

Nguyen-Dang Hung's Curriculum Vitae (June 2003)

1- Personal coordinates:

Family Name: NGUYEN-DANG
First Name: Hung
Date of Birth: 01/11/1941
Nationality: Belgian and Vietnamese
Civil Status: Married, 3 children (Nguyen-Dang Kieu Mai (Delphine, 1973), Nguyen Dang Kieu-Anh (1974) and Nguyen-Dang Dang-Nguyen (Constant, 1994))

2- Education / Professional studies:

Institution: University of Liege
Date From/To: 1961-1966
Degree/Diploma: Engineer Physicist – Aero-Space Engineering
Date: 1984
Degree/Diploma: Ph. D. , "Agrégé de l'enseignement supérieur"

3- Language Skills:(Mark from 1 (notions) to 5 (excellent) for competence) (*=mother tongue)

<u>Language</u>	<u>Speaking</u>	<u>Reading</u>	<u>Writing</u>
English	Good	Good	Good
French	Excellent	Excellent	Excellent
Vietnamese	Excellent	Excellent	Excellent

4- Membership of Professional Bodies:

Member of the "Association des Ingénieurs sortis de l'Université de Liège" (A.I.Lg.).
Member of Canadian Society for Mechanical Engineering.
Member of I.A.S.S. (International Association for Shell and Spatial Structures).
Member of the Reviewer Corps of the Applied Mechanics Reviews.
Member of the CEE-Working Group AG2 (Structural analysis of nuclear components).
Member of the Management Committee of COST Action 512 (MMSP)

5- Other Skills:

Awarded from Belgian Royal Academy of Sciences, Literature and Arts (Louis BAES) (1984)
Decorated by the Belgian Government: Grand Officer of King Leopold II 's orders (1999).

6- Present position within the organisation:

Member of the Director Comity of LTAS (Laboratory of Aero-Spatial Techniques: L.T.A.S)
Full Professor and Head of the Division LTAS-Fracture Mechanics of Solids (1991-), University of Liege, Belgium

7- Years with the organisation: 35 years

Research Engineer in the Department of Prof. B. FRAEIJIS DE VEUBEKE (1966-1968), (Laboratory of Aerospace Techniques (L.T.A.S.), University of LIEGE.

Assistant of Prof. Ch. MASSONNET (1968-1972), Department of Strength of Materials and Stability of Constructions, University of Liege, Belgium.

Assistant Professor in the same department (1972-1976).

Lecturer in the same Department (1978).

Associate Professor, University of Kinshasa, Zaire (1982-1986).

"Agrégé de Faculté" (1984-1991), Department of Mechanics of Materials, Stability of Constructions and Mechanics of Structures, Univ. of LIEGE.

Associate Professor, University of Liege, (*chargé de cours*, 1984-1991). *Depart. of Strength of Materials and Stability of Constructions, University of Liege.*

Professor and Head of the Section LTAS-Fracture Mechanics of Solids (1991-).

8- Key Qualifications:

8.1. Regular Academic Activities:

In charge of the following lectures:

"*Compléments de mécanique des solides*" (Advanced Solid Mechanics) (30 h + 30 h), CSMMC (option), EMAAE, 2MP.

"*Mécanique de la rupture*", (Fracture Mechanics, 30 h.+ 30h), 3MP,3EMA.

"*Mécanique des céramiques*", (Mechanic of Ceramic, 15 h + 15h), 3 EM (option)

"*Aspect thermodynamique des comportements des solides*", (Thermodynamic Aspect of the Behaviour of Solids, 20 h + 20 h), 3 EM (option).

« *Modélisation des solides par la méthode des éléments aux frontières* », (Boundary Element Method in Solid Mechanics, 15 h + 15 h), 3 EM(option), 3 MP (option)

8.2. Research activities

8.2.1. Main topics :

Computational Solid Mechanics (finite element method, boundary element method, analytical method, mathematical programming techniques)

Non-linear Behaviour of Solids (plasticity, visco-plasticity, visco-elasticity, fatigue, damage)

Limit State Calculations (limit analysis, shakedown analysis, second order effects)

Advanced Solid Mechanics (fracture mechanic, contact of solids, mechanic of ceramic)

Optimisation of Structures (limit design, shakedown design)

Structural Analysis (beams, plates in extension and in bending, shells...).

Fracture Mechanics (linear, non-linear.)

8.2.2. Main computing packages :

Author of the following computing packages :

ADELEF, « Analyse et Dimensionnement aux Etats Limites par la Méthode des Eléments Finis » - Analysis and Design in Limit State by Finite Element Method.

-This package may perform :

-Elastic analysis : plane structures, rotational shells

-Limit analysis : plane structures, rotational shells

-Visco-plastic analysis : plane structures

-Shakedown analysis : plane structures, rotational plates and shells

-Contact analysis : plane structures

-Fracture analysis : plane structures

CEPAO, "Calcul Elastique-Plastique , Analyse et Optimisation » - Analysis and Optimisation of frame structures.

This package may perform :

Limit Analysis, Limit Design, Shakedown Analysis, Shakedown Design, Step-by-step Elastic-Plastic Analysis, Second Order Effects, Plastic Deformation Direct Calculations, Stability Control, Optimal Design of Reinforced Concrete Structures...

SAMCEF, "Système d'Analyse des Milieux Continus par la Méthode des Elements Finis" : Contribution to the computation in the doains of Fracture Mechanic and Delamination of Composites.

ELSA (1991-1993, **E**lbows **L**imit and **S**hakedown **A**nalysis).

BECOME (1992-1994, **B**oundary Element **C**omputatioanl **M**ethod).

8.2.3. Main joint-researches with industries

- C.M.I.- contract : "*Shakedown analysis of nuclear-reactor structures*", (3 years, 1983-1985)
- S.E.P. - SAMTECH - contract : "*3-D fracture Mechanic by Finite Element Method*" (1 year, 1987-1988)
- CARAT-DUCHATELET - contract : "*Design of a lengthened and reinforced Mercedes*" (1988).
- AEROSPATIALE (Marignane) - SAMTECH - contract : "*Equivalent Domaine Integral of VCE Method*" (1989).
- CEE-MONS - contract : "*Numerical Analysis of Pressured Elbows*" (1989).
- AEROSPATIALE (Marignane) - SAMTECH - contract : "*Collage Algorithm*",(1990).
- AEROSPATIALE (Toulouse) - SAMTECH contract : "*Calculation of the integral J by the method of Equivalent Domain Integral in SAMCEF under nonlinear conditions*". (1991).
- WALLOON REGION - Program Multimaterials : "*Development and assessment of the damage phenomenon of composites*" (1991-1995).
- CEE-AG2 Contract N° ETNUT-0110-B (1993) (In collaboration with Faculty of Technologies of Mons, Belgium and the British society NNC) : "*Shakedown analysis of pipes and elbows*" (1993-1995).
- CEE-AG2 Contract N° 0235 – UK, (major contator : NNC) : "*Application of shakedown methods to piping*" (1994-1995).
- FRAMATOME (Paris) - Contract "*Analyse limite des coudes avec le programme ELSA*" : Limit analysis of elbows (1994-1995).
- CEE- COST 512- EUROPEAN CONCERTED ACTION ON MODELLING IN MATERIAL SCIENCE AND PROCESSING (MMSP) MATERIALS. Convention N° 2760, sponsored by Walloon Region. Project: "*Modelling and simulation of damage growth and crack extension in metallic and composites structures subjected to fatigue with the presence of residual stresses*", (1995-1999).
- CEE, BRITE&ERAM : Project N° BE97-4547: LISA : « *FEM Based limit and shakedown analysis for design and integrity assessment in European industry*”, (1988-2002).

8.3 General scientific and academic activities

Manager of scientific meetings

-Manager and chairman of the Liège-Workshop on theme "*Applications of the Mathematical Programming Method to Structural Analysis and Design*", Liège, June 1, 1982 (40 participants from European countries).

-Manager of the Milan-Liège day on theme "*Boundary Finite Element Method*", Liège, January 26, 1988.

-Manager of the contact group meeting on the theme : "*Applications of the mathematical programming method in optimisation and analysis of structures*", Liège, May 6, 1988.

-Manager and chairman of the "*One day Seminar on Boundary Element Method*", Liège December 2 1991", organised by FNRS-BEM Contact Group with the participation of Ch. Massonnet, C.A. Brebia, P. Parreira, M. Gérardin, P. Beckers, M. Hogge, J. Etienne ...

- Member of the international scientific meeting "*Computational Methods in Contact Mechanics*, organized by Wessex Institute of Technology, Southampson, UK, July 1993"

Promoter of European research groups

-President of the FNRS contact group "*Boundary Element Method*".

-Promoter and Secretary of the FNRS contact group "*Mathematical Programming Techniques and their Applications in Structural Analysis and Design*".

- President of the FNRS contact group "Fracture and Damage Mechanics" (1992).

-Promoter and co-ordinator in Liège of the 3rd cycle Advanced Studies ERASMUS teaching program on "*Computational Mechanics of Solids and Structures*", with the participation of 16 European Universities or High Schools.

-Administrator of the COMETT program named "*European Network for Computer Science Applied to Mechanics in Industry*" (CSAMI, F. Muller, Place Jussieu, 4, University of Paris IV, France).

-Promoter and co-ordinator in Liège of the TEMPUS program named "*Computer aide design of structures made of material with complex behaviour*" with the participation of 20 European universities or High Schools including Warsaw, Cracow, Poznan, Budapest, Bratislava, Prague, Miskolc, Nis, Ljubljana...

- Chairman of working group IV (Simulation material properties), COST 512 of E.C. : Modelling of Properties, COST 512 MMSP (95-96-97).

9- International activities:

9.1 Member of cooperation agency

- Member of the Expert Committee (Aupelf&Uref, French Speaking Agency for Universities) for the revival of "Institute of Technology of *Phnom-Penh, Cambodia* (1992)

- Member of the Expert Committee (Aupelf&Uref, French Speaking Agency for Universities) for the creation of the Institute of Computer Sciences in Ha Noi (1992).

- Member of the consortium "Engineering Sciences" (Aupelf&Uref, French Speaking Agency for Universities) for the engineering training co-operation with Indochina (1994).

- Director of the Training Centre: "European Master in Mechanics of Constructions, EMMC", Ho Chi Minh University of Technology. (1995-****).

- Director of the "Modelisation and Computation in Mechanics of Continuum, MCMC" Centre, Hanoi University of Technology (1998-****).

- Vice-President and Belgian Co-Coordinator of the Management Committee of the project "*Coopération en matière de formation de Doctorat en Sciences Appliquées en partenariat, Financement national du Vietnam*", (2003-2008).

9.2. Promoter and co-ordinator of North-South projects

-Promoter and Co-ordinator of a North-South Multilateral Project (Liège - Compiègne – Ho Chi Minh-City) sponsored by AUPELF : "*l'aide aux institutions universitaires vietnamiennes en vue de la formation de chercheurs dans le domaine du calcul des structures via l'ordinateurs et de la mécanique des solides*".

-Promoter and Co-ordinator of the project : "*Training of Vietnamese researchers in computational mechanics*" with the participation of the Technical Faculty of Mons, Polytechnic University, Institute of Mechanics, University of Ho Chi Minh city. This project is supported by French speaking community of Belgium via the CGRI.

-Promoter and Co-ordinator of the project (1995-1999): "*European Master in Mechanics of Constructions, EMMC*" with the participation of the Technical Faculty of Mons, Free University of Brussels, Catholic University of Louvain and University of Technology of Ho Chi Minh City (See Appendices concerning EMMC).

-Promoter and Co-ordinator of the project (1998-2003): "*Master in Computation and Modelisation of Continuum, MCMC*" with the participation of the Technical Faculty of Mons, Free University of Brussels, Catholic University of Louvain and Institute of Technology, Institute of Civil Engineering, National University and Institute of Mechanics of Hanoi

- Promoter et chairman of the organising committee of the "*International Colloquium in Mechanics of Solids, Fluids, Structures and Interactions*", Nha Trang, Vietnam, August 14 -18, 2000.

- Promoter and co-ordinator of the project of transfer of know-how to National University of Ho Chi Minh City (Institute of Technology), in the domain computer aided engineering design by the creation of a complete training programme: "*European Master in Modelisation of Continuum*", in collaboration with the Universities of Delf (Holland) and Montpellier II (France), 2001-2003.

- Promoter and co-ordinator of the project of transfer of know-how Institute of Technology of Hanoi, Vietnam in the domain computer aided engineering design by the creation of a complete training programme: "*European Master in Modelisation and Design of Engineering Sciences, EMMD*", in collaboration with the Universities of Lulea (Sweden) and Marseille II (France), 2001-2003.

- Promoter and co-ordinator of the project « *Feasibility study on and design of an inter-locking blocks for the protection again erosion in the Binh Thuan Province, ANTIERO* », 2001-2003. in collaboration with the Water Resource University of Hanoi, Vietnam, 2001-2003.

- Promoter and co-ordinator of the project "*Coopération en matière de formation de Doctorat en Sciences Appliquées en partenariat* ", (Financement national du Vietnam), in Collaboration with the University of Civil Engineering, Hanoi, 2003-2008.

9.3. Lectures and seminars

-During the period of August 3 to September 23, 1977.

Invited by the Committee of Sciences and Techniques of Vietnam and with aids of the CECODEL the following courses are given by Nguyen Dang Hung in Hanoi (Hydraulic institute): - *Implementations of the Finite Element Method in Structural calculations (30 h + 15 h)*.

-During the period of May from 2 to 21.1991 NGUYEN DANG HUNG is invited by the Polytechnic University and the University of Ho Chi Minh City (under contract with French speaking University Association (AUPELF) to give a cycle of lectures on the topic: "*Advanced Computational Solid Mechanics*".

-23rd September 1977, Hydraulic Institute of Hanoi (invited by State Committee of Sciences and Technologies of Vietnam). The topic: *Limit analysis of shells of revolution by F.E.M. and mathematical programming*.-2nd February 1989 at National Institute of Polytechnic Engineering, Ho Chi Minh City, Vietnam. Topic: "*The Development of Computational Mechanics in the University of Liege*".

-15th February 1990 at National Institute of Polytechnic Engineering, Ho Chi Minh City, Vietnam. Topic: "*The Variational Principles and the Finite Element Method*".

- During the period of July 15 to August 15.1991 NGUYEN DANG HUNG are invited by the two above Vietnamese universities to continue a cycle of lectures on the topic: "*Introduction to finite element method*".

- 11th February 1992 at National Centre for Scientific Research of Vietnam, Institute of Mechanics (N°224 Doi Can, Hanoi, Profs NGUYEN VAN DAO & NGUYEN VAN DIEP). Topic: "*On the computational research in the domain of fracture mechanics*".

- 17th February 1992 at Institute of Mechanics of Ho Chi Minh City, Vietnam (Prof. NGUYEN XUAN HUNG).
Topic: *"A synthetic vision of fracture mechanics"*
- 18th February 1992 at Institute of Mechanics of Ho Chi Minh-City, Vietnam (Prof. NGUYEN XUAN HUNG).
Topic: *"The use of linear programming method in CEPAO, a compact package for plastic analysis and design of frame structures"*.
- During the period 2 to 23 January 1993, NGUYEN DANG HUNG is invited by the Institute of Mechanics et University and University of Technology of Ho Chi Minh City, Vietnam, to give lessons on the topic :
"Analyse et dimensionnement limite des structures dans les conditions de chargements complexes".
- 25th June 1993, at Technical University of Budapest, Department of Metallic Structures (Prof. Ivanyi Miklos, Final meeting of TEMPUS project):
Topic (in French): *"Dimensionnement des structures à barres dans les conditions de chargement fixes et variables"*.
- 19th September 1994, at University of Aix-Marseille II, Department UNIMECA, «Technopôle de Château-Gombert » (Prof. Daniel Dufresne)
Topic (in French) *"Les nouveaux développements au service LTAS-Mécanique de la rupture des solides concernant les recherches sur les méthodes numériques en mécanique des solides"*
- 15th March 1995, AG2- Meeting (European Commission, Environment, nuclear safety and civil protection) Brussels:
Topic: *"Comparison and testing of numerical techniques for shakedown analysis of nuclear plant components"*, Research progress of the project ETNUT-0110-B (1993).
- 14th February 1996, « Laboratoire de Mécanique et Acoustique », CNRS, Marseille, (Prof. P. Suquet and Dr. P. Chabrand):
Topic (in French) : *" Analyse limite des tuyaux et des coudes par la méthode des éléments finis et la programmation mathématique."*
- 15th May 1996, at « AEROSPATIALE Avions building (Toulouse-Blagnac), Department of Structures (B.,Laschaud):
Topic (in French): *"Les récents progrès de recherche sur la modélisation des composites au LTAS, Liège"*.
- 31st May 1996, at FRAMATOME building, « Paris-la-Défense, Département Bloc Réacteur et Boucles Primaires » (M. Ph. Gilles)
Topic (in French): *" Analyse limite des coudes utiles sans les réacteurs nucléaires"*.
- 23rd February 2000, « Midterm meeting of Brite&Eram LISA project", Brussels (Profs. M. Staat and E.F. Hicken)
Topic: "Developments of algorithms for shakedown analysis"
- 17th may 2000, « Laboratoire de Génie Civil et Mécanique, LGCM, Université de Montpellier II », (Prof. Ch. Licht)
Topic (in French): *"Analyse limite et calcul d'adaptation plastique des coudes et des coques."*
- 19th November 2000, at University of New South of Wales, Department of Civil Engineering, (Prof. Francis Tin-Loi).
Topic: "About equilibrium finite elements".
- 7th December 2000, at Institute of Architecture of Hanoi (Prof. Nguyen Tram)

Topic: *"Introduction to fracture mechanics"*.

- 10th January 2001, at University of Liège, Journey of CEIM (Prof. René Maquoi).

Topic (in French): « *Le Service LTAS-Mécanique de la Rupture et les recherches dans le domaine de l'analyse limite et du calcul d'adaptation plastique des structures métalliques* »

10- Professional Experience Record in foreigner:

-During academic years, (1982-1986) on contracts with A.G.C.D. (Belgian Ministry of Co-operation), Nguyen Dang Hung is a permanent professor at Polytechnic Faculty, University of Kinshasa Zaire. He gives the following courses:

-*Applied Static (30 h + 30 h, First year of Engineering study)*

-*Strength of material and elasticity (45 h + 45 h, 2nd year)*

-*Stability (45 h + 45 h, 3rd year)*

-*Metallic constructions (60 h + 60 h, 4th year)*

-*Applied Mechanics (30 h + 30 h, 4th year)*

-*Advanced studies of stability (30 h + 30 h, 5th year)*

-During the period from 15th to 19th July 1985, Nguyen Dang Hung is invited by the International Centre of Mechanical Sciences, Udine, Italy to give four lectures in the topic of *"Applications of mathematical Programming Technique to Plastic analysis and Design"*.

-During the period from 26th October to 26 January, Nguyen Dang Hung is invited by l'A.G.C.D. (Belgian Ministry of Co-operation) to give the following lectures in Polytechnic Faculty, University of Kinshasa, Zaire:

-*Elasticity (15 h + 15 h)*

-*Stability (45 h + 45 h)*

-*Applied Mechanics (30 h + 30 h)*

-*Advanced Studies of Stability (30 h + 30 h)*

-During the period from 15th to 17th November 1988, NGUYEN DANG HUNG is invited by the Society AMTECH Liège and "Aerospatiale-Division Hélicoptères" (Marignane, France) to give a course on the topic *"Fracture Mechanics and the Finite Element Approaches"*.

-During the period from 17th to 20th January 1989, NGUYEN DANG HUNG is invited by the Society SAMTECH (Liège) and Aerospatiale, Service de calcul des structures, (Toulouse, France) to give a course about *"Finite Element Method in Fracture Mechanics"*.

-During the period from 19th to 21st June, 1990 NGUYEN DANG HUNG is invited by the society SAMTECH (Liège) to give a course on the topic *"The SAMCEF Package and the Computational Fracture Mechanics"*.

-During the period from October from 8 to 12.1991 NGUYEN DANG HUNG is invited by the Technical University of POZNAN, Institute of technological constructions, Poland to give a cycle of lecture on the topic: *"Limit analysis and limit design of frame structures"*.

-During the period of October from 14 to 18.1991 NGUYEN DANG HUNG is invited by the Technical University of KRAKOW, Institute of Civil Engineering, Poland to give a cycle of lecture on the topic: *"Computation of limit and shakedown design of frame structures"*.

-During the period from May 30 to June 4. 1992, NGUYEN DANG HUNG is invited by the Technical University of Budapest, Hungary, Department for Steel Structures to give a cycle of lecture on the topic: *"Direct plastic limit analysis and limit design of frame structures under proportional and variable loadings"*.

- During the period from 2nd to 23rd January 1993, he is invited by Institute of Applied Mechanics, and Institute of Technology of Ho Chi Minh city, Vietnam, to give a un cycle lecture on (in Vietnamese) *"Limit Analysis and design of structures under complex loadings"*.
- During the period from 17 to 21 June 1993, NGUYEN DANG HUNG is invited by the "Istituto Superior Tecnico, Departamento de Engenharia Civil" (Prof. Teixeira de Freitas), Portugal, to give lessons on the topic: *"The monotonous convergence of the pure and metis finite element models"*
"The double singular metis finite element useful for cracked structures"
- During the period from 17th to 21st June 1993, he is invited by "Istituto Superior Tecnico, Departamento de Engenharia Civil" (Prof. Teixeira de Freitas), Portugal, to give two lessons on the topic: *"The monotony of the convergency of the pure and "metis" finite element "* and *"On the double singularity of an "metis" finite element useful in crack problems"*
- During the period from 24th to 28th January 1994, he is invited Institute of Applied Mechanics, and Institute of Technology of Ho Chi Minh city, Vietnam, to give a un cycle lecture on *"Advanced mechanics of solids"*.
- During the period from 11th to 15th July 1994, he is invited by Institute of Applied Mechanics, and Institute of Technology of Ho Chi Minh city, Vietnam, to give a un cycle lecture on *"Introduction to boundary elements"*.
- During the period from 8th February to 8th March the from the first to 30th July 1996, he is invited by University of Aix-Marseille II, Department UNIMECA (Prof. D. Dufresne) to give a cycle of lectures on (in French): *"La fissuration et le calcul de ténacité par les méthodes numériques dans le SAMCEF"*
- During the period from 21st to 22nd October 1996, he is invited by Prof. Tran Ich Thinh, Institute of Technology of Hanoi to give two seminars on: *«Introduction to fracture mechanics»* and *« The finite element method and the fracture mechanics »*.
- During the period from 24th to 25th October 1996, he is invited by Prof. Phan Ky Phung, Rector of the University of Da Nang, Vietnam to give two seminars on: *«Introduction to fracture mechanics»* and *« The finite element method and the fracture mechanics »*.
- During the period of 24th February to First March 1997, he is invited by University of Aix-Marseille II, Department UNIMECA (Prof. D. Dufresne) to give a cycle of lectures on (in French): *"Introduction de la méthode des éléments aux frontières"*
- From September 1995 to December 2000, he is invited by Institute of Technology of Ho Chi Minh city under the auspice of the EMMC programme to give ten lectures on the topics (in Vietnamese): *«Modélisation in solids and structures under non linear conditions »*, *« Fracture mechanics»*, *« Boundary element method »*
- During the period from 10th April to 16th June 2000, he is invited by University Montpellier II, Laboratory LGCM, and (Profs René Motro et Christian Licht) to give cycle of lectures on (in French): *"Comportements non linéaires des solides"*
- During the period of 9th to 14th October 2000, he is invited by University of New South of Wales (Prof. Francis Tin-Loi) to give a seminar on the theme: *"On the equilibrium elements and their role in structural mechanics"*.

11- Publications:

Books, syllabus, courses: 18, Papers and scientific reports: 177, General papers or travel reports: 10, Poem collections: 6 (in Vietnamese)

11.1 Books and Textbooks

1. "*Non-Linear Behaviour of Materials*", (in French) 140 pages, Department of Mechanics of Materials, Stability of Constructions and Mechanics of Structures, University of Liège, (1980).
2. "*Applied Static*" (in French) - Edition PUZ, Kinshasa, Zaire (1983), 220 pages
3. "*Elements of Elasticity*" (in French) - Edition PUZ, Kinshasa, Zaire (1983), 120 pages
4. "*Strength of Materials*" (in French) Tome I, Department of Constructions, Polytechnic Faculty, 170 pages.
5. "*Strength of Materials*" (in French) Tome II, Department of Constructions, Polytechnic Faculty, 185 pages.
6. "*On the Plasticity theory and the plastic limit calculations of Structures*" (in French), Publication n° 98, Faculty of Applied Sciences, University of Liège (1985), 480 pages.
7. "*A course of Elasticity*" (in French), Division of "Numerical Modelisation in Mechanics and Structures", Department of Mechanics, Technology University of Compiègne, France (1986), 204 pages.
8. "*Complements of Mechanics of Solids: plasticity, viscoelasticity, Fracture Mechanics*" (in French), Lecture edited by the « Laboratoire de Mécanique des Matériaux et de Stabilité des Constructions » University of Liège, (1989), 340 pages.
9. "*Fracture Mechanics: Numerical approaches*" (in French), edited by SAMTECH (1989), 250 pages.
10. "*A course of Fracture Mechanics*" (in French), edited by LTAS-Mécanique de la Rupture des Solides, University of Liège, 1990, 350 pages.
11. "*Variational and Computational Plastic Limit and Shakedown Analysis*" Theory and exercises, to be published by BIRKHAUSER VERLAG, AG, Basel, 1990, 500 pages. (To be appeared).
12. "*Introduction to Solid Mechanics*", edited by Polytechnic University of Ho Chi Minh City, Vietnam, May 1991, 250 pages.
13. "*Advanced fracture mechanics*", syllabus published in University of Marseille II, 1996, 26 pages
14. "*Fracture mechanics and finite element method*", syllabus published in University of Marseille II, 1996, 30 pages.
15. "*Introduction to the boundary element method*", syllabus published in University of Marseille II, 1996, 60 pages.
16. "*Non linear mechanics of solids*», syllabus published in University of Montpellier II, 2000, 250 pages.
17. "Dictionnaire de l'architecture et du bâtiment, français-Vietnamien", with the collaboration of Doan Nhu Kim and Doan Dinh Kien, book prepared under the sponsoring of "l'Agence Universitaire de la Francophonie" Van Hoa publisher, 1999.
18. "*Proceedings of the International colloquium in Mechanics of solids, fluids, structures and interaction*" August 14-18 Nha Trang, edited by LTAS-University de Liège (co-editors: F. Ronday and Nguyen Van Diep), 886 pages

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11.2 Papers and reports

1. *On the Statistic Model of Atom (Quantum Mechanic)* (Master Thesis in French), Faculty of Sciences, Laboratory of Theoretical Physics (Prof. Pirenne), University of Liège, (1966).
2. *Digital computation of stresses and deflections in a box beam. A performance comparison between finite element models and idealisation patterns* (in collaboration with G. SANDER and P. BECKERS). 47 p., 33 figures, Technical Report AFFDL-TR-69-4, January 1969. Collection des Publications, Nr 4, page 87, 1967.
3. *Natural strains and stresses for trapezoidal structures analysis* (in collaboration with Professor B. FRAEIJIS DE VEUBEKE). 37 p., 6 figures, Technical Report AFFDL-TR-69-18, February 1969.
4. *Displacement and equilibrium methods in matrix analysis of trapezoidal structures*. 117 p., 62 figures, "Collection des Publications de la Faculté des Sciences Appliquées", n° 21, 1970.
5. *Duality in the analysis of shells by the finite element method*. 15 p., 3 figures, International Journal of Solids and Structures, 1971, vol. 7, PP. 281-299.
6. *Foundation of the finite element method*. Report Nr 42 in French. Laboratory of Strength of Materials and Stability of Constructions, University of Liège, 1971.
7. *Limit analysis of framed structures*. (In French), "Construction métallique", magazine edited by CTICM, Nr 4, 1972.
8. *Generalization of the dual approach in the analysis of shells by the finite element method*. Presented at NATO seminar LINEC, Lisbon, Portugal, September 1971.
9. *A new interpretation of KOLOSOV-MUSKHELISHVILI functions for plane problems in elasticity. Displacement formulation*. Report Nr 12, Laboratory of Strength of Materials and Stability of Constructions University of Liège, 1972. Presented at French Congress of Mechanics, 17-20 September 1973, Poitiers, France.
10. *Limit analysis of rigid-plastic structure by a quasi-direct method* (in French) presented at "Séminaire de Plasticité et Viscoélasticité, Ecole Polytechnique de Paris", 27-29 September 1972. Published in "Sciences et Techniques de l'Armement". "Mémorial de l'Artillerie Française", 2nd section, 1973.
11. *Application of the plasticity in the metal working problems* (in French). "Revue de la Société Royale des Ingénieurs et des Industriels", Nr 1/2; January-February 1974, pp. 14-32.
12. *Introduction to Finite element method*, (in French), "Annales des Travaux Publics de Belgique », nr 1, 1973/1974.
13. *Quasi-static approach of limit analysis problems* (in French), "Buletinul Scientific al Institutului de Constructii ", Bucharest, Anul 17, 1974.
14. *Displacement potentials for membranes on stretching and stress-function potentials for plate on bending*. Ingenieur-Archiv 45 (1976), pp. 41-53.
15. *Theoretical formulation and numerical efficiency of a bending finite element*. (In French and in collaboration with P. DETROUX), Collection des Publications de la Faculté des Sciences Appliquées, University of Liège, N°5, 1976, pp. 357-376.
16. *Direct Limit Analysis via Rigid-Plastic Finite Element*, Computer in Applied Mechanics and Engineering, vol. 8, Nr 1, April-May 1976, pp. 81-116.

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