metallic Materials and Solid Polymers:
  - Formulation & Identification of Isotropic or Anisotropic Materials Constitutive Equations starting from Physical Mechanisms, Multi-Scale and Mesoscopic Thermo-Elasto-(Visco) Plastic Coupling
  - Experimental & Analytical Analysis for Static, Dynamic and Severe Deformation's Mechanical Tests
  - Numerical Inverse Analysis of Rheological and Tribological Tests on Material Forming Field
* Analysis of Materials Behavior Undergoing Complex Flow Path and Severe Loadings
* Finite Element Modelling & Optimization of Non-Conventional and Rapid Materials Forming Processes
* Well Knowledge of Scientific Software: Forge®, Cast3M, Abaqus, Isigth-Simulia, Marc, Ls-Dyna.

SCIENTIFIC PUBLICATIONS

ISI WOS H-Index = 8, SCOPUS Index = 8, Global h-index = 13, Number of Citations: 744 with **1 Book**, **5 Int. /Nat. Book Chapters**, **48 Articles in Int. Sci. Journals** (Peer-Review)**, 19 Articles in Nat. Sci. Journals** (Peer-Review), **66 Articles in Int. Conf.** (Peer-Review; **4 Invited Lecturer/1 Plenary Lecturer**), **37 Articles in Nat. Conf.** (Peer-Review).

PRIZES & AWARDS

2016-2020 **Research and Doctoral Supervisory Premium obtained by CNU – France (PEDR** classification **A)**
2010-2014 **Excellence Scientific Premium of MENESR – France (PES** classification **A)**
2013-2018 **Nomination in the *Year's Editions of Who's Who in the World***,
2013 **Nomination in the *Leading Engineers of the World 2013*, IBC Cambridge, England.**
2012-2013 **Nomination in the *30th Pearl Anniversary Edition of Who's Who in the World***, Ed. 2013, USA
2009 **Nomination in the *2000 Outstanding Intellectuals of the 21st Century*,** Ed. 2010
2008 **Nomination in the *25th Silver Anniversary Edition of Who's Who in the World,*** Ed. 2008, USA
1991 **First Prize *University Scientific Session***, Galati, Romania.
1989 **First Prize *University National Mathematics' Competition "Traian Lalescu",*** Bucharest, Romania.
1988 **First Prize *University National Mathematics' Competition "Traian Lalescu",*** Bucharest, Romania.
1986 **Award Mention *High School National Mathematics' Competition***, Arad, Romania (4th position).

SCIENTIFIC ASSOCIATIONS MEMBERSHIP

DYnamic of **MAT**erials Scientific Association **DYMAT**
European **S**cientific **A**ssociation for Material **FORM**ing (**ESAFORM**)
European **M**echanics **S**ociety (**EUROMECH**)
French **M**echanical **A**ssociation (**AFM** – Administration Council and International GTT Group Member)
International **U**niversity **A**ssociation for **S**cience and **T**echnology of ROmania (**UASTRO**)

SUPERVISOR OF PhD THESIS, RESEARCH'MASTER DISSERTATIONS AND RESEARCH' PFE TRAININGS

2008-2017 **Director** of 2 PhD Thesis – D-T. PHAM (2011), S. LIU (2017).
2012-2020 **Co-Director** of 2 PhD Thesis – L. RABEMANANJARA (2015), E. PIRVA (2018) (INSA-R Fr. - UPB Ro.), B. SAADE (1st Year Thesis 2019-2023 USJ Liban – INSA-R Fr).
2019-2020 **Scientific Director** of 1 Post-Doc USIAERO SAD-V1/UBL – M. YAICH-MEKKI (12 months 2019-2020),
1998-2008 **Co-Supervising** of 3 PhD Thesis – P. CAESTECKER (2003), S. DIOT (2003), B. DAVOODI (2006).
2010-2016 **Supervisor** of 4 PhD Thesis international trainings (6 - 12 months: 1 CSC – Chine, 1 ENI Sfax – Tunisia and 2 UE/FSE/POSDRU – Efficient, Romania).
2008 **Supervisor** of 2 PhD Thesis ERASMUS international trainings (3 months).
1998-2020 **Supervisor** or **Co-Supervisor** of 17 Research MASTER 2R trainings (3-4 months)
2001-2020 **Supervisor** of 9 International Young Researcher Trainings (Romania, Algeria, Cambodgia, Maroc),
1996-1997 **Co-Supervisor** of 2 engineering research trainings (3 months)
2004 **Supervisor** of 1 Research T.E.R University trainings (3 months).
2013-2020 **Supervisor** of 5 Research PFE ERASMUS trainings (3 months).
1997-2020 **Supervisor/Co-Supervisor** 39 Research PFE Diploma trainings - 5th Year GMA Department/INSA Rennes

PhD THESIS & RESEARCH MASTER DISSERTATION JURY

2007-2015 **Official Opponent** PhD Thesis: M. Apostol (2007) - Tampere Univ. of Tech., Finlande, S. ATLATI (2012) - Univ. of Lorraine/Univ. Mohammed 1ère, France/Maroc**,** N. SABKHI (2015) - Univ. de Lorraine, France
2018-2019 **Official Pre-Examiner** PhD Thesis J. RAMO (2019) - Tampere Univ. of Tech., Finlande
1998-2018 **Official Evaluator** PhD Thesis: Y. TILLIER (1998) - ENSMP (CEMEF) Paris, France, B. BOYER (2001) - ENSMP (CEMEF) Paris, France, P. CAESTECKER (2003) - INSA Rennes, France, B. DAVOODI (2006) - INSA Rennes, France, D-T. PHAM (2011) - INSA Rennes, France, L. RABEMANANJARA (2015) - Univ. Rennes 1/INSA Rennes, France, S. LIU (2017) -INSA Rennes, France, E. PIRVA (2018) – UPB, Romania.
2010-2017 **Member Half/Third Time Evaluation** PhD Thesis: V. CHEAN (2010), P. BRAMMER (2010) - Univ. of Rennes1, France, J. PRAQUIN (2011) - Univ. of Rennes 1, France, LABBE (2014) - Univ. of Rennes1, France, E. PIRVA (2015- 2017) - UPB Bucarest, Romania, G. VENET (2017) - ENSAM Metz, France
2013-2015 **Referent** PhD Thesis: N. BAROIU (2013)-Univ. UDJG Galati, F. BUCUR (2015) -ATM Bucharest, Romania
2019 **Member Jurys** – **Seminary of Doctoral School** (Ecole Doctorale) "Engineering Science" ("Science Pour Ingénieur") ED SPI - France – Ecole Centrale Nantes (5 Avril 2019, Jury 1 et Jury 8)
2020 **Member Scientific Committee of Doctoral School Scientific Conference** of UDJG - Roumanie – Univ. Dunarea de Jos de Galati (18 – 19 June 2020)
2010-2017 **Member Master 2R Evaluation Jury** - M2R MGC
2010-2020 **Dissertation Master 2R MGC and MMGC Official Opponent** (17)
2012-2015 **President Master 2R Dissertation's Jury** - M2R MGC (Jury A – 2012, Jury G – 2013, Jury B - 2015)

EUROPEAN, NATIONAL AND INDUSTRIAL RESEARCH PROJECTS

1995-1997 **French Research Team Member** of European Project COST 512 "*Modelling in Material Science and Processing Material",* France (CEMEF, Sophia Antipolis), Czech Republic (Brno Univ., Ostrava Univ.), Slovenia (Ljubliana Univ.), Swiss (Géneva).
2004-2008 **Research Team Member** of French National Network OPTIMUS Project "*High Speed Machining"*
2001- **Research Team Member** of Breizh Regional Research Group BREZMAT "*Materials Mechanics"* (INSA Rennes, UR1 Rennes, ENS Cachan-Rennes, UBS Lorient, ENSIETA – ENSTA Brest).
2008-2020 **Scientific Director** of **10 National Industrial Research Projects:** GEVELOT Extrusion Laval (5), OPTIVENT Rennes (1), AIRCRAFTED Paris (1), TECHNETICS GROUP-CEA – Maestral Lab. Pierrelatte (1), SODERA ARIANE Group Paris (1), Blast & Solutions (1) Paris, France.
1997-2005 **Research Team Member** of **4 National Industrial Research Projects:** PCI Citroën (1), A.B.S St Malo (1), AIRBUS St. Nazaire (1), GEVELOT Extrusion Laval (1), France.

SCIENTIFIC AND ACADEMIC NATIONAL & INTERNATIONAL COOPERATIONS

2001- **Integration** of MA2G/INSA Rennes- **Regional Mechanical Research Group BRESMAT,** Bretagne, France.
2001 Start of **Scientific Collaboration** with CSCDP research laboratory of ULBS Univ., Sibiu (Romania).
2006 Start of **Scientific Collaborations** with ITCM Laboratory of UDJG Univ., Galati (Romania).
2003 **Coordinator** Research Collaborations with Mechanical Lab. of Tampere Univ. of Technology (Finland).
2004-2008 **Integration** of MA2G/INSA Rennes in the **French National Network of Machining (OPTIMUS)**.
2005 **Visitor Researcher** on CSCDP Laboratory of ULBS Univ., Sibiu, Romania (one week).

2007 **Visitor Researcher** on Mechanical Res. Lab. of Tampere University of Technology - Finland (one week).
2006-2013 **Coordinator Bilateral Research Agreement** INSA Rennes (France) and UDJG Univ. Galati (Romania).
2008-2013 **Coordinator Bilateral Research Agreement** INSA Rennes (France) and ULBS Univ. Sibiu (Romania).
2011 **Invited Researcher** on the CSCDP Laboratory of ULBS Univ., Sibiu, Romania (one week).
2006-2011 **ERASMUS Teacher Trainings** at University of Galati, Romania (1 month/year).
2007-2012 **Invited Research. & Visitor Prof.** ITCM Laboratory of UDJG Univ., Galati, Romania (1 month/year).
2010-2020 **ERASMUS Teacher Trainings** Polytechnic University of Bucharest, Romania (two weeks/year).
2013-2018 **Responsible of Research/Teaching Cooperation Framework Agreement** between University Politehnica Bucharest (Romania) and INSA Rennes (France).
2016-2020 **Responsible Research/Teaching Cooperation Framework Agreement** between INSA Rennes (France) – l'Univ. Yahia Farès de Medea, Faculté Science et Technologie (Algeria).
2013-2018 **Invited Professor** OMTR Laboratory - University Politehnica Bucharest, Romania (one month/year).
2017-2018 **Invited Professor** Institut Technologique de Cambodge (ITC) – Bilateral Agreement KA107 Int. Cooperation Master 2R MMGC INSA Rennes – M&S ITC; contributions Partnership's Agreement KA108 (1 week).
2019-2020 **Invited Professor** Doctoral School of Univ. Dunarea de Jos de Galati (Roumanie) - 24 h Scientific Courses and Conferences (1 week).

SCIENTIFIC PEER REVIEW ACTIVITIES

Research Projects Evaluation

2007-10 **Member Expert Pool** CNCSIS (National Council of Scientific Research and Higher Education) – Romania.
2009-10 **International Expert** BNSF (Bulgarian National Science Found) of Education & Science Ministry – Bulgaria. Evaluation of 4 Scientific Projects in 2009 and Evaluation of 6 Scientific Projects in 2010.
2010-18 **Member Expert** EACEA/UE European Program ERASMUS (GEN-P2) & MUNDUS (GEN-P4).
2010-18 **Member Expert Pool** for European Research Framework Program, Data Base (CORDIS/FP7).
2010 **Short Term Expert** (6 months) for European Program POSDRU-Efficient - Doctoral School UDJG, Romania.
2011 **National Evaluator/Referee** ANRT-MENESR (France) for CIFRE Thesis Funding.
2013- **Member Expert Pool** for European Commission ECAS: HORIZON 2020 and ERASMUS+.
2014-20 **International Expert** of F.R.S-FNRS Belgium. Evaluation 8 Scientific Research Projects (Researcher Provider), 3 Scientific Research Projects (Qualified Researcher), 2 Scientific Research Project (Associate Researcher) and 2 Scientific Research Project (Equipment Credits).
2015 - **Member TAIEX Expert Pool Database** for Technical Assistance and Information Exchange Instrument of EU/European Commision.

Editorial Committee Member of International & National Journals and Conferences

2008 **Member Scientific Committee** and **Invited Lecturer** «12th Int. Symposium of Experimental Stress Analysis and Testing Materials », 24-25 Oct. 2008, Galati, Romania.
2008 **Member Scientific Committee** Annals of Univ. Dunarea de Jos de Galati, Fascicle V, indexed CSA& SUDOC.
2009 **Member Scientific Committee** Int. Conf. «New Technologies in Manufacturing», NEWTECH, 23-25 September 2009, Galati, Romania.
2009 **Member Scientific Committee** «The 2nd International Conference on Polymers Processing in Engineering», PPE, 22-23 October 2009, Galati, Romania.
2009 **Session Chairman** Section Synthesis and Properties of Polymers of Int. Conf. PPE, 22-23 October 2009, Galati, Romania.
2010 **Member Editorial Board** of the Engineering, Int. Journal of Scientific Research Publishing, ISSN: 1947-3931(Print) 1947-394X (Online), INSPEC Int. Database.
2010 **Session Chairman** Section Joining Mechanics 1 Int. Conf. AMPT 2010, 24-27 October 2010, Paris, France.
2011 **Member Scientific Committee** Int. Conf. «New Tredings in Environmental and Materials Engineering», TEME, 18-20 May 2011, Galati, Romania.
2011 **Member Scientific Committee** Int. Conf. «New Technologies in Manufacturing», NEWTECH 2011, 14-15 September 2011, Brno, Czeck Republic.
2012- **Member Editorial Board** of the American J. of Software Eng. and Applications, Int. J. of Science Publ. Group.
2012 **Member Scientific Committee** Colloque-ENSA Oujda, Maroc, Formation & Pédagogie : Partage d'expériences et innovations, Réseau ENSA & INSA, Maroc, 17 -18 avril 2012.
2012 - **Member Editorial Board** of Acta Universitatis CIBINIENSIS, Int. J. of Univ. Lucian Blaga Sibiu, ISSN: 1583-7149, Ed. Walter de Gruyter, indexé EBSCO, WorldCat OCLC….
2013 **Member Scientific Committee** Int. Conf. on «Advanced Manufacturing Engineering and Technologies», NEWTECH 2013, 27-30 October 2013, KTH Royal Institute of Technology in Stockholm, Sweden.
2013 **Member Scientific Committee** Int. Conf. «New Tredings in Environmental and Materials Engineering», TEME, 28-30 October 2013, Galati, Romania.
2013 **Member Scientific Committee** «The 3nd International Conference on Polymers Processing in Engineering », PPE, 7-8 November 2013, Sibiu, Romania.
2013 **Member Scientific Committee** «Int. Conf. on Power and Mechanical Engineering», CPME 2013, 3-5 December 2013, Engineering Information Institute, Sanya, China.
2013 **Member Editorial Board** of the Int. J. World of Engineering Sciences, EngineersPress.

2013 **Member Scientific Committee** «International Conference on Materials and Engineering Technology (MET2014) », 24-26 0ctober 2014, Indianapolis, Indiana, USA.

2014 **Member Editorial Board** of the Int. J. Communications in Applied Sciences, InfinityPress.

2015 **Member Scientific Committee** «Congrès Français de Mécanique (CFM 2015)», 24-28 August 2015, Lyon, France. **Co-Chairman** Session 05a: Réponses des mat. et structures aux sollicitations dynamiques rapides; **Chairman** Session 05b: Caractérisation exp. et num. du comportement des mat. lors des sollicitations rapides.

2016 **Member Editorial Board** of Int. J. of Mechatronics and Applied Mechanics (IJOMAM), Ed. National Institute of Research & Development in Mechatronics & Measurement Technique (INCDMNT), Bucharest, Romania.

2016 **Member Scientific Committee** and **Invited Lecturer** « Int. Conf. OPTIROB 2016 », 29 June-2 July 2016, Jupiter - Mangalia, Romania

2016 **Specialized Reviewer Committee** of the «22th Int. Conf. on Hydraulics, Pneumatics, Tools, Sealing Elements, Fine Mechanics, Specific Electronic Equipment & Mechatronics», HERVEX 2016, 9-11 November Baile Govora-Vâlcea, Romania.

2016 **Member Editorial Team** Special Issue CFM 2015 Mechanics & Industry Cambridge Int. J., EDP Sciences.

2017 **Member International Scientific Committee** «Int. Conf. on Applied Mathematics, Modelling and Statistics Application», 21-22 May 2017, Beijing, China.

2017 **Member International Scientific Committee** « Congrès International OPTIROB 2017 », 29 Juin-3 Juillet 2016, Jupiter, Mangalia, Romania.

2017 **Session Co-Chairman CIF Colloque International Francophone**, Congrès Français de Mécanique (CFM 2017), 28 August-1 September 2017, Lille, France.

2017 **Member International Scientific Committee** «8th Int. Conf. on Manufacturing Science and Education», MSE 2017, 7-9 June 2017, Sibiu, Romania.

2017 **Specialized Reviewer Committee and Invited Lecturer** «23th Int. Conf. on Hydraulics, Pneumatics, Tools, Sealing Elements, Fine Mechanics, Specific Electronic Equipment & Mechatronics», HERVEX 2017, 8-10 November Baile Govora-Vâlcea, Romania.

2018 **Keynote Speakers and Member Conference Chairs & Organising Committee** «13th Int. Conf. on Design, Modeling and Optimization in the field of Aerospace, Robotics, Mechanical Engineering, Manufacturing Systems, Bioengineering and Neurorehabilitation», Ed. by A. OLARU, SLS & OPTIROB'2018, 28 June - 2 July 2018, Tismana Club Hotel, Jupiter, Constanta, Romania.

2018 **Member Technical Committee 2018** «International Conference on Product and Industrial Engineering» – ICPIE 2018, 27-29 October 2018, Chengdu, China.

2018 **Member Technical and Organizing Committee** «International Conference on Cyber Systems on the fields of Aerospace, Robotics, Manufacturing Systems, Mechanical Engineering, Neurorehabilitation, Power Energy and Technology of Materials» – ICMERA 2018, 2-4 November 2018, Bucharest, Romania.

2018 **Specialized Reviewer Committee** «24th Int. Conf. on Hydraulics, Pneumatics, Tools, Sealing Elements, Fine Mechanics, Specific Electronic Equipment & Mechatronics», HERVEX 2018, 7-9 November Baile Govora-Vâlcea, Romania.

2018 **Member Editorial Board** Technology Quarterly Reviews, peer-reviewed International Journal of the Asian Institute of Research Engineering.

2019 **Member International Scientific Committee** «9th Int. Conf. on Manufacturing Science and Education», MSE 2019, 5-7 June 2019, Sibiu, Romania.

2019 **Member Conference Chairs & Organising Committee and Invited Lecturer** «14th Int. Conf. on Design, Modeling and Optimization in the field of Aerospace, Robotics, Mechanical Engineering, Manufacturing Systems, Bioengineering and Neurorehabilitation», Ed. by A. OLARU, SLS & OPTIROB'2019, 27 June - 1 July 2019, Jupiter, Constanta, Romania.

2019 **Co-Chairman** CFM 2019 - C5 Colloque franco-roumain en hommage au Prof. Cristian Teodosiu « Plasticité des matériaux polycristallins : mécanismes, modèles constitutifs, approches multi-échelles », 26-30 Août 2019, Brest, France

2019 **Member Conference Chairs & Organising Committee**, 10th Int. Conf. on the Artificial Intelligence in the fields of Aerospace, Robotics, Manufacturing Systems, Biomechanics, Neurorehabilitation, Mechanical Engineering, Power Energy and Technology of Materials, ICMERA 2019, 30 October - 2 November 2019, Bucharest, Romania.

2019 **Specialized Reviewer Committee** of «25th Int. Conf. on Hydraulics, Pneumatics, Tools, Sealing Elements, Fine Mechanics, Specific Electronic Equipment & Mechatronics», HERVEX 2019, 13-15 November 2019, Baile Govora-Vâlcea, Romania.

2020 **Member Conference Chairs & Organising Committee** «15th Int. Conf. on Design, Modeling and Optimization in the field of Aerospace, Robotics, Mechanical Engineering, Manufacturing Systems, Bioengineering and Neurorehabilitation», Ed. by A. OLARU, SLS & OPTIROB'2020, 2 July - 5 July 2020, Jupiter, Constanta, Romania.

2020 **Member Scientific Committee** Int. Conf. « New Technologies in Manufacturing », NEWTECH, 9-11 September 2020, Galati, Romania.

2020 **Member Topic Editorial Board** of Materials, Int. Journal MDPI Ed., Basel, Switzerland, WoS Indexing.

2020 **Member Reviewer Board** of Metals, Int. Journal MDPI Ed., Basel, Switzerland, WoS Indexing.

Scientific Articles Review

2003 **Peer Reviewer** Int. J. of Mat. Forming Proc., Int. J. published by HERMES Ed. (2 articles).
2009 **Peer Reviewer** « Int. Conf. «New Technologies in Manufacturing», NEWTECH 2009, 23-25 September 2009, Galati, Romania (3 articles).
2009 **Peer Reviewer** «Int. Conf. on Polymers Proc. in Eng.», 22 – 23 October 2009, Galati, Romania (2 articles).
2010-12 **Peer Reviewer** Engineering, Int. J. of Scientific Research Publisher, INSPEC Database (16 articles).
2011 **Peer Reviewer** Optics & Laser Technology, Int. J. ELSEVIER Ed., ISI Thomson Reuters (1 article).
2011 **Peer Reviewer** Int. J. of Mechanical Sciences, Int. J. ELSEVIER Ed., ISI Thomson Reuters (1 article).
2012 **Peer Reviewer** Int. J. of Machining and Machinability of Mat., Int. J. ELSEVIER Ed., ISI Thomson (1 article).
2012 **Peer Reviewer** Optics and Laser in Engineering, Int. J. publ. ELSEVIER Ed., ISI Thomson Reuters (1 article).
2012 **Peer Reviewer** « 2nd Int. Conf. on Advanced Design and Manuf. Eng. » (ADME 2012), 2-26 August 2012, Taiyan, China (1 article).
2013 **Peer Reviewer** Journal of Composite Materials, publ. by American Soc. of Composites, ISI Thomson (1 article).
2013 **Peer Reviewer** American J. of Software Eng. and Applications, Int. J. of Science Publishing Group (2 articles).
2013 **Peer Reviewer** Tribology International, Int. J. ELSEVIER Ed., ISI Thomson Reuters (1 article).
2013 **Peer Reviewer** Indian Journal of Engineering and Mechanical Science, ISI Journal (1 article).
2013 **Peer Reviewer** Int. Conf. on « Advanced Manufacturing Engineering and Technologies», NEWTECH 2013, 27-30 October 2013, KTH Royal Institute of Technology in Stockholm, Sweden (3 articles).
2014 **Peer Reviewer** Int. Conf. ASME «Manufacturing Science and Engineering Conference», MSEC2014, 9-13 June 2014, Detroit, Michigan, USA (2 articles).
2014 **Peer Reviewer** Engineering, Int. J. publ. by Scientific Research, INSPEC Int. Database (1 article).
2014 **Peer Reviewer** Experimental Techniques, Int. J. publ. by WILEY, ISI Thomson Database (1 article).
2014 **Peer Reviewer** J. of Applied Mathematics and Physics (JAMP), Int. J., INSPEC Int. Database (1 article).
2014 **Peer Reviewer** J. of Scientific Research and Reports (JSRR), Int. J. publ. of Science Domain Int. (1 article).
2014 **Peer Reviewer** American J. of Software Eng. and Applications (AJSEA), Int. J. of Sci. Publ. Group (1 article).
2014 **Peer Reviewer** Tribology International, Int. J. ELSEVIER Ed., ISI Thomson Reuters (2 articles).
2014 **Peer Reviewer** Engineering, Int. J. of Scientific Research Publischer (1 Book).
2015 **Peer Reviewer** American J. of Software Eng. and Applications (AJSEA), Int. J. of Sci. Publ. Group (4 articles).
2015 **Peer Reviewer** British Journal of Mathematics & Computer Science (BJMCS), Science Domain Int. (1 article)
2015 **Peer Reviewer** Continuum Mechanics and Thermodynamics (CMAT), Springer Int. Journal (1 article).
2015 **Peer Reviewer** Tribology International, Int. J. ELSEVIER Ed., ISI Thomson Reuters (4 articles).
2015 **Peer Reviewer** J. of Composite Mat. (JCM), Int. J. published by SAGE Ed., ISI Thomson Reuters (1 article).
2015 **Peer Reviewer** Shock and Vibrations, Int. J. publ. by Hindawi Publishing Corporation (1 article).
2015 **Peer Reviewer** Materials & Design (JMAD), Int. J. ELSEVIER Ed., ISI Thomson Reuters (1 article).
2015 **Peer Reviewer** International Journal of Applied Glass Science (IJAG) published by American Ceramic Society and Wiley Periodicals, ISI Thomson Reuters (1 article).
2015 **Peer Reviewer** Int. Journal of Mechanical Sciences, Int. J. ELSEVIER, ISI Thomson Reuters (1 article).
2016 **Peer Reviewer** Tribology International, Int. J. ELSEVIER Ed., ISI Thomson Reuters (1 article).
2016 **Peer Reviewer** American J. of Software Eng. and Applications (AJSEA), Int. J. of Science Publ. Group (1 article).
2016 **Peer Reviewer** International Journal of Mechanical Sciences (JAPSI), Int. J. of Int. Knowledge Press (1 article).
2016 **Peer Reviewer** Journal of Applied Research and Technology (JART), ELSEVIER (1 article).
2016 **Peer Reviewer** Journal of Composite Materials (JCM), ISI Thomson Reuters (1 article).
2017 **Peer Reviewer** Tribology International, Int. J. published by ELSEVIER, ISI Thomson Reuters (3 articles).
2017 **Peer Reviewer** Springer Edition (1 Book).
2017 **Peer Reviewer** Experimental Techniques (EXTE), Int. J. Ed. by Wiley, ISI Thomson Reuters (2 articles).
2017 **Peer Reviewer** 8th Int. Conf. on Manufacturing Science and Education – MSE 2017, "Trends in New Industrial Revolution", 7-9 June 2017, Sibiu, Romania (2 articles).
2017 **Peer Reviewer** Engineering, Int. J. published by Scientific Research, INSPEC Int. Database (1 article).
2017 **Peer Reviewer** Congrès Français de Mécanique (CFM 2017), Session C1, 28-Août – 1 Septembre 2017, Lille, France (5 articles).
2017 **Peer Reviewer** Journal of Composite Materials (JCM), ISI Thomson Reuters (1 article).
2017 **Peer Reviewer** Journal of Materials Eng. and Performances, Int. ASM Ed., ISI Thomson (Evaluation 2 articles).
2018 **Peer Reviewer** Exp. Techniques (EXTE), Int. J. Wiley, ISI Thomson Reuters (Evaluation 4 articles).
2018 **Peer Reviewer** J. of Materials Engineering and Performances Int. ASM, ISI Thomson (Evaluation 2 articles).
2018 **Peer Reviewer** Tribology International, Int. J. ELSEVIER, ISI Thomson Reuters (Evaluation 1 article).
2018 **Peer Reviewer** Advances in Mech. Eng., Int. J. SAGE Pub., ISI Thomson Reuters (Evaluation 1 article).
2018 **Peer Reviewer** Materials & Design, Int. J. ELSEVIER, ISI Thomson Reuters (Evaluation 1 article).
2018 **Peer Reviewer** Int. J. of Forming Proc., Int. J., SPRINGER, ISI Thomson Reuters (Evaluation 1 article).
2018 **Peer Reviewer** Journal of Manufacturing and Materials Processing, Int. J. MDPI, WoS (Evaluation 1 article).
2018 **Peer Reviewer** International Conference/Workshop on Materials Science and Mechanical Engineering – 2nd IWMSME 2018, 26-28 October 2018, Qingdao, Shandong Province, China (Evaluation 1 article).
2018 **Peer Reviewer** International Conference on Product and Industrial Engineering – ICPIE 2018, 27-29 October 2018, Chengdu, China (Evaluation 3 articles).

2018 **Peer Reviewer** Metals, Int. J. MDPI , WoS (Evaluation 1 article).
2018 **Peer Reviewer** Applied Sciences, Int. J. MDPI, WoS (Evaluation 1 article).
2019 **Peer Reviewer** Metals, Int. J. MDPI, WoS (Evaluation 6 articles).
2019 **Peer Reviewer** Exp. Techniques (EXTE), Int. J. WILEY, ISI Thomson Reuters (Evaluation 1 article).
2019 **Peer Reviewer** Engineering, Int. J. Scientific Research, INSPEC Int. Database (Evaluation 1 article).
2019 **Peer Reviewer** Tribology International, Int. J. ELSEVIER, ISI Thomson Reuters (Evaluation 1 article).
2019 **Peer Reviewer** Int. J. of Forming Processes, Int. J. SPRINGE, ISI Thomson Reuters (Evaluation 1 article).
2019 **Peer Reviewer** Journal of Composite Materials, Int. J. SAGE Pub, ISI Thomson (Evaluation 1 article).
2019 **Peer Sub-Reviewer** 9th Int. Conf. on Manufacturing Sci. and Education MSE 2019, 5-7 June 2019, Sibiu, Romania (Evaluation 2 articles).
2019 **Peer Reviewer** J. of Dynamic Behavior of Mat., Int. J. SPRINGER, ISI Thomson Reuters (Evaluation 1 article).
2019 **Peer Reviewer** Int. J. of Mech. Science, Int. J. ELSEVIER, ISI Thomson Reuters (Evaluation 1 article).
2019 **Peer Reviewer** J. of Mat. Eng. and Performances, Int. J. SPRINGER, ISI Thomson Reuters (Evaluation 1 article).
2019 **Peer Reviewer** Materials, Int. J. MDPI, WoS (Evaluation 1 article).
2020 **Peer Reviewer** Materials, Int. J. MDPI, WoS (Evaluation 1 article).
2020 **Peer Reviewer** Grasas-y-Aceites Int. J. of. Fats and Oil publié Instituto de la Grasa, WoS (Evaluation 1 article).
2020 **Peer Reviewer** Metals, Int. J. MDPI., WoS (Evaluation 3 articles).
2020 **Peer Reviewer** Engineering, Int. J. Scientific Research, INSPEC Int. Database Indexing (Evaluation 2 articles).
2020 **Peer Reviewer** Symmetry, Int. J. MDPI, WoS (Evaluation 1 article).
2020 **Peer Reviewer** Advances in Civil Eng., Int. J. HINDAWI, INSPEC, SCOPUS (Evaluation 1 article)
2020 **Peer Reviewer** J. of Mat. Eng. and Perf., Int. J. SPRINGER, ISI Thomson Reuters WoS (Evaluation 4 articles).
2020 **Peer Reviewer** Int. J. of Forming Proc., Int. J. SPRINGER, ISI Thomson Reuters WoS (Evaluation 2 articles).
2020 **Peer Reviewer** Exp. Techniques (EXTE), Int. J. WILEY., ISI Thomson Reuters WoS (Evaluation 2 articles).
2020 **Peer Reviewer** Int. J. of Mech. Science, Int. J. ELSEVIER Ed., ISI Thomson Reuters (Evaluation 2 articles).
2020 **Peer Reviewer** J. of Manufacturing and Mat. Processing, Int. Journal, MDPI, WoS (Evaluation 1 article).
2020 **Peer Reviewer** J. of Dynamic Behavior of Mat., Int. J. SPRINGER, ISI Thomson Reuters (Evaluation 1 article).
2020 **Peer Reviewer** Int. Conf. « New Technologies in Manufacturing », NEWTECH 2020, 9-11 September 2020, Galati, Romania (Evaluation 1 article).
2020 **Peer Reviewer** J. of Manufacturing and Mat. Proc, Int. J. MDPI Ed., WoS (Evaluation 1 article).
2020 **Peer Reviewer** Materials & Design, Int. J. ELSEVIER Ed., ISI Thomson Reuters (Evaluation 1 article).
2020 **Peer Reviewer** J. of Comp. Design and Eng., Int. J. ELSEVIER, ISI Thomson Reuters (Evaluation 1 article).

SCIENTIFICS SEMINARIES ORGANISATION

2008 **France-Romanian Seminary**: "Etude du comportement des structures métalliques en conditions sévères de déformation", Univ. of Galati, Romania, June 2008.
2010 **POSDRU Seminary** "Advanced Experimental and Numerical Methods in Engineering Design and Research", Faculty of Mech., Univ. Galati, European FSE Program "POSDRU – Efficient", Romania, 29 June-2 July 2010.
2011 **Scientific Seminary & Scientific Day** "Etudes Exp. et Numériques des Procédés de Formage Non-Conventionnels. Influence des Propriétés Mécaniques du Matériau et Méthodes d'Analyse et d'Identification", Amphi GC - LGCGM/PSM, INSA/UEB, Rennes, France, 23 September 2011.
2013 **Scientific Seminary** LGCGM/PSM/INSA Rennes/UEB, "Les techniques d'élaboration des mousses métalliques à faible point de fusion, avec une porosité uniforme, et études de propriétés physicochimiques et mécaniques", Amphi GCU - Insa Rennes, débat autour de l'Exposé du Conférencier Invité Abd-Elmouneim BELHADJ, Assoc. Prof. Univ. des Sciences et Tech. Houari Boumediene, LSGM, Bab-Ezzouar, Alger, 4 Fev. 2013.
2015 **Scientific Seminary** - LGCGM – INSA Rennes/UEB, Amphi GCU, Table ronde collaborations d'enseignement et recherche entre le LGCGM et les pays méditerranéens (via AFM, AUF, PHC…), restitution synthèse Conférence International Materials Characterization 2015 (21-24 Avril, Valencia, Espagne) et débat autour de la thématique " Modélisation multi-echelle et multi-mécanismes du comportement elasto-plastique des matériaux", Prof. Invité Kacem SAI de l'ENSI Sfax, Tunisie (environ 10 participants), 30 Avril 2015.
2015 **Organiser & Co-Chairman** Session 05a: Réponses des matériaux et des structures aux sollicitations dynamiques rapides, **Organiser & Chairman** Session 05b: Caractérisation expérimentale et numérique du comportement des matériaux lors des sollicitations rapides, Congrès Français de Mécanique (CFM 2015), Lyon, France, 24-28 Août 2015.
2016 **Organiser & Responsible** Workshop/Webinar, INSA Rennes – COMSOL Grénoble, "Optimisation, Parameter Sensitivity and Inverse Problems using COMSOL® Multiphysics" with participation of Comsol France Director Eric FAVRE, 16 November 2016, INSA Rennes, France (around 12 participants : 3 Assoc. Prof. , 8 students Master 2, Master 2R et 2 Speakers).
2018-19 **Co-Chairman** Colloque franco-roumain en hommage au Prof. Cristian Teodosiu : Plasticité des matériaux polycristallins : mécanismes, modèles constitutifs, approches multi-échelles, Congrès Français de Mécanique (CFM 2019), 26-30 Août 2019, Brest, France.

ADMINISTRATIVE & SCIENTIFIC RESPONSABILITIES

2020-24 **Nominated Member CNATDCU National Council of University Degrees Attestations, Diplomas and Certificates (CNU equivalent in France)** - Mechanical, Mechatronics and Robotics Engineering - National Appeals Commission, Order of the Ministry of Education and Research - MEC, Romania.

2019- **Elected Invited Member Administration Council (CA) of French Mechanical Association (AFM) as UASTRO Savant Society Representative** and GTT International Relations, Paris, France.

2018- **Elected Holder Member of INSA Rennes Technic Committee**

2017-20 **Nominated Member CNATDCU Diploma Appeals National Commission** n° 17 "Mechanical, Mechatronics and Robotics Eng.", Ministerial Order 3990_06-06-2017, Nat. Ministry Education & Scientific Research MENCS, Romania

2015 - **Member Orientation Committee** of SCIC ECOBATYS Pole (Eco-Building, Eco-Design, Energy Performances, Sustainable Development), Saint-Etienne en Cogles, Pays de Fougères, France.

2014-20 **Elected Vice-President** INSA Rennes 60ème CNU Local Commission.

2013-19 **Elected Member Administration Council (CA) of French Mechanical Association (AFM) as DYMAT Savant Society Representative** and GTT International Relations, Paris, France.

2012- **Member Research Committee of IAUR**, Rennes, France.

2012-16 **Elected Member GMA Department Council**, INSA Rennes.

2010-15 **Departments Responsible of Engineering Industrial & Research Trainings**

2009-15 **Member Works Group** for development of the « *Pôle Technologique Eco-Construction* » du Pays de Fougères, France – Regional Project ECOBATYS. Group Research Fields: Formation, Research & Innovation: Eco-Conception, Eco-Materials Analysis, Energetic Transition.

2008-12 **Member Works Group** « Research Quality Approach », INSA Rennes

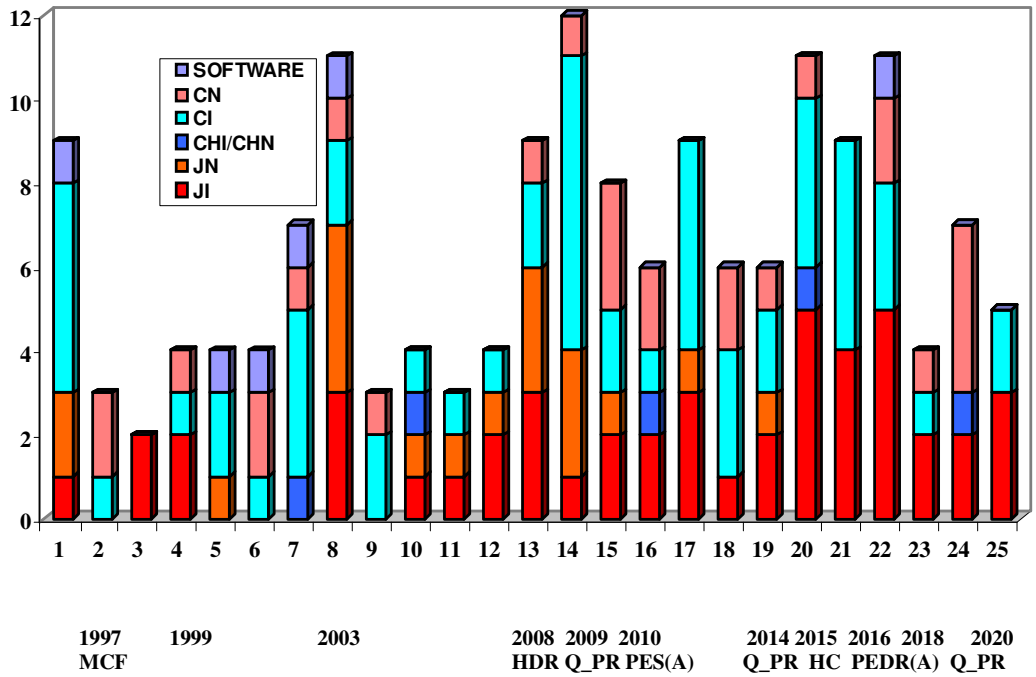
2005-09 **Elected Member GCGM Laboratory Scientific Council**, INSA Rennes

2005-07 **Member Suppliant of Scientific Council for 60th CNU section** at University RENNES 1

2003-05 **Member Suppliant of Scientific Council for 60th CNU section** at Ecole Centrale Nantes

2001-07 **Nominated Member Mechanics Center Council** (CCM) of INSA Rennes

SYNTHESIS OF SCIENTIFIC PUBLICATIONS



Global h-Index = 13, ISI WOS H-Index = 8, SCOPUS Index = 8 (with 744 Citations)

1 Book, 4 Int. Book Chapters (CHI), 1 Nat. Book Chapter (CHN), 48 Articles in Int. Scientific Journals (Peer-Review) (JI), 19 Articles in Nat. Scientific Journals (Peer-Review) (JN), 66 Articles in Int. Conferences (Peer-Review; 4 Invited Lecturer et 1 Plenary Lecturer) (CI), 37 Articles in Nat. Conf. (Peer-Review) (CN).

TEACHING RESPONSIBILITIES

2000-2002 **Teacher Responsible for Industrial Projects of GMA 5th Year (M2)/INSA Rennes**

1998-1999 **Teacher Responsible of 5th GMA Year (M2) /INSA Rennes**

2004-2020 **Contribution** and **Teaching Collaborations** to found **ERASMUS Agreements** between INSA Rennes, Romanian Universities (ULBS, UDJG, UPB, ATM), Finland Tampere Univ. and Slovenia Univ. of Ljubljana. **Supervisor of 12 ERASMUS Research Trainings (L3/L4 and M2R)**.

1997-2020 **Teacher Responsible** of 2 Courses – Metallic & Non-Metallic Materials Forming and Plasticity Theory (M2-44 h); **Teacher Participation** Master 2 Research (M2R); **Teacher Responsible** of the Course Mechanics of Materials Forming (M2R MGC/MMGC-24h – from 2005), Numerical Methods, Optimization & Inverse Problems (M2R MGC/MMGC-24 h – from 2012). **Teacher Participation** for tutorial seminaries & practical works on Materials Plastic Forming Theory (M2-24 h), Continuum Media Mechanics (L3/M1-50 h), Fluids Mechanics (L3/M1-44 h), Finite Element Method (L3/M1-16 h), Materials Strength (L3/M1-16 h), Vibrations (L3/M1-16 h) and Mechanics (L1-20 h).

1997-2020 **Supervisor of 26 Student's Research/Industrial or Transversal Projects (PI)** and **Co-Supervisor of 46 Students' 5th year Diploma Trainings Dissertations (PFE)** thus **37** linked to a research field.

1996-1997 **Supervisor of two engineering students' trainings** (3 months)

Nov. 1996 **Coordinator of a France-Romanian Seminary**, Materials Forming Theory & Applications, **University of Galati,** Romania – Material Forming center CEMEF of Mines Paris'Tech (two weeks)

TEACHING JURY

2012-2015 **Member GMA Department Jury** for the student's 5th year (M2)

2009 -2020 **Member INSA Jury** for the first year admission (L1) at INSA Group.

2010-2017 **Member MASTER Jury** for diploma validation and Research MASTER dissertations (M2R)

2012 **Member Jury** Engineering Sciences Olympiads – Bretagne – PSA Rennes

2012 **Member Jury** 3hd Scientific Days "Mesure, Modélisation et Simulation" – INSA Rennes

2008-2009 **Member MASTER Jury** for the Admission in the Research MASTER year (M2R)

2003-2004 **Member INSA Jury** for 3rd /4th years Engineering student's selection (M1; M2)

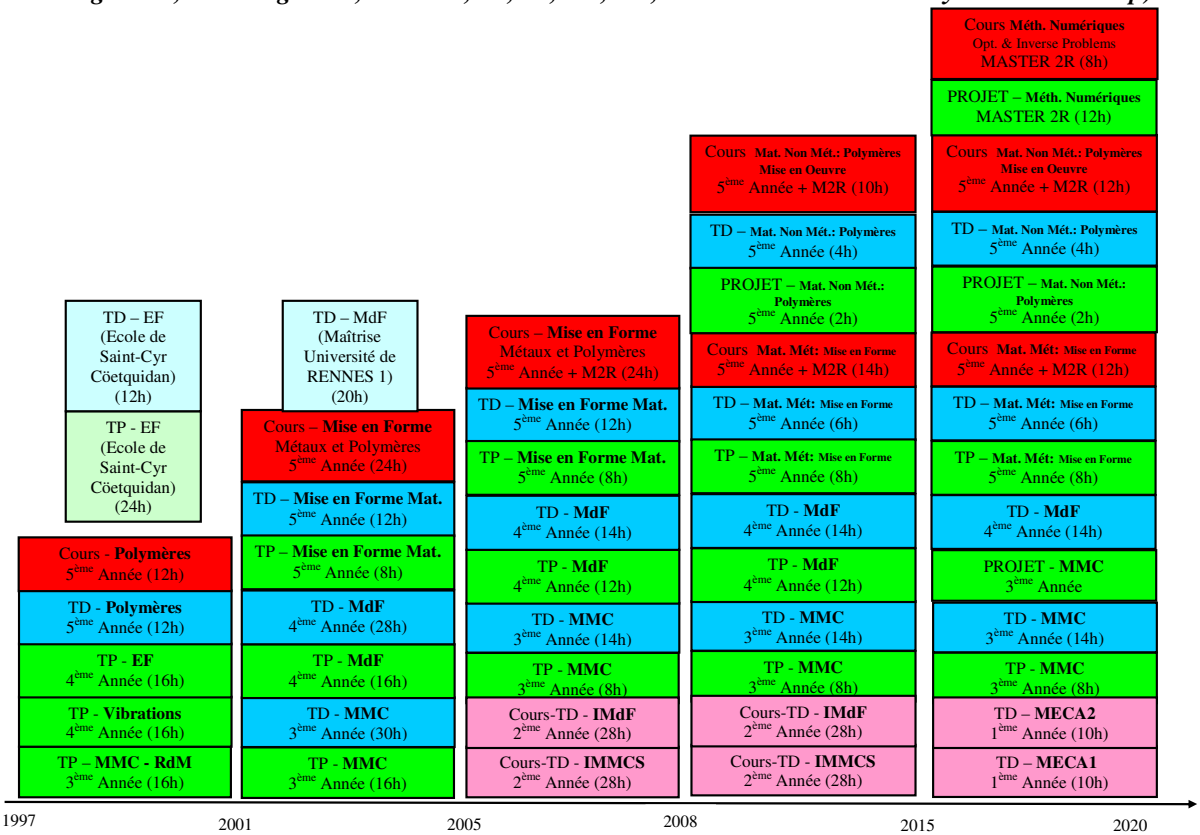
1999-2006 **Member GMA Department Jury** for 4th year student's 4th (M1)

TEACHING DOCUMENTS & WORKS

Total = 13 (Printed and Moodle pdf) - **3 Courses**, **2 Courses-Seminaries** (partial parts), **6 Tutorial Practical Works, 3 Tutorial Student's Projects**.

SYNTHESIS OF TEACHING ACTIVITIES – INSA Rennes

(Teaching Form, Teaching Field, Level L1, L2, L3, M1, M2, M2R and Time Volume by Student's Group)



(RdM – Material's Strength, IMMCS – Introduction of Solid Continuum Media Mechanics, MMC – Continuum Media Mechanics, IMdF – Introduction of Fluid Mechanics, MdF –Fluid Mechanics, EF – Finite Element, MECA – Mechanics, Mechanics of Material's Forming, Numerical Methods & Optimisation)

(**Cours** (Course), **TD** – Tutorial Seminary, **TP** – Practical Works)

Total Teaching Activity at INSA Rennes: around of 250 hours (equivalent TD) by academic year

LIST OF PUBLICATIONS

Thesis

A. GAVRUS - "Automatic Identification of Rheological Parameters by Inverse Analysis", PhD Thesis (Thèse de Doctorat), oct. 1996, 190 pages, Ecole Nationale Supérieure des Mines de Paris, ENSMP- CEMEF, Paris, France.

A. GAVRUS – "Behaviour Analysis of Metallic Materials undergoing Rapid Dynamic Loadings" ("Etude du comportement des matériaux métalliques en dynamique rapide"), Mémoire d'Habilitation à Diriger des Recherches (Research Habilitation Dissertation - HDR), mars 2008, Université de Rennes 1 – INSA Rennes, France.

Books

V. GAVRUS, **A. GAVRUS** – "Matematica Actualiara" (Actuarial Mathematics), Edition Evrika Eurodips, Romania, mai 2000, ISBN: 973-99593-4-2.

International Book's Chapters

[CHI 1] A. GAVRUS, V. GROLLEAU, S. DIOT – "Experimental and Numerical analysis of an impacted thin aluminium plate", pp. 477-486 in Book Series "*Structures under Shock and Impact VII (Structural Engineering/Structures and Materials - vol. 11)*", vol.63, WIT Transactions on the Built Environment, WIT Press, N. Jones, C. A. Brebbia & A. M. Rajendran (Ed.), Southampton, UK, 2002, ISBN: 978-1-85312-911-7.

[CHI 2] B. DAVOODI, **A. GAVRUS**, E. RAGNEAU – "A technique for measuring the dynamic behaviour of materials at elevated temperatures with a compressive SHPB", pp. 153-162, in Book Series *"Computational Methods and Experiments in Materials Characterisation II ((Materials & Manufacturing)"*, vol. 51, WIT Transactions on Eng. Sciences, WIT Press, C.A. Brebbia & A.A. Mammoli (Ed.), Southampton, UK, 2005, ISBN: 1-84564-031-4.

[CHI 3] A. GAVRUS, H. FRANCILLETTE – "An Anisotropic Behaviour Analysis of AA2024 Aluminium Alloy Undergoing Large Plastic Deformations", Chapter 3, pp. 50-68, in "Aluminium Alloys, Theory and Applications" Book, INTECH Int. Publ., Tibor Kvackaj & Robert Bidulsky (Ed.), Rijeka, Croatia, 2011, ISBN 978-953-307-244-9.

[CHI 4] Walid NASRI, **Adinel GAVRUS**, Afia KOUADRI-DAVID, Kacem SAI – "Experimental characterization and numerical modeling of the three dimensional anisotropic behavior of a thick sheet aluminum alloy AA2024-T351 using multi-scale approaches", 14 pages, Chapter in Book series "High Performance and Optimum Design of Structures and Materials II (Structural Engineering)", WIT Transactions of Built Environment, vol. 166, WIT Press, S. Hernández, C.A. Brebbia & W.P. de Wilde (Ed.), Southampton, UK, ISBN: 978-1-78466-143-4, 2016.

[CHI 5] E. PIRVA, **A. GAVRUS**, A. TUDOR, N. STOICA and S. CANANAU- "Anisotropie et Caractère Fractal du Frottement pour des Contacts Tribologiques AA2024-T351/ UHMWPE", Chapter in Book "Tribologie des procédés et fonctionalisation des surfaces", pp. 53-63, Presses des Mines, P. Montmitonnet, I. Lahouij (Ed), MINES ParisTech & PSL, Paris, ISBN: 978-2-35671-590-6, december 2019.

Computer Codes

TORRAO & TRACTRAO – Numerical FE Codes to identify automatically the thermo-visco-plastic behaviour using a complete Finite Element Modelling of the torsion or tensile test starting form an Inverse Problem formulation and an Inverse Analysis method based on Direct Differentiation of discretized FE equations (FORTRAN), 1992-1997 (CEMEF – Sophia Antipolis, Ecole Nationale Supérieure des Mines de Paris, Mines Paris Tech, France).

OPTPAR – Numerical Platform Software to solve Inverse Problems via Non-Linear Optimization & Parameter Identification Methods using Inverse Analysis & Non-Linear Regression Principles based on a Gauss-Newton second gradient algorithm with automatic direct problem software coupling (FORTRAN), 1997-2020 (INSA Rennes, France).

International Journals with peer review committee
(with * intermediate articles between Int. ISI Int. Journal and ISI Int. Conference Proceedings)

[JI 1] A. GAVRUS, E. MASSONI, J. L. CHENOT - *"An inverse analysis using a finite element model for identification of rheological parameters"*, Journal of Materials Processing Technology, vol. 60, pp. 447-454, 1996.

[JI 2] A. GAVRUS, E. MASSONI, J. L. CHENOT – *"The analysis of inelastic behaviour formulated as an inverse rheological approach"*, Measurement Science and Technology, vol. 9, n° 6, pp. 848-863, 1998.

[JI 3] A. GAVRUS, E. MASSONI, J. L. CHENOT – *"Identification du comportement rhèologique par analyse inverse"*, Eur. J. of Comp. Mechanics (Revue Européenne des Eléments Finis), vol.7, no 1-2-3, pp. 23-38, 1998.

[JI 4] A. GAVRUS, E. MASSONI, J. L. CHENOT - *"The rheological parameter identification formulated as an inverse problem"*, Inverse Problems in Science and Eng. (Inverse Problems in Eng.), vol. 7, Issue 1, pp. 1-41, 1999.

[JI 5] A. GAVRUS, E. MASSONI, J. L. CHENOT – *"Thermoviscoplastic parameter identification formulated ad an inverse finite element analysis of the hot torsion test"*, Steel Res. (Steel Res. Int.), vol. 70, no. 7, pp. 259-268, 1999.

[JI 6] S. DIOT, **A. GAVRUS**, D. GUINES, E. RAGNEAU - *"Identification of a steel compression behaviour: from quasi static approach to dynamic one"*, Mechanics & Industry, Vol. 4, no 5, pp.519-524, 2003.

[JI 7] A. GAVRUS, E. RAGNEAU, P. CAESTECKER – *"Analysis of a constitutive model for the simulation of dynamic forming processes"*, International Journal of Forming Processes, vol. 6, n° 1, pp. 33-52, 2003.

[JI 8] H. FRANCILLETTE, **A. GAVRUS**, R. A. LEBENSOHN – *"A constitutive Law for the Mechanical Behaviour of Zr 702α"*, Journal of Materials Processing Technology, Vol. 142/1, pp. 43-51, 2003.

[JI 9] H. FRANCILLETTE, **A. GAVRUS**, J-L. BÉCHADE - *"Study of the mechanical behaviour of zirconium 702α in correlation with the texture determined by X-ray diffraction"*, Metallurgical Research & Technology (International Journal of Metallurgy - Revue de Métallurgie), EDP Sciences, n° 12, pp 1179-1183, 2003.

[JI 10] B. DAVOODI, **A. GAVRUS**, E. RAGNEAU – *"An experimental and numerical analysis of the heat transfer problem in SHPB at elevated temperatures",* Meas. Sci. Technol. 16, pp. 2101-2108, 2005.

[JI 11] S. DIOT, D. GUINES, **A. GAVRUS**, E. RAGNEAU – *"Forming Process of a 5083 Aluminium Alloy: Constitutive Model Covering a large Range of Temperature",* Int. J. of Forming Processes, Vol. 9 (2), pp. 167-188, 2006.

[JI 12*] **A. GAVRUS**, H. FRANCILLETTE – *"Formulation of anisotropic Hill criteria for the description of an aluminium alloy behaviour during the channel die compression test",* American Institute of Physics , Journal : AIP Conference Proceedings, ISSN 0094-243X, vol. 907, n° 1, pp. 321-326, 2007.

[JI 13] S. DIOT, D. GUINES, **A. GAVRUS**, E. RAGNEAU – *"Two step procedure for identification of metal behaviour from dynamic compression tests"*, Int. Journal of Impact Engineering, Vol. 34, pp. 1163-1184, 2007.

[JI 14] **A. GAVRUS**, M. BANU, E. RAGNEAU, C. MAIER, V. OLEKSIK – *"An inverse analysis approach of the Erichsen test starting from a finite element model"*, Int. J. of Material Forming, Vol. 1, n° 1, Supp./1, pp. 5-8, 2008.

[JI 15] D. GUINES, **A. GAVRUS**, E. RAGNEAU – *"Numerical modelling of integrally stiffened structures from creep age forming technique"*, International Journal of Material Forming, Vol. 1, n° 1, Supp./1, pp. 1071-1074, 2008.

[JI 16*] OLEKSIK V., BOLOGA O., RACZ G., BREAZ R., GAVRUS A. – *"Numerical simulations and experimental research regarding the precision of the incremental forming process",* Steel Research Int., Vol. 79, n° Spec., vol. 1, pp. 591- 594, 2008.

[JI 17] S. DIOT, D. GUINES, **A. GAVRUS**, E. RAGNEAU – *"Minimization of friction influence on the evaluation of rheological parameters from compression test – Application to a forging steel behavior identification",* Journal of Engineering Materials and Technology, vol. 131, n° 1, 10 pages, 2009.

[JI 18] **A. GAVRUS**, M. BANU, E. RAGNEAU, C. MAIER – *"An Inverse Analysis of the Erichsen Test Applied for the Automatic Identification of Sheet Materials Behavior",* Engineering, vol.2, n° 7, pp 471-476, 2010.

[JI 19] **A. GAVRUS** – *"A Rheological Analysis of Solid Polymers Using an Inverse Method Applied to a Finite Element Model of the Torsion and Tensile Tests",* Proc. of Romanian Academy Series A-Mathematics Physics, Technical Sciences, Information Science, Int. J., vol. 11, n° 4, pp.363-370, 2010.

[JI 20] V. OLEKSIK, A. PASCU, **A. GAVRUS**, M. OLEKSIK - *"Experimental Studies Regarding The Single Point Incremental Forming Process"*, Academic Journal of Manufacturing Engineering, vol.8, n° 2, pp. 51-56, 2010.

[JI 21*] **A. GAVRUS**, D. -T. PHAM, H. FRANCILLETTE – *"Identification of Friction Parameters from the Inverse Analysis of a Direct Extrusion Test"*, American Institute of Physics, Journal AIP Conference Proceedings, ISBN 978-0-7354-0871-5, vol. 1315, n° 1, pp. 1455-1460, 2011.

[JI 22] **A. GAVRUS**, H. FRANCILLETTE, D. -T. PHAM – *"An Optimal Forward Extrusion Device Proposed for Numerical and Experimental Analysis of Materials Tribological Properties Corresponding to Bulk Forming Processes"*, Tribology International , vol.47, pp. 105-121, 2012.

[JI 23*] S. ZHANG, **A. GAVRUS**, H. FRANCILLETTE – *"Analysis of the Anisotropic Behavior and of the Formability Aptitude for an AA2024 Alloy using the Channel Die Compression Test and the Simple Tension Test",* Key Eng. Materials, vol. 504-506, pp.23-28, 2012.

[JI 24*] **A. GAVRUS** – *"Constitutive Equation for Description of Metallic Materials Behavior during Static and Dynamic Loadings Taking into Account Important Gradients of Plastic Deformation",* Key Eng. Materials, vol. 504-506, pp.697-702, 2012.

[JI 25] Henri FRANCILLETTE, **Adinel GAVRUS** - *"Cold rolling of a zirconium alloy: texture effects and modelling",* Matériaux & Techniques, vol. 100, S1 (Hors-Series), EDP Sciences, pp. 174 – 176, 2012.

[JI 26*] **A. GAVRUS**, F. BUCUR, A. ROTARIU, S. CANANAU – *"Analysis of Metallic Materials Behavior During Severe Loadings Using a FE Modeling of the SHPB Test Based on a Numerical Calibration of Elastic Strains with Respect to the Raw Measurements and on the Inverse Analysis Principle",* Key Eng. Materials, vol. 554-557, pp. 1133-1146, 2013.

[JI 27*] W. NASRI, **A. GAVRUS**, A. KOUADRI-DAVID, K. SAI – *"Applications of Multi-Scale Models to Numerical Simulation and Experimental Analysis of Anisotropic Elastoplastic Behavior of Metallic Sheets",* Key Eng. Materials, vol. 611-612, pp. 536-544, 2014.

[JI 28*] Anh-Tuan DAU, Ionel NISTOR, **Adinel GAVRUS** – *"Numerical Analysis Concerning the Harmfulness of Crack Turbine Rotors Using a Multi-Scale Approach Based on a Dynamic Finite Element Method",* Applied Mechanics and Materials, vol. 656, pp. 315-324, 2014.

[JI 29] Liva RABEMANANJARA, Xavier HERNOT, Gérard MAUVOISIN**, Adinel GAVRUS**, Jean-Marc COLLIN – *"Formulation of a representative plastic strain and representative plastic strain rate by using a conical indentation on a rigid viscoplastic material"*, Materials & Design,, vol. 68, pp. 207-214, 2015.

[JI 30] Liva RABEMANANJARA, Gérard MAUVOISIN, Xavier HERNOT, **Adinel GAVRUS**, Jean-Marc COLLIN – "*Formulation de déformation représentative et de vitesse de déformation représentative par indentation sphérique",* Matériaux & Techniques, vol. 103, n° 6 (602), 6 pages, EDP Sciences, 2015.

[JI 31] **A. GAVRUS**, F. BUCUR, A. ROTARIU, S. CANANAU – *"Mechanical Behavior Analysis of Metallic Materials using a Finite Element Modeling of the SHPB Test, a Numerical Calibration of the Bar's Elastic Strains and an Inverse Analysis Method",* International Journal of Material Forming, vol. 8, Issue 4, pp.567 -579, Thematic Issue: Advanced Modeling and Innovative Processes, online publication 31/05/2014 (pp. 1-14), 2015.

[JI 32] Abd-Elmoüneim BELHADJ, **Adinel GAVRUS**, Fabrice BERNARD, Mohammed AZZAZ – *"Mechanical and Numerical Analysis Concerning Compressive Properties of Tin-Lead Open Cell Foams"*, Journal of Materials Engineering and Performances, vol. 24, Issue 10, pp 4140-4155, 2015.

[JI 33*] Florina BUCUR, Eugen TRANA, Adrian ROTARIU, **Adinel GAVRUS**, Cristian BARBU, Dominique GUINES – *"Experimental and numerical analysis concerning the behaviour of OL50 steel grade specimens coated with polyurea layer under dynamics loadings",* European Physical Journal Conferences (EPJ Web of Conferences), EDP Sciences, vol. 94, 04044, 6 pages, 2015.

[JI 34*] A. GAVRUS, D. PINTILIE, R. NEDELCU –*"Numerical Analysis of Rheological and Tribological Behavior Influence on 16MnCr5 Forging Fibering"*, American Institute of Physics, Journal : AIP Conference Proceedings, ISBN 978-0-7354-1427, vol. 1769, n° 1, 4 pages, 2016.

[JI 35*] Adinel GAVRUS, Daniela PINTILIE, Roxana NEDELCU –*"Studies Concerning Numerical Prediction of Metal Fibering Obtained by Cold Bulk Forming Using Sensitivity Analysis of Tribological and Rheological Properties on a Cylindrical Crushing Process*", Applied Mechanics and Materials, vol. 841, pp. 29-38, 2016.

[JI 36*] Shibo LIU, Afia KOUADRI-HENNI, Adinel GAVRUS, "Modeling grain orientation of DP600 steel by Nd:YAG laser", MATEC Web of Conf., EDP Sciences, 80, 8 pages, 2016.

[JI 37*] E PIRVA, A TUDOR and **A GAVRUS** –*"Fractal Analysis of Surface Micro-Topography for a Rolled Anisotropic Thick Sheet of Aluminium Alloy AA2024-T351",* IOP Conference Series Journal: Materials Science and Engineering, 147, 8 pages, 2016, ISBN: 1757-899X

[JI 38*] E. PIRVA, A. TUDOR, **A. GAVRUS**, G. CHISIU, N. STOICA, A. PREDESCU –*"Micro-Scratching Tests of a Rolled Aluminium Alloy AA2024-T351 Thick Plate Using a Diamond Micro-Blade",* IOP Conference Series Journal: Materials Science and Engineering, 174 (1), 8 pages, 2017, ISBN: 1757-899X.

[JI 39] S LIU, A KOUADRI-HENNI, **A GAVRUS** –*"Numerical simulation and experimental investigation on the residual stresses in a laser beam welded dual phase DP600 steel plate: thermo-mechanical material plasticity model",* International Journal of Mechanical Sciences, vol. 122, pp. 235-243, 2017.

[JI 40*] Elisabeta PIRVA, Andrei TUDOR, **Adinel GAVRUS**, Sorin CANANAU –*"Analysis of Anisotropic Model and the Effect of Friction Coefficient in a Stretch Forming Process Applied To AA2024 Thin Sheet",* U.P.B. Sci. Bull.-Series D: Mechanical Engineering, vol. 79, Iss. 1, pp. 185-196, 2017.

[JI 41*] Adinel GAVRUS – "*The maximum work principle regarded as a consequence of an optimization problem based on mechanical virtual power principle and application of constructal theory*", American Institute of Physics, Journal : AIP Conference Proceedings, ISBN 978-0-7354-1580-5, vol. 1896, n° 1, pp. 100009-1–100009-6, 2017.

[JI 42*] Iuliana VINTILA, **Adinel GAVRUS** – "*A general computation model based on inverse analysis principle used for rheological analysis of W/O rapeseed and soybean oil emulsions*", American Institute of Physics, Journal : AIP Conference Proceedings, ISBN 978-0-7354-1580-5, vol. 1896, n° 1, pp. 150001-1–150001-6, 2017.

[JI 43] Adinel GAVRUS – *"Application of Constructal Theory to Write Mechanical Maximum Work Principle and Equilibrium State of Continuum Media Flow as a Solution of a Variational Optimization Problem"*, Int. Journal of Modeling and Optimization, Vol. 8, No. 4, pp. 227-231, 2018.

[JI 44] S. LIU, A. KOUADRI-HENNI, **A. GAVRUS** – *"DP600 dual phase steel thermo-elasto-plastic constitutive model considering strain rate and temperature influence on FEM residual stress analysis of laser welding"*, Journal of Manufacturing Processes, Vol. 35, pp. 407-419, 2018.

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[CN 21] A. KOUADRI-HENNI, **A. GAVRUS**, M. COSTACHE – "Numerical and Experimental Study of Fatigue Strength -Mechanical Stress/Strain Estimations of Thin DP600 Sheets Assembly Using Laser Welding", 24ème Congrès Française de Mécanique CFM'2019, Colloque C1 : Modélisation et Simulation Numérique du Soudage, Brest, France, 26 Août – 30 Août 2019.

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[CN 23] A. GAVRUS, M. BUISSON, M. NDOYE, F. MINIO-PALUELLO – "Etudes des Performances Aérodynamiques et Energétiques d'un Rotor Eolien Hélicoïdal à l'Axe Verticale RoDaVi par Analyses Théoriques, Mesures Expérimentales en Soufflerie et Modélisation CFD", 24ème Congrès Française de Mécanique CFM'2019, SessionS26 : Interactions fluide-structure, Brest, France, 26 Août – 30 Août 2019.

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A**. GAVRUS**, M. CARUNTU - *"Les mesures des caractéristiques qualitatives",* Session Nationale Scientifique Universitaire, Timisoara, Romania, oct. 1988.

N. CHIFAN, **A. GAVRUS** - *"La modélisation numérique pour l'analyse de la migration de la pollution souterraine et en surface dans un milieu aquatique",* Session Nationale Scientifique Universitaire, Timisoara, Romania, oct. 1989.

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Journées des Jeunes Rhéologues, Grenoble, France, Groupe Français de Rhéologie (GFR), 6-7 juin 1996.

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Réunion Internationale "Base de données WeDaBas", ACR2/GTF (France) - CPM (Allemagne), Maison de la Mécanique, Paris, 10 juin 1996.

Journées bilan de la 1ére année de l'Action concertée de recherche: Simulation du forgeage (GPI Forge/ACR2), Saint-Etienne, France, organisé par le groupe de travail ACR2, 23-24 octobre 1996.

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Séminaire – "Inverse Problems and Engineering Applications", Faculté de Mécanique, Université de Galati, Romania, Nov. 2010.

2ème Journée Scientifique de Jeunes Chercheurs – "Mesure, Modélisation et Simulation", Exposé: *"Problèmes Inverses et Applications dans le Domaine de l'Ingénierie",* MMS'2011, INSA Rennes, France, 23 Juin 2011.

Séminaire – Journée d'Etude - "Etudes Expérimentales et Numériques des Procédés de Formage Non-Conventionnels. Influence des Propriétés Mécaniques du Matériau et Méthodes d'Analyse et d'Identification. Exposé sur *"Problèmes Inverses en Mécanique des Matériaux : Principes et Applications"*, LGCGM/PSM, INSA Rennes, France, 23 Septembre 2011.

Forum Ouvert – "Comment Ecobâtir pour mieux vivre ensemble le territoire". Participation comme Membre du Groupe de Travail pour la mise en place du « *Pôle Technologique Eco-Construction* » du Pays de Fougères - Projet ECOBATYS. Table Ronde : *l'Autonomie Energétique et l'Eco-Construction : "Eco-Conception en vue d'optimiser l'impact sur l'environnement (Bilan optimal, Eco-Matériaux, Optimisation du flux énergétique)"* et Atelier Débat : *"Mutualisation des Outils, Compétences & Qualifications"*, Romagné - Pays de Fougères, France, 9-10 Fév. 2012.

Café Scientifique – Laboratoire GCGM/INSA Rennes, Exposé A. Gavrus : *"Le défi actuel dans la recherche en mécanique des matériaux: Méthodes d'Etudes de type Conception Intégrée"*, Ecole Doctoral INSA Rennes, France, 6 Juin 2013.

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Séminaire Scientifique – Exposé A. Gavrus : *"New Experimental And Numerical Methods for Investigation of Materials Tribologic Properties During Industrial Bulk Forming Processes* ", University Politehnica Bucarest (Roumanie), Laboratoire OMTR – Faculty FIMM/UPB, 4 Juillet 2017 (environ 15 participants : 10 Enseignants-Chercheurs et 5 Doctorants).

Plenary Lecturer – 1st Edition of the Space Launching Systems and of the 13th Edition of the International Conference on Design, Modeling and Optimization in the field of Aerospace Robotics, Manufacturing Systems,Mechanical Engineering, Bioengineering, Power and Energy Engineering, Materials Engineering and Neurorehabilitation , Exposé A. Gavrus : *"Relationships between the AFM and UASTRO in context of the future collaboration - GTT International Relationship of AFM",* 29 Juin 2018, SLS&OPTIROB 2018, Constanta-Jupiter, Romania, 29 Juin – 2 Juillet 2018 (environ 15 participants).

Panel C5 – Colloque Franco-Roumain en hommage au Prof. C. TEODOSIU, "Plasticité des matériaux polycristallins: mécanismes, modèles constitutifs, approches multi-échelles", Exposés P. Y. Manach, A. Gavrus : *"Collaborations France-Roumanie et Francophones en Mécanique des Matériaux et Plasticité" - Actions Francophones du GTT Relations Internationales AFM*" (Exposé P.-Y. Manach), Historique Collaborations Francophones France-Roumanie depuis les années 1990 (Exposé A. Gavrus), "*Echanges, discussions et débats autour de la Mécanique Francophone*", 27 Août 2019, CFM'2019, Brest, France, (environ 20 participants).

Séminaire Scientifique – Laboratoire LCFC-ENSAM Centre de Metz, Exposé A. Gavrus : *"Constitutive Laws and Modelling Approaches Concerning Elasto-Plastic Behaviour of Severe Materials Forming and Structures Loadings by Inverse Analysis and Inverse Problem Formulation",* 2 Avril 2019 (10 participants dont 6 doctorants).

RDV Performance – SCIC ECOBATYS, Exposé A. Gavrus : *"Mix d'énergies renouvelables et autonomie énergétique en contexte domestique - L'Eolienne Hélicoïdale à l'Axe Verticale RoDaVi – Aircrafted/Premiers essais de l'éolienne RoDaVi en vidéo*", Ecobatys, ZA Saint Eustache – Maen Roch, 35460 Saint Etienne en Coglès, France, 5 décembre 2019 (10 participants) - http://www.ecobatys.bzh/dates/rdv-performance-mix-denergies-renouvelables-et-autonomie-energetique-en-contexte-domestique/

Scientific Seminary Doctoral School of UDJG - Univ. « Dunarea de Jos de Galati », Roumanie, Keynote Lecturer 24 hours A. Gavrus : *"New trends in numerical modeling and experimental characterization of advanced materials behavior"* ; Plenary Lecturer: 1. New Trends on Numerical and Experimental Materials heology and Tribology Analysis with Applications to Rapid and Severe Forming Processes; 2. Constructal Theory Application of Prof. A. BEJAN to proof the Maximal Work Principle in Material Flows and Plasticity using an Optimal Variational Computation; 3. and 4. Recent Numerical and Experimental Improvements to Analyze the Structures and Materials behaviour under Choe, Impact and Severe Loadings using a SHPB Mechatronic Propulsion System and Non-Conventional Devices, 25 – 28 February 2020 (15 participants from which 10 PhD students).

Teaching Documents

A. GAVRUS – *"Numerical Methods: Part I: Optimisation Problems, Part II: Inverse Problems Principles and Engineering Applications",* 105 pages, Master Research, Printed Course INSA Rennes, 2012-2020.

A. GAVRUS, F. LOMINE, F.BERNARD – *"Etudes Numériques et Méthodes d'Analyse Optimale d'une Structure Réduite de la Tour Eiffel "*, 45 pages, Master Research, Printed Project INSA Rennes, 2012-2020.

A. GAVRUS – *"Matériaux Métalliques: Applications à la Mise en Forme*", 171 pages, 5th Student Year, Printed Course INSA Rennes, 2001-2020.

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A. GAVRUS, H. FRANCILLETTE – *"Materiaux Non-Metalliques Ceramiques et Polymeres. Analyse et Selection Optimale sur FUZZYMAT",* 30 pages, 5th Student Year, Printed Practical Works INSA Rennes, 2001-2005.

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A. GAVRUS – *"Travaux Pratiques de Mécanique des Milieux Continus",* 40 pages, 3th Student Year, Printed Practical Works INSA Rennes, 2002-2020.

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A. LACHAL, **A. GAVRUS**, E. RAGNEAU – *"Introduction à la Mécanique des Milieux Continus Solides Déformables",* 30 pages, 2nd Student Year, Partial Printed Courses & Applications INSA Rennes, 2006-2013.

D. GUINES, I. THIBON, **A. GAVRUS**, H. FRANCILLETTE – *"Travaux Pratiques Matériaux*", 30 pages, 4th Student Year, Printed Practical Works INSA Rennes, 2001-2004.

A. GAVRUS – *"Travaux Pratiques Vibrations",* 25 pages, 4th Student Year, Printed Practical Works INSA Rennes, 1998-2001.

A. GAVRUS – *"Modélisation Numérique par la Méthode des Elements Finis. Applications sur Castem2000"*, 23 pages, 4th Student Year, Printed Practical Works INSA Rennes, 1998-2001.

Industrial & Research Contracts

1997-1998 *"Conception d'Outillage de Transformation des Matériaux Polymériques",* **Member Research Contract** N° 530, PCI Citroën Rennes (France) – LMS/INSA Rennes (France).

1997-1998 *"Calcul d'une ligne de vie en sollicitation dynamique",* **Member Research Contrat** N° 568, ABS St. Malo (France) – LMS/INSA Rennes.

2001-2003 *"Formulation et identification des lois de comportement pour des matériaux métalliques en grandes déformations"*, **Member Research Contract** N° 648, GEVELOT Extrusion Laval (France) - MA2G/INSA Rennes (France).

2003-2004 *"Détermination des conditions de formage à chaud de panneaux raidis soudés"*, **Member Research Contract** N° 3020, AIRBUS St. Nazaire (France), MA2G/INSA Rennes (France).

2009-2010 *"Etude Numérique et Expérimentale de l'Effort de Forgeage lors d'Opérations d'Ecrasement",* **Director Partnership Agreement** GEVELOT Extrusion Laval (France) – GMA/INSA Rennes (France).

2009-2010 *"Etude d'une Relation entre l'Ecrouissage et la Dureté d'une Pièce Forgée à Froid",* **Director Partnership Agreement** GEVELOT Extrusion Laval (France) – GMA/INSA Rennes (France).

2010-2011 *"Etude des concentrations de contraintes liées au forgeage par le couplage entre le procédé de déformation plastique et les phénomènes de relaxation de contraintes",* **Director Partnership Agreement** GEVELOT Extrusion Laval (France) – GMA/INSA Rennes (France).

2010-2011 *"Identification de la divergence de l'effort de forgeage entre la courbe expérimentale et celle obtenue par la simulation pendant un procédé de forgeage type écrasement. Etude de la prédiction Effort Presse/Simulation sur FORGE2",* **Director Partnership Agreement** GEVELOT Extrusion Laval – GMA/INSA Rennes (France).

2012 *"Diminution du risque du flambage en élasticité et pour des grandes déformations plastiques des pièces en acier et des outils lors des opérations de forgeage. Etudes Théoriques et Approches Numériques",* **Director Research Contract** GEVELOT Extrusion Laval (France) – LGCGM/INSA Rennes (France).

2012-2013 *"Etudes expérimentales et numériques de l'influence des paramètres rhéologiques du comportement des aciers d'outillage de forge (type 16MnCr5) sur le fibrage obtenu lors des écrasements par la frappe des lopins cylindriques",* **Director Partnership Agreement** GEVELOT Extrusion Laval (France) – GMA/INSA Rennes (France).

2012-2013 *"Conception et réalisation d'un dispositif mécanique pour lunettes vidéo",* **Director Partnership Agreement** OPTINVENT Rennes (France) – GMA/INSA Rennes (France).

2016-2017 *"Conception et optimisation d'une éolienne innovante",* **Director Partnership Agreement** AIRCRAFTED Paris (France) – GMA/INSA Rennes (France).

2016-2017 *"Analyses Théoriques, Etudes Numériques CFD et Validation Expérimentale en vue d'Optimisation des Performances Aérodynamiques et Energétiques d'un Rotor Eolien Innovant RoDaVi",* **Director Research Contract** AIRCRAFTED Paris (France) – LGCGM (EA3913) INSA Rennes/UFR Mathematics of UR1 (France).

2018-2019 *"Développement d'outils numériques dédiés à la conception et l'optimisation de joints élastomères"* **Director Partnership Agreement** TECHNETICS – CEA/Maestral Lab. Pierrelete (France) – LGCGM (EA3913) INSA Rennes

2019-2020 "Mise en place d'une modélisation numérique d'un banc d'essai au choc utilisé pour la qualification de produits spatiaux" **Director Partnership Agreement** SODERN ARIANE GROUP Paris (France) – GMA/INSA Rennes (France).

2020-2021 *"Etudes expérimentales et numériques du comportement des mousses métalliques avec applications dans la fabrication des absorbeurs de choc",* Research Responsible, by exchanges with BLAST SOLUTIONS - BS&A, Vitry-sur-Seine, Paris (France).

International Bilateral Academic Research Agreements

2006-2012 "*Etude et modélisation des procédés de mise en forme et d'usinage des matériaux métalliques et bio-matériaux. Applications à l'analyse du comportement des matériaux pendant des sollicitations sévères de déformation",* **French Coordinator** of the Bilateral Research Agreement INSA Rennes (France) – Univ. Dunarea de Jos de Galati – UDJG, Laboratoire ITCM de la Faculté de Mécanique (Romania).

2008-2013 *" Analyse des technologies modernes de déformation plastique (formage incrémental, formage discret, etc.) et identification des lois d'écoulement plastique et du frottement par analyse inverse",* **French Coordinator** of the Bilateral Research Agreement INSA Rennes (France) – Univ. Lucian Blaga Sibiu – ULBS, Laboratoire CSCDP de la Faculté d'Ingénierie Mécanique (Romania).

2010-2015 *" Modélisation du comportement physique, mécanique et tribologique des matériaux (métalliques, polymériques et/ou bio-matériaux) en conditions non-conventionnelles et soumises aux sollicitations extrêmes. Etudes numériques, développement des techniques d'analyse inverse et applications aux procédés de transformation innovants (usinage à grande vitesse, forgeage par impact, formage incrémental, etc.) "*, **French Coordinator** of the Framework Research Agreement INSA Rennes (France) – Univ. Dunarea de Jos de Galati – UDJG, Faculté de Mécanique et Faculté des Sciences (Romania).

2013-2018 Scientific Research and Teaching Bilateral Cooperation concerning « *New trends of engineering in mechanics, automatic, mechatronics and materials fields*», **French Responsible** of the Framework Agreement between INSA Rennes (France) – Univ. Politehnica de Bucarest, Facultés FIMM, FILS, FIMST, OMTR Laboratory (Romania).

2016-2020 Scientific Research and Teaching Bilateral Cooperation concerning « *Novel engineering techniques* », **French Responsible** of the Framework Agreement between INSA Rennes (France) – l'Univ. Yahia Farès de Medea, Faculté Science et Technologie (Algeria).

International and National Research Projects

1995-1997 European Project COST 512 "*Modelling in Material Science and Processing Material",* France (CEMEF, Sophia Antipolis), Czech Republic (Brno Univ., Ostrava Univ.), Slovenia (Ljubliana Univ.), Swiss (Géneva); TMP/CEMEF **French Research Team Member**; work in the tasks concerning Rheological Laws Formulation and Identification Using a Finite Element Inverse Analysis Based on an Analytical Gauss-Newton Algorithm and Parameter Sensitivity Computation.

2004-2008 French National Network OPTIMUS Project "*High Speed Machining"*, (INSA Rennes, ECN Nantes, UBS Lorient, Univ. Bordeaux, Univ. Lyon, CEMEF - ENSMP Sophia Antipolis, ENSAM Centers of ARTS & METIERS Paris Tech, France); LGCGM/INSA Rennes (France) **Research Team Member**; work in the field concerning Finite Element Simulation of High Speed Machining Using New Mesoscopic Metallic Rheological Constitutive Laws Based on Physical Mechanisms of Severe Loadings and Parameter Identification by Finite Element Inverse Analysis of Quasi-Stati & Dynamic Compression Tests.

From 2001 Breizh Regional Research Group BRESMAT "*Materials Mechanics"* (INSA Rennes, UR1 Rennes, ENS Cachan-Rennes, UBS Lorient, ENSIETA – ENSTA Brest); LGCGM/INSA Rennes (France) **Research Team Member**; work in the fields concerning Formulation & Identification of Physically Based Mesoscopic Materials Rheological Laws for Severe Loadings, Finite Element Modelling of Rapid Compression & Tensile Tests (SHPB, Dynamic Hydraulic Press Upsetting) and Application of Inverse Analysis Principle to Solve Inverse Problems (Boundary Conditions Identification, Numerical Calibration and Two-Step Parameter Identification) using Complete and Reduced Numerical Finite Element Models; Application of Inverse Analysis Principle to New Materials Forming Tribological Tests; New Trends of Experimental & Numerical Studies of Anisotropic Rheological and Tribological Behaviour.

2019-2020 Post-Doctoral Scientific Research Project INSA Rennes - University of Brittany Loire (UBL) – Breizh Region (USIAERO) *" Multi-physics/multi-scale analysis and numerical modeling of aeronautical metal alloys machining taking into account high thermomechanical gradients via behavior-damage-microstructure coupling"*, (62k€HT) LGCGM - Civil and Mechanical Engineering Laboratory (EA 3913) of INSA Rennes – Industrial Department of UBL **Scientific Research Supervisor** with project focus on the multi-physics and multi-scale modeling on machining of metallic materials with different crystallographic structures. The important challenge of the proposed numerical modeling project is to understand how the cutting conditions affect the local formation of the shear band and especially to predict the microstructure on the material surface. Physical modeling of material behavior plays a key role in the proposed approach. It is well known that the analytical methods has some limits, because it does not make it possible to include the complex thermomechanical behavior of the machined material and reliable tool / work contact interfaces laws. Numerical modeling, often using finite element method, makes possible to introduce complex thermo-mechanical behaviors, and to predict physical variables difficult to be obtained by experimental means. The used constitutive material behavior model must reproduce the sensitivity to high plastic deformation, deformation rate and temperature together with damage estimation. Microstructure evolution induced by the cut and the local gradients of the thermomechanical variables requires improvements of specific modelling methods. Specific strategy based on multi-scale and multi-physics modelling must be adopted to obtain plastic deformation / damage coupling, plastic deformation / microstructure coupling.