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- General Director of Higher Education

Ministry of Education & Higher Education
Beirut – Lebanon

- Professor Power Electronics & Electric Machines

Lebanese University, Lebanon



Personal details:

Date & place of birth: 1 December 1958, Barelias, Lebanon

Marital status: Married with 3 children

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	<i>Reading</i>	<i>Speaking</i>	<i>Writing</i>
<i>Arabic</i>	E	E	E
<i>English</i>	E	G	G
<i>French</i>	E	E	G

Education:

(June 1994: Claude Bernard University - LYON 1, France

HDR: "Diplôme d'Habilitation à diriger des Recherches Scientifiques ", **Aptitude to Supervise Scientific Research**, (a pre-qualification Degree in France after the PhD to become a full professor).

(1985-1988): Claude Bernard University - LYON 1, France

Ph.D.: "Diplôme de Doctorat ": in electrical engineering from Lyon 1 University

(1984-1985): Polytechnic institute of Grenoble (INPG), France

M.Sc./DEA: "Diplôme d'Etudes Approfondies" in electrical engineering (1985)

(1977-1982): Faculty of electrical and mechanical engineering, Damascus, Syria

B. Eng.: Bachelor of engineering in electrical power systems.

Employment record

(See Appendix I for key qualification, positions & duties)

1- Full time activities record:

2002 – Today: *Director General of Higher Education* in Lebanon,

Ministry of Education & Higher Education

(1999 -2002): *Full Professor*, Lebanese University, Lebanon

(1995 - 1999): *Associate professor*, Lebanese University, Lebanon

(1989-1995) : *Associate professor (Maître de Conférences)*,

Claude Bernard Université - Lyon 1, France

(1988-1989): *Research & Development Engineer*,

"Leroy-Somer Motors" company, St-Symphorian d'Ozon, France

(1985-1988): *Assistant professor*, Claude Bernard University - Lyon 1, France.

2- Part time Activities record (Advising & Consultancy, teaching):

2011-2013: **Expert of the European project OIPULES (Orientation et Insertion Professionnelle dans les Universités du Liban, de l'Egypte et de la Syrie), Numéro du Projet : 516818-TEMPUS-1-2011-1-FR-TEMPUS-JPHES**

Tasks include: Evaluate the advancement of the project in five participating universities in Lebanon during the three years of the activities of the project, with respect to the defined planning of activities.

2003-2005: **Member of the national committee to develop the strategy of education and Higher education in Lebanon**

Tasks include: Strategic plan, strategic development, strategy executive plan (The strategy includes: Elementary & secondary general education, Technical & Vocational Education, Higher Education including public & private sector.

2005-2008: **Member of the national committee to develop a new structure for the ministry of education & Higher education (MEHE)**

Tasks include: Developing a new structure for the MEHE, definition of the vertical & horizontal relation between the different units of the ministry.

2005-2008: **Member of the national committee to develop a new law for higher education in Lebanon**

Tasks include: Introduce new regulations for private & public sector (Licensing, audit, quality assurance, accreditation, national bodies).

(1998- Today): **Part-time Professor, Institute of Applied Economic Sciences (ISAE - CNAM) of Beirut, Lebanon**

Tasks include: (1) Teaching: Drives & control, power electronics, Electric machines, instrumentation & Electric measurement, Production-transport & distribution of electric energy , (2) Supervising: Thesis in Cycle C "3rd Cycle", (3) Participation in the Jury of Master degree thesis.

July - Sep 2000: **UNESCO – Reg. Office of Educ. in Arab States, Beirut, Lebanon**

Tasks include: Technical coordinator for a pilot study in Electronics' Standard Laboratories & Workshops for MVTE in Lebanon, Site visits, on-campus analysis, preparing TOR for the different labs in Electrical & Electronics specialties, Technical specs for the needed equipment, layout of the different Labs

1996-1998: Ministry of Vocational & Technical Education (MVTE), Lebanon

Tasks include: Adviser to the Minister of Vocational and Technical Education, Manage the Development of curricula for 65 programs at the level of Secondary technical education (BT) & 60 programs at the level of TS (undergraduate technical education, day to day technical consultancy).

1996 – 1999: Centre for Educational Research and Development, Lebanon

Tasks include: Member & Coordinator: Curricula Reform Commission of Technology for general education in Lebanon, Development of curricula in Technology education for all the levels of education. Participation as an author in developing the National books in Technology (See publications: Books).

1997 - Up-to-date: University Institute of Technology (IT), Sidon, Lebanon

Tasks include: Member of the scientific committee of the Institute, Selection of staff, and Agree on Curricula.

Participation to Conferences, Workshops, Tutorials & training

(See Appendix II for details)

- 1-Conferences & Workshops on Higher Education
- 2-Conferences & Workshops in Engineering research domains
- 3-Participation to tutorials & training Sessions

Supervising Research Activities

(See Appendix III for details)

Since 1990, I had and still supervise research activities: PhD students, MS students, and I had worked on many Research industrial projects.

Articles

(See Appendix IV for details)

- Journals
- International conferences
- Regional Workshops
- Teacher & Student Books about Technology & Technology Education
- Curricula development
- University courses
- Industrial reports
- Articles about higher education & Quality assurance

Membership in Professional Societies:

- **IEEE Senior member**, (Institute of Electrical and Electronic Engineering) USA, member since 1992.
- **Order of Engineers** in Lebanon, member since 1995.
- **EPE** (the European Power Electronics and Drives Association), Belgium, 1990-1996
- **LEC** (Association of EMTP users) USA, Member, 1991-1998.
- **EEAPA** (Electric, Electronic and Control Professors Association) France, 1988-1996.
- **ISES**, (International Solar Energy Society), member since 2001.
- **PED** (Power Electronics Drives) Europe, 1992-1996.

Computer Skills

Operating Systems: UNIX, MSDOS, Windows 3.x, 9x, NT, XP, VMS, NOS (Novell)

Programming Languages: Visual Basic, Pascal, FORTRAN, C, C++, Assembly language

System Administration: Windows 9x et NT, Unix: System & Networking

Office Automation: Microsoft Word, Excel, Access, PowerPoint, Visio,

Scientific Applications: Maple V, Matlab-Simulink, Electronic Workbench, Flux 2D, Quick Field, etc.

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Appendix I - Key Qualifications

Jan 2002 up-to-date: Ministry of Education & of Higher Education, Lebanon

Position: General Director of Higher Education

Duties in Higher education:

- Head of the directorate general of higher education (supervising Higher Education sector in Lebanon, Coordination with international organizations concerned by HE).
- President of the Equivalence Committee (Evaluation & recognition of programs in private universities and institutions, Recognition of Degrees from outside Lebanon).
- President of the Engineering Accreditation Committee (Recognition of Engineering programs from inside and outside Lebanon in accordance with the Lebanese regulations (Law 636/97).
- President of the Technical committee (Supervising & Evaluation of Private Higher Education Institutes & Universities in Lebanon – decree 9274/96).
- Vice-president of the council of HE in Lebanon (HE law 21/12/1961).
- Responsible of the Organization of the Colloquium Exams in Medicine, Pharmacy, Dentistry, Public Health, etc., Selection of the examination boards in collaboration with the Ministry of Public Health in Lebanon.

Other duties within my position:

- Member of the national committee for the development of the strategy of education in Lebanon.
- Member of the national committee for the development of new regulations in Higher education (development of new laws & decrees).
- Member of the national committee for re-structuring the departments of the ministry of education & HE.
- Member of the national commission for the Handicap programs
- Member of the national commission for developing computer utilities in education sector.
- Member of the national commission for the application of EMIS system (Education management Information System).

2010 – Up-to-date:

- **Board member of ANQAHE** (Arab Network for Quality Assurance in Higher Education)
- **Board member of the CQAA- AArU** (Council of Quality Assurance & Accreditation of the Association of Arab Universities).

2003 – Up-to-date – Association Universitaire Francophone – Bureau du Moyen Orient BMO – AUF (Middle East office of the Association of Francophone Universities)

Position: Observer in the regional commission, and Member of the orientation council for the Francophone numerical campus, BERYTECH.

Tasks include:

Participate to the annual meetings of the regional commission to evaluate cooperation & research activities and to the annual meetings of the orientation council of BERYTECH to plenary the activities of the center

2002 - up to date - CEDRE program (Coopération Entre universitaire pour le Développement de la Recherche Scientifique) common research programs between Lebanese & French research teams in different universities – 4 themes: Technology, health, Environment, Human sciences)

Position: Member of the Lebanese-French scientific committee

Tasks include:

(1) Coordination within the committee, (2) Selection of experts, (3) Administrative and financial support.

2003 - up to date - TEMPUS European program in Lebanon (Euro-Mediterranean education & research projects & Exchange of students & professors)

Position: Responsible of the program in Lebanon

Tasks include: Supervising National tempus Office, Budget, activities

2007-2008 Tempus LEPAC project – Tempus European project – Structural & complementary Measurements (SCM)

Creation of Lebanese program for the accreditation of engineering programs – a Lebanese-European program with Accreditation bodies in Europe (CTI-France, FEANI-Belgium, ASIIN-Germany)

Position: Member of the Steering Committee and Coordinator of the technical committee

Tasks included:

Coordination in Lebanon, steering committee, technical committee, Engineering schools, organizing training of experts in accrediting engineering programs, organizing workshops, dissemination of information, preparing texts about the creation of national body: procedures, standards, guides.

2006-2007 Tempus QAHEL projects – Tempus European project – Structural & complementary Measurements (SCM): Program about Quality Assurance of HE in Lebanon, in collaboration with European Universities (Sunderland-UK, AUB, BAU, MUBS, HCU).

Position: Member of the Steering Committee

Tasks included:

Coordination in Lebanon, steering committee, technical committee, different institutions of HE, organizing training of experts in Audit, quality assurance & accreditation, organizing workshops, dissemination of information, preparing three guides about quality, audit, and accreditation of HE institutions, creation of four quality centres, one in the MEHE, three in Lebanese universities.

July-2000 feb-2002: AGDTE Organization committee (Arabian Group for the Development of Technology Education),

Position: Member of the organization committee

Tasks included:

1- Organization of summer universities: 1999 in JUST, Irbid, Jordan; 2000 in HIAST, Damascus; Coordinator for 2001 in IT of Saida, Lebanon, Sep. 2002 JUST, Jordan, Sep 2003 UOB, Lebanon. Coordination with the French & Arabian Professors.

2- Moderator of a group working on the development of the modern technology in Higher Education (computer, electronics, telecommunications, etc.) in the Arab world, **tasks performed** are:

- Creation of common Email group and administrating this group at the URL (<http://groups.yahoo.com/group/agdte/>). 180 members.

- Make a registry for the activities of the group (annual summer University reports, technical reports, etc) to be accessed by the members of the group
- Creation of a Web Site for the group: <http://aadte.freesevers.com>

July 2000 - Sep 2000: UNESCO- Regional Office of Education in Arab States, Beirut, Lebanon

Position: Technical coordinator for a pilot study in Electronics' Standard Laboratories & Workshops for MVTE in Lebanon.

Tasks included:

- Plan the pilot study and define the tasks for every consultant of the team.
- Define the necessary standard Workshops (based on curricula contents)
- Participation in the definition of the list of equipment and of the technical specifications for every workshop.
- Schools survey & identification of the needed equipment per school (the 21 public schools with electronics' specialty were visited)
- Design of an equipment matrix (available, recommended & Emergency needed equipment)
- Production of bedding documents

1996-1998: Ministry of Vocational & Technical Education (MVTE), Lebanon

Position: Adviser to the Minister of Vocational and Technical Education,

Tasks included:

- Day-to-day technical advisory to the minister
- Coordinator with the French Educational Commission, which was reforming the Pedagogic National Institute of Technical Education, Lebanon. **Tasks included:** the educational and administration structure of the centre, curricula review, and specifications for equipment (workshops and laboratories).
- Coordinator with the German Advisory Team (GTZ) at MVTE. The GTZ were involved in developing the dual system in public technical schools.
- Member of the co-ordination committee for curricula development for all VTE specialization's. **Tasks involved:** Introducing new specializations, reviewing existing curricula, reviewing the work of the assigned consultants, approving final versions of the curricula and reporting to MVTE.
- Coordinator (MVTE representative) of the Islamic Bank and Arabic Bank Loans, which were procured for building and equipping new VTE schools, with CDR. **Tasks included:** Identifying the areas of need for new VTE schools, designing the time frame for the implementation of the project.
- Following up on the day-to-day activities of MVTE and reporting to the Minister.
- Conducting meetings with private sector representatives to improve the quality of VTE graduates.
- Acting as a liaison for the Minister with visiting international commissions.
- Represented MVTE in many international visits concerned with learning about VTE development

1996 - 1999: Centre for Educational Research and Development (CERD), Lebanon

Position: Member of the Technology Curricula Reform Commission in general education.

Tasks included:

- Elaboration of the new curricula in Technology for the three levels (Primary, Intermediate and secondary): Objectives, Skills, Content, and Evaluation.
- Elaboration of student books and teacher manuals for the three levels.

- Authors committee coordinator for the Elaboration of student books and teacher manuals for the third secondary year in 1999-2000
- Training of trainers in Technology for the three cycles.

1997 - Up-to-date: Institute of Technology (IT), Saida, Lebanon

Position: Member of the *scientific committee* of the Institute.

Tasks included:

- Participated in the identification of the mission, objectives and structure of the Institute.
- Participated in the preparation of the curricula for the various specializations.
- Writing the Terms of Reference for the institute staffing.

1986-1996: Claude Bernard University, Lyon I, France

Position: Associate professor (*Maitre de Conférences*)

Additional Tasks:

- Administrator of the Electric and Power Electronics research Laboratory (1990-1995).
- Head of Electric Engineering Department "Licence d'Ingénierie Electrique" 93-96
- Administrator of Electric Engineering & Power Electronics Section (95-96)
- Member of the commission of curricula reform for B.Sc., M.Sc. and Diplomas in electrical engineering
- Elected Member of the Scientific Committee of Engineering Sciences, 63th section, (April 1992).
- Elected Member of the administrative council of the Institute of Engineering and Technology Development (1994-1995)
- Senior Administrator of 8 contracts with Industrial French Companies)

1988–1989 Moteurs Leroy-Somer, St Symphorien d'Ozon, France

Position: Research & Development *Engineer*

Tasks included;

- Management of computer workstations VAX/VMS
- Developing of Software for the Calculation of DC & AC Electric Machines.
- Preparing T.O.R for clients.

Teaching Experience

(1996-1999) Associate Professor at the Lebanese University then,

(1999-2002) Full Professor at the Lebanese University:

- Electrical Machines course (magnetic circuit, transformer, machines DC and AC, stepping motor, transient equations of DC machines), BSc Electronics.
- Power Electronics course (power electronics components, single and three phase rectifiers, chopper, inverter, AC controller, cyclo-converter, speed drive), BSc Electronics
- Electric Machines and Power Electronics Laboratory in addition to projects,

(1996-1998) Visiting Professor at the Saint Joseph University:

- Administrating UNIX operating system in a Network, and Windows NT server, course for the students in BSc.- Maitrise Informatique Appliquée à la Gestion – MIAAGE,

(1998-up-to-date) Visiting Professor at ISAE-CNAM de Beyrouth, Liban

- Dynamic state of electrical machines, Actuators, Linear control, Scalar and vectorial control of electric machines, for the students in Cycle C (MSc. Electrical Engineering)

(1989-1995) Lecturer at LYON 1 University (Maître de Conférences) :

(1989-1992): Courses in electrical engineering and computer sciences:

- Electric, electronic and control applications for the students in BSc. "Electronic, power and Control".
- Courses in electrical engineering for students in MSc. "Electronic, Power and Control": Synchronous machines, unified theory of electrical machines, Power electronics.
- Courses in computer sciences: Assembler 8086/8088, Introduction to UNIX system.

(1992-1995): Courses in electrical engineering:

- Magnetic circuits, Transformers, Electric motors and Power electronics for students in BSc. And MSc. "Electronic, Power and Control".
- Modelling of electromagnetic converters for students in "Diplome d'Etudes Approfondies (DEA)" in electrical engineering.

(1985-1988) Assistant professor at Lyon 1 university

- Computer programming in BASIC and PASCAL languages for students of the 1st and 2nd year in applied sciences at Lyon 1 University.
- Electronic applications for students in BSc. And MSc. of Medical engineering: Transistors, Operational amplifiers.
- Courses and Electric applications for the students in BSc. And MSc. "Electronic, Power and Control": Magnetic circuits, transformers, electric motors, and power electronics

Appendix II

Participation to Conferences & Workshops

1- Conferences & Workshops on Higher Education

- 15-18 Dec. 2013:** "International Conference of Microelectronics ICM2013" Lebanese university, Lebanon (Keynote).
- 7 Dec. 2013:** "Alignment of IT Curricula in Lebanon", CIO Lebanon Association & American university of Sciences & technology (AUST), Lebanon (Keynote).
- 5-6 Dec. 2013:** "Symposium Le Plagiat: fléau du XXI^e siècle », Université St Esprit de Kaslik (USEK), Lebanon (Keynote).
- 28 Nov. 2013:** "Seminar on Students Services in Higher Education - Improving the Learning Environment ", Beirut Arab University (BAU), Lebanon (Keynote).
- 26 Nov. 2013:** "Public Policy Lecture on the Higher Education Reform Project in Lebanon", Issam Fares Institute for Public Policy and International Affairs, American university of Beirut, Lebanon (Lecture).
- 7-8 Nov. 2013:** "Sixième Assemblée générale de la conférence des recteurs de la région du Moyen-Orient (CONFREMO), Université la Sagesse, Beyrouth, Liban, (Keynote).
- 1-2 Nov. 2013:** "Conference of Arab Educational Information network: Graduate and Postgraduate Programs in Education in Arab Universities: Quality and Added Value", Lebanese American university, Beirut, Lebanon. (Keynote)
- 24-25 Oct. 2103:** "The 9th World Congress on Engineering Education (WCEE) 2013: Impact of Globalization on Engineering Education", Beirut, Lebanon. (Keynote)
- 18-21 June 2013:** "Conference Erasmus for All", organized by the Office of Education in EU, Nicosia, Cyprus. (Chair of a session)
- 24-25 Nov. 2013:** "9th World Congress of Engineering Education - WCEE 2013, Impact of Globalization on Engineering Education", Beirut Lebanon. (Keynote)
- 12-14 May 2013:** "UNESCO Regional WS - Establishing & Enhancing a culture of quality in HE systems in Arab States", UNESCO Office Beirut, Lebanon, (Keynote)
- 11-12 April 2013:** "Colloque Plurilinguisme et mondialisation », Université islamique du Liban, Khaldeh, Lebanon, Discours Inaugural. (Keynote)
- 11 April 2013:** "International conference on *Quality and Health: Accreditation and Specialization*", *University La Sagesse (ULS), Beirut, Lebanon, (Presentation).*
- 14-15 March 2013:** "Supra-Regional conference on the Governance in Higher education Institutions - Promoting the Modernization and Strengthening of Institutional and Financial Autonomy in Southern Neighboring Area Higher Education Institutions", Beirut Arab University, Debbeih, Lebanon. (Keynote)
- 11-12 march 2013:** "EU Tempus conference - Organization & profile of Doctoral Studies", Holy Spirit University (USEK), Jounieh, Kaslik, Lebanon. (Keynote)
- 28 Feb. 2013:** "Euro-Arab Conference on Higher education", Modern university for Business 7 Sciences, Beirut, Lebanon, (Keynote).

- 17 Jan. 2013:** “Tempus National information day”, Ministry of Education & Higher education, Beirut, Lebanon (Synthesis of the day).
- 26-27 Nov. 2012:** “Conflict Transformation & Intercultural Dialogue in Higher education studies“, UNESCO & GIZ, Beirut, Lebanon, (Keynote)
- 16-17 Nov. 2012:** “Conférence de l’AUF (Agence Universitaire de la Francophonie) - LA FIN DES CLASSEMENTS ? DE LA COMPÉTITION À LA COOPÉRATION UNIVERSITAIRE“, Bucharest, Romani (Présentation).
- 22-23 Mar. 2012:** “The 2nd conference of the Leaders Responsible of Engineering Education the Arab World“, Order of Engineers, Beirut, Lebanon, (Keynote)
- 22-23 Mar. 2012:** “The 2nd conference of the Leaders Responsible of Engineering Education the Arab World“, Order of Engineers, Beirut, Lebanon, (Keynote & Presentation).
- 28 Feb. 2012:** “The conference of the Union of Engineers in Lebanon: Engineering Education in Lebanon“, Beirut, Lebanon, Paper.
- 1 Feb. 2012:** “World Bank Workshop - Building a Screening Card for University Governance“, Ministry of Education & Higher Education, Lebanon, Keynote.
- 13-15 Dec. 2011:** “2nd conference of ANQAHE: Arab Network for Quality Assurance in Higher education“, Abu Dhabi, UAE (Chair a session).
- 3-8 Dec. 2011:** “13th Conference of the Ministries responsible of Higher Education & Scientific Research in Arab states: “ , Abu Dhabi, UAE (Lebanese delegation).
- 22-23 Nov. 2011:** “Regional Seminar for HE experts - Towards Equivalence of Higher Education Degrees between the Southern Mediterranean and the EU“, Organized by the EU, University of Barcelona, Spain (Chair a session).
- 21 Oct. 2011:** “Seminar Doctoral Studies in MENA Countries“, organized by the European commission, Brussels, Belgium.
- 7-8 March 2011:** “Tempus Regional Seminar on University Governance in the Southern Mediterranean Region“, Università degli Studi di Catania, Catania, Italy.
- 6-10 Dec. 2009:** “12th Conference of the Ministries responsible of Higher Education & Scientific Research in Arab states: According between outcomes of Higher education & the needs of the society“, Beirut Lebanon. (Lebanese delegation)
- 4-6 Nov. 2009:** “Conference of the International Association of Universities – IAU: Cultural Dialogue“, Notre Dame University, Loueizeh, Lebanon, Keynote.
- Feb, March 2008:** “Workshops on the accreditation of engineering program in Europe & the situation in Lebanon“, Beirut, UNESCO office for education in Arabe world, Lebanon.
- 31 august to 4 Dec. 2007:** “11th Conference of the Ministries responsible of Higher Education & Scientific Research in Arab states: Quality assurance & accreditation in Arab world“, Dubai, UAE. (Lebanese delegation)
- 30 Nov. to 1 Oct. 2007:** “Regional meeting about common activities to develop Quality assurance in Higher Education in Arab countries“, Dubai, UAE.
- 18-19 May 2007:** “International conference on Governance in higher Education & management of public affairs“, USEK, Lebanon.
- 14-16 May 2007:** “Arab Engineering 24th conference: Engineering Education in Arab World“, Amman, Jordan.

- 12 March 2007:** " La France et le Liban dans l'Espace européen de l'Enseignement supérieur – Gouvernance et stratégie de l'université", Ecole supérieur des Affaires (ESA), Beirut, Lebanon, Paper.
- 19-21 Nov. 2006:** "3rd Conference of the Ministries responsible of Higher Education 7 Scientific research in Islamic World", Kuwait.
- 17-20 Sep. 2006:** "Meeting of regional experts to develop standards & indicators of quality assurance in HE", organized by ALECSO & ECISCO, Amman, Jordan.
- 2 may 2006:** "Education, Technology education & Development", Qatar organization for development, Doha, QATAR.
- 23-24 March 2006:** "Euro-MEDA cooperation in scientific research", Institute of research & Development, Paris, France. (Presentation)
- 12 March 2006:** "Lebanese French Meeting about European space for HE and its impact on HE in Lebanon", ESA, Beirut, Lebanon. (Presentation)
- Dec. 2005:** "10th Conference of the Ministries responsible of Higher Education & Scientific Research in Arab states: higher Education & Research in the Arab world", Sanaa, Yemen. (Lebanese delegation)
- 5 Fév. 2005:** " La France et le Liban dans l'espace Européen", ESA, Beirut, Lebanon, Paper.
- 26-30 Nov. 2004:** "GIGP2004: International conference on Global Integration of Graduate Programs", Amman, University Al-Zaytounah, Jordan.
- 4-7 Sep. 2004:** "Evaluation of Education in Engineering education", Amman, University of Jordan.
- 10-24 Feb. 2004:** "Workshops on the organization of private higher education in Lebanon", Organized by the Ministry of Education & Higher Education in Lebanon, Beirut, Lebanon.
- 5 Fév. 2004 :** Colloque- La France et le Liban dans l'espace européen de l'enseignement supérieur – Ecole Supérieure des Affaires – Beyrouth - Organisé par l'Ambassade de France au Liban, Paper.
- 15-18 Dec. 2003:** "9th Conference of the Ministries responsible of Higher Education & Scientific Research in Arab states: higher Education & Research in an Information & Knowledge society", Damascus, Syria.
- 13-14 Dec. 2003:** « Meeting of the Regional Commission for the recognition of studies & Qualifications in Higher Education in Arab Countries », Organized by the UNESCO - Regional Office of Education in the Arab States, Damascus, Syria.
- 17-18 Nov. 2003:** "Lebanese university, Actual Situation, Reforms & perspectives", Lebanese university. Paper
- 15 Nov. 2003:** "Higher Education in Lebanon: Role of the Public & of the Private Sectors", St Esprit de Kaslik University, paper.
- 21-23 Feb. 2003:** "Quality assurance and Accreditation for higher education institutes & research centers ", Aleppo, Syria.
- 27- 29 May 2002:** World Bank Conference on "Higher Education in the Middle East & North Africa (MENA): Challenges and Opportunities for the 21st Century".
- 1-3 October 2001:** The expert Meeting on the preparation of a Technology Education Guide, UNESCO, Regional Office for Education in the Arab States, Beirut, Liban

2- Conferences & Workshops in Engineering research domains:

10 Jan. 2012: "IEEE section Conference: Teaching Electromagnetism and Modelling procedures", Notre Dame University (NDU), Loueizeh, Lebanon. Keynote

27-29 Sep. 2009: "MESM'2009", Lebanese American University (LAU), Beirut, Lebanon, Member of the technical committee.

14-17 July 2009: "The 2009 International Conference on Advances in Computational Tools for Engineering Applications", Notre Dame University, Loueizeh, Lebanon, Keynote.

3-6 Sep 2001: *The Third Middle East Symposium on Simulation & Modelling (MESM2001)*, Amman University, Jordan, Member of the International committee.

2-4 Nov. 1999: *The 13th Science meeting*, Organised by the National Research Centre in Lebanon, Lebanese American University (LAU), Beirut (Lebanon). Paper

17-20 Oct. 1994: *E.P.E. Tutorial and Symposium on Electric Drive Design*, Lausanne (Switzerland). Paper

31 Oct. - 4 Nov. 1993: *COMPUMAG ' 93 (9eme conference on the computation of electromagnetic fields)*, Florida (USA). Paper

92, 93 et 94: Journées du Club EEA, Electrotechnique, France

- Maison et électricité, *Montpellier 1994*, 3 jours
- Véhicules et électricité, *Cachan 1993*, 3 jours
- Graphes et Modules pour l'électrotechnique, *CNAM Paris, 1992*, 3 jours

92 : Journées du GDR (Groupe de Recherche), Electrotechnique, Cachan, France

- "Conception de composants magnétiques haute fréquence", **16 Avril 92**
- "Modélisation numérique des paramètres électriques des actionneurs", **16 Juin 92**
- "Modélisation de Machines non conventionnelles en vue de la commande", **9 Déc. 1992**

18-20 Nov. 1992: *E.P.F. 92 " Electronique de puissance de futur"*, Marseille (France).

27-30 Sep. 1992: *E.V.S. 11 - "11th International conference on electrical vehicle symposium"*, Florence (Italy).

5-6 Nov. 1991: *Colloque bilan des actions de Recherche du Ministère de la Recherche et de la Technologie*, Paris (France).

July 1986: *International Conference on Evolution and Modern aspects of Induction Machines*, Turin (Italy), 5 days.

3- Participation to tutorials & training Sessions

15-16 July 2005: Inter-Ministries Scheduled Workshops, Lebanon

- Developing organizing capacities for the administration in the 21st century.

July, August, Sep. 2002: Inter-Ministries Scheduled Workshops, ARLA Project (European Union), Tutorials on Leadership & Strategic planning, Lebanon

- Strategic Planning (SWOT & Value chain analysis), **2 days**
- Creative Leadership and Management Change (Innovation concepts, identification of obstacles and development of solutions), **2 days**
- Management Skills (Moderns concepts in modern Management, policies, regulations, Knowledge management), **2 days.**

Aug. 2001: University Institute of Technology, Saida, Lebanon

- *Power Electronics & Drives, Course of 7 days.*

Aug. 2000: Higher Institute of Applied Sciences & technology, Damascus, Syria

- *Real Time systems, Course of 8 days.*

April 1999: Lebanese University & AUPELF-UREF, Beirut, Lebanon

- *Network Administration, Course of 8 days*

Aug. 1999: University of Sciences & Technologies, Irbid, Jordan

- *Industrial automation – Programming Language Controllers (PLC), Course of 8 days.*

June 1994: H.P. France, Isles d'Abeau, Grenoble, France

- *Administrating Unix operating system: HP-UX ver.10, Course of 3 days*

Feb. 1990: H.P. France, Paris, France

- *UNIX operating system, HP-UX version 8.0, Course of 10 days*

Sept 1988: Digital France, Paris, France

- *Operating system VAX/VMS: Course of 10 days*
- *Administrating VAX/VMS in a network, Course of 10 days*

Appendix III

Supervising Research Activities in Technology

1. Responsibility of post-graduate and Research students:

As a supervisor, I was and still responsible of many Research students:

Elias MASSAAD	<i>Choix et Installation des Matériels D'Imagerie Cardiovasculaires</i> , Thèse CNAM, juin 2012 , ISAE-CNAM, Beyrouth, France/Liban.
Elias ABI KHALIL	<i>Gestion des projets de vérification de conformité et de sécurité des installations électriques basse tension, dans les établissements recevant du public</i> , Thèse CNAM, juin 2009 , ISAE-CNAM, Beyrouth, France/Liban.
Fawzi NASSER	<i>Contrôle du Débit d'un système de pompage d'eau par un Variateur de vitesse</i> , Thèse CNAM, juin 2009 , ISAE-CNAM, Beyrouth, France/Liban.
Samer SALIBA	<i>ETUDE ET REALISATION D'UN PROTOTYPE DE FOUR À INDUCTION</i> , Thèse CNAM, juin 2009 , ISAE-CNAM, Beyrouth, France/Liban.
Ali MAHMOUD	<i>ETUDE ET REALISATION D'UNE MACHINE AUTOMATIQUE A MODELAGE DE PÂTE « MMP »</i> , Thèse CNAM, juin 2008 , ISAE-CNAM, Beyrouth, France/Liban.
Nizar DAO	Stratégie de commande des onduleurs: Etudes et réalisation d'une maquette pédagogique", Thèse CNAM, juin 2003 , ISAE-CNAM, Beyrouth, France/Liban.
Said KHAWAND	"Etudes et réalisation d'une machine a gravure a commande numérique", Thèse CNAM, Oct. 2003 , ISAE-CNAM, Beyrouth, France/Liban.
Chadi NADER	Characterization of thin magnetic films used in passive microwave components, Ph.D. 2003 at the Lebanese University in Collaboration with the University of St-Etienne in France.
Jihan EI-HORR	Modeling of transient phenomena in Induction machines, DEA Modélisation et calcul Intensif, Dec. 2001, Lebanese University & St-Joseph University, AUPELF, Lebanon
Maurice TEISSIER	Modeling of asynchronous generators in steady and transient states, Ph. D. Feb. 1997 at LYON 1.
Aimé AH-JACO	Transient modeling of three phase asynchronous motors with saturation and space harmonics, Ph.D. Nov. 1996 at LYON 1.
Ali MAKKI	Modeling of single capacitor asynchronous motor with saturation and space harmonics, Ph.D. Oct. 1996 at LYON 1.
Hamed YAHOUI	Thermal monitoring of the rotor of an asynchronous motor, Ph.D. July 1995 at LYON 1.
Philippe CLAUZON	Détection des défauts au rotor d'un moteur asynchrone triphasé par stimulation sur l'alimentation statorique, DEA, ECL/INSA/UCBL, juin 1995 , LYON, France.
Ahmed BOUCETTA	Magnetic losses calculation in ferrite at high frequencies by finite element

- method, Ph.D. **June 1994** at LYON 1.
- Daniel GAUDE** Design of single capacitor asynchronous motor, DEA, ECL/INSA/UCBL, **June 1993**, LYON, France.
- Ali MAKKI** Modeling of battery-CSI inverter-permanent magnet synchronous motor, DEA, ECL/INSA/UCBL, **June 1993**, LYON, France.
- M. MAILLARD** Transient modeling of single capacitor asynchronous motor, DEA, ECL/INSA/UCBL, **June 1993**, LYON, France.
- Aimé AH-JACO** Modeling of battery-PWM inverter-asynchronous motor group for electric vehicle drive chain, DEA, ECL/INSA/UCBL, **June 1992**, France
- Frederic THOLLON** Asynchronous motor cage fault detection through electromagnetic torque measurement, **Sep. 1990**, DEA, INPG/ECL/UCBL, France.
- M. CHUNG-YOUN** Start-up speed and torque measurement of a no loaded asynchronous motor, **June 1991**, DEA, INSA/UCBL, France.
- Ph. CHARCUSSET** Converters configuration for traction drives supplied from direct or alternative current supply, Thèse **CNAM**, **Oct. 1991**, France.
- Atef ABOU-AKAR** Modelling of three-phase asynchronous motors with saturation and space harmonics, **Ph. D.** presented in **July 1991** at LYON 1.

Note: Thesis & Reports are in French Language

2. Research Projects:

1999-2005: Lebanese University & St-Etienne University

A common Research Project with DIOM laboratory in St-Etienne University: Working on Characterization of thin magnetic films used in passive microwave components (measurement of the permeability of thin magnetic films).

1997-1999: Lebanese University & National Centre for Scientific Research - Beirut - Lebanon

Working on the calculation of parasite phenomena (Saturation and Harmonics) in induction machines with solid rotor.

1996-1997: Lebanese University & National Centre for Scientific Research - Beirut - Lebanon

Working on the Electric conductivity of gases and liquids under very high Electric fields.

1988-1996: Claude Bernard University - Lyon - France

Working on the monitoring of defaults in Electric Machines and on the calculation of iron losses (Hysteresis & Eddy Currents) in Electric Machines and in Hard materials (Ferrite) Using FEM, in collaboration with Gec-Alsthom Society.

1987-1988: Leroy Somers Motors Society - St Symphorian d'Ozon - France

Working on the design of DC & AC electric machines (Computer Aided Design).

1984-1987: Claude Bernard University - Lyon - France

Working on the association of electric machines with static converters in collaboration with Leroy-Somer Society.

Appendix IV - Publications

DEA (MSc), Doctorate (PhD), & HDR:

1. **JAMMAL:** " Performances d'un moteur asynchrone triphasé avec capacités en séries et court-circuiteur parallèle", **D.E.A. (MS) - Génie Electrique**, GRENOBLE/LYON, I.N.P.G./E.C.L. **juin 1985**.
2. **JAMMAL:** "Etude d'un variateur de vitesse asynchrone à fréquence constante et court-circuiteur périodique statique", **Thèse de Diplôme de Doctorat** (Génie électrique), U.C.B.L., ISIDT LYON 1, (**Jury: Président R. PERRET, Examineurs: Ph. AURIOL, B. DAVAT, G. GILLES, G. GRELLET, F. PELTIER**), **Avril 1988**.
3. **JAMMAL:** "Modélisation des convertisseurs électromagnétiques: Application à l'optimisation et à la surveillance", **Diplôme d'Habilitation à diriger des recherches Scientifiques**, Université Lyon I, (**Jury: Président LAJOIE-MAZENC, Examineurs: J.M. KAUFFMANN, R.PERRET, A. RAZEK, R. THOMSON, G. GRELLET**), **juin 1994**.

Journals

1. **Adel F. Al ALAM, Samir F MATAR, Ahmad JAMMAL, Naïm OUAINI:** *Drastic changes of electronic structure, bonding properties and crystal symmetry in $Zr\text{Zr}_2\text{Cu}$ by hydrogenation from ab initio*. Intermetallics 02/2014; 45(1):5-10.
2. **Nazih Moubayed, Mouafac Bernard, Ahmad Jammal:** *A survey of Engineering Education in developing countries - The Lebanese case*. WSEAS TRANSACTIONS ON ADVANCES in ENGINEERING EDUCATION. 01/2009; 6:430.
3. **C. Nader, B. Bayard, A. Sibli, B Sauviac, A. Jammal:** "Méthode des caractérisation en hyperfréquences de matériaux magnétiques et diélectriques", "**Journal de physique IV 124**", pp 153-157, **2005** France.
4. **Chadi Nader, Bernard Bayard, Ali Sibli, Bruno Sauviac, Ahmad Jammal:** *Characterization of ferrimagnetic and dielectric materials with a rectangular waveguide-method*. JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS. 01/2005; Volumes 290-291:90-93.
5. **Chadi NADER, Bernard BAYARD, Ali SIBLINI, Bruno SAUVIAC, Ahmad JAMMAL:** *Characterization of ferrimagnetic and dielectric materials with a rectangular waveguide—method, limits of validity*. Journal of Magnetism and Magnetic Materials 12/2004; 290-291 (Part1) 90-93.
6. **H. YAHOU, J. SEETOHAL, G. GRELLET, A. JAMMAL:** "Detection of Broken Bar or ring in Asynchronous Machines by Spectrum Analysis of the observed Electromagnetic Torque", E.T.E.P., Vol. 5, N° 1, January/February 1995, Germany. (En.)
7. **BOUCETTA, A. JAMMAL, G. GRELLET:** "Computing Ferrite core losses at high frequency by Ferrite Elements Method, Including Temperature Influence", IEEE transactions on magnetic, vol. 30, N°5, Sept. 1994, USA, (ISSN 0018-9464). (En.)
8. **M. CHRAYGANE, M. TEISSIER, A. JAMMAL, J.P. MASSON:** Modélisation d'un transformateur à shunts magnétiques utilisé dans l'alimentation H.T. d'un générateur Micro-ondes à magnétron, Journal de physique III, 4/11, PP (2329 - 2338), novembre 1994, France. (Fr.)

9. **THOLLON, A. JAMMAL, G. GRELLET:** "Asynchronous motor cage fault detection through Electromagnetic Torque measurement", ETEP (European transactions on Electrical Power Engineering), Vol. 3, N° 4, Sep./Oct. 1993. (En.)
10. **ABOU-AKAR, G.GRELLET & A. JAMMAL:** "Space harmonics in saturated cage induction motors. The effects of geometric and winding parameters", Electrical Machines and Power Systems, U.S.A, mars 1991. (En.)
11. **A. JAMMAL, G. GRELLET & J.P. SIBEUD:** "Embrayage ralentisseur électromagnétique asynchrone à rotor massif pour véhicule lourd", Journée S.E.E. "Les actionneurs électriques", Valence novembre 1989. R.G.E n° 6, 1990 PARIS. (Fr.)
12. **JAMMAL & G. GRELLET:** "Modeling and stability of an asynchronous motor drive supplied at constant frequency and voltage", Electrical Machines and Power Systems, U.S.A., volume 16, N° 2, 1989, 16(2):77-88. (En.)

International Conferences:

Education

1. **Ahmad Smaili, Soubhi Abou Chahine, Ahmad Jammal:** *For an Authentic Lebanese Strategic Plan for Engineering Education in Lebanon*. The first Conference on Engineering Education in Lebanon, Order of Engineers and Architects, Beirut, Lebanon; 02/2012
 2. **Soubhi Abou Chahine, Ahmad Smaili, Ahmad Jammal:** *Lebanese Accreditation Board for Engineering Program Lebanese Engineering Programs Accreditation Commission (LEPAC*. The first Conference on Engineering Education in Lebanon, Order of Engineers and Architects, Beirut, Lebanon; 02/2012.
 3. **Bassem Kaissi, Soubhi Abou Chahine, Ahmad JAMMAL :** *New Approaches To Quality Assurance In The Changing World Of Higher Education Title: Towards a New Higher Education Quality Assurance System*,
 4. **B.Kaissi, S. Abou Chahine, A. JAMMAL,** "Towards a New Higher Education Quality Assurance System for Lebanon", ANQAHE conference, Abu Dhabi, 30 March 2009, (Eng).
 5. **A. JAMMAL,** "The Role of Higher Education in Fostering the Culture of Dialogue and Understanding", Key Note, Conference of IAU, 4 - 6 November 2009, Notre Dame University – Louaizeh, Lebanon (Ar/Eng)
 6. **A. JAMMAL:** "Engineering Education in Lebanon, profession & Accreditation", Conference of the order of Engineers in Lebanon, July 2009, Tripoli, Lebanon. (Ar)
 7. **A. JAMMAL:** "The Universities as key partners for good governance in the Euro-Med Region", Conference (MCMI) & World Bank, December 16-17th 2009, Marseille, France (Eng).
-
8. **Bassem Kaissi, Soubhi Abou Chahine, Ahmad Jammal,** "Self-Assessment of Higher Education Programs in Hospitality Management", Conference Lebanese University, faculty of Tourism, Beirut, 1-2 March 2008, (Eng)
 9. **A. JAMMAL:** "Towards a national Qualification Framework in Lebanon", March 2008, Conference organized by Tempus office in Lebanon. (Ar)
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10. **A. JAMMAL:** “External Quality Assurance in higher Education – EQA Making Choices”, *Conference at Holy Spirit University – Kaslik, 21 December 2009, Lebanon.(Eng/Fr)*
 11. **A. JAMMAL:** “Private Higher Education institutions: Towards new standards & regulations”, Conference on the restructuring of Higher education in Lebanon, UNESCO Palace, 10-13 Feb 2003, Beirut, Lebanon (Ar)
 12. **A. JAMMAL:** “The 2009 International Conference on Advances in Computational Tools for Engineering Applications (ACTEA 2009)”, Key Note, NDU, July 14-17, 2009, Lebanon. **26. A. JAMMAL:** “Development of Quality assurance process in Lebanon”, ANQAHE Conference, sep. 2008, Cairo, Egypt. (Eng)
 13. **A. JAMMAL,** “Lebanon situation with respect to Quality Assurance mechanisms in Higher Education”, Seminar 6-7 March 2008, European Tempus QAHEL project. (Eng)
 14. **A. JAMMAL,** “Engineering Education in Lebanon”, Seminar 8-9 April 2008, European Tempus LEPAC Project (Eng)
 15. **Bassem Kaissi, Ahmad Jammal, Mohamed Loutfi, Sobhi Abou Chahine,** “Introduction to Quality Management in Higher Education”, EC Publications under the Tempus Framework, April 2008, (Eng).
 16. **Sobhi Abou Chahine, Ahmad Jammal, Alfredo Moscardini, Bassem Kaissi,** “Self Evaluation in Higher Education Institutions”, EC Publications under the Tempus Framework, May 2008, (Eng).
 17. **A. JAMMAL,** “Creation of a Lebanese Engineering Programs Accreditation Commission (LEPAC)”, Paper for Tempus MEDA Program, Beirut 11-12/1/2007, Lebanon (Eng).
 18. **A. JAMMAL,** “International systems in Technical education: Lebanese Situation and development strategy”, Conference “Society & School for best relations”, Educational AMAL organization, 21 July 2007, Beirut, Lebanon. (Ar)
 19. **A. JAMMAL:** “*Gouvernance et stratégie de l’université «La France et le Liban dans l’Espace européen de l’Enseignement supérieur, ESA 12 mars 2007, Beirut, Lebanon(Fr).*”
 20. **A. JAMMAL:** « Governance in Higher Education », conference on Governance & Management of public services, 18 May 2007, USEK, Lebanon. (Ar).
 21. **A. JAMMAL:** “Formation des ingénieurs - État Actuel et Avenir », Université St Esprit de KASLIK –8 May 2007, Liban (Fr).
 22. **A. JAMMAL:** « Developing regulations in Lebanon towards quality assurance in Higher Education », Conference on developing collaboration between universities, USJ 12 may 2007, Lebanon (Ar).
 23. **A. JAMMAL:** “Quality Assurance & Interaction with Market 7 Decision makers”, Conference organization Azm wa Saadah about relation between universities & market, Tripoli 4 march 2006, Lebanon. (Ar)
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24. **A. JAMMAL,** “Coopération EU-Liban En Matière de Recherche et de Développement », Projets Euro-MEDANet R&D – IRD, paris, March 22-23, 2006, France. (Fr)
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25. **A. JAMMAL** : « Impact des architectures européennes sur la qualité de l'enseignement supérieur au Liban », Ecole Supérieure des Affaires, 5 fév. 2004 (**Fr**).

26. **A. JAMMAL** : « Restructuration de l'enseignement supérieur privé au Liban (Rôle du Haut Conseil de l'enseignement supérieur et de la commission scientifique) », 10 fév. 2004, Ministère de l'éducation et de l'enseignement supérieur, Beyrouth, Liban (**Ar**).
27. **A. JAMMAL** : « Audit des institutions d'enseignement supérieur au Liban », 24 fév. 2004, Ministère de l'éducation et de l'enseignement supérieur, Beyrouth, Liban (**Ar**).
28. **A. JAMMAL** : « Influence of the Scientific Research on Higher Education Evolution », St Esprit de Kaslik University, 18/3/2004, Beirut, Liban (**Ar**)
29. **A. JAMMAL**: "La multiplicité des Universités au Liban : le fait et les objectifs », St Esprit de Kaslik Workshop, 15 novembre 2003, Liban, (**Ar**)
30. **A. JAMMAL**: "La réforme de l'enseignement supérieur : responsabilité politique ou responsabilité universitaire », St Esprit de Kaslik Workshop, 15 novembre 2003, Liban, (**Ar**).
31. **A. JAMMAL**: "Le rôle de l'Université Libanaise dans l'organisation et la restructuration de l'enseignement supérieur", Beyrouth, Université Libanaise, 17-18 Nov. 2003, Liban, (**Ar**).

Engineering:

1. **A. JAMMAL**: " Evolution de l'enseignement de Génie Electrique par le CAO", The 13th Science Meeting, Nov. 2-4, 1999, CNRS, Lebanese American University, Beirut, Lebanon
2. **A. JAMMAL, G. GRELLET**: " Mesure des contraintes rotorique d'une machine asynchrone par l'utilisation de fibre optique en vue de la surveillance", The 13th Science Meeting, Nov. 2-4, 1999, CNRS, Lebanese American University, Beirut, Lebanon.
3. **A. JAMMAL, G. GRELLET**: " Modélisation de la machine asynchrone à rotor massif avec prise en compte des harmoniques d'espace et de permeance", The 13th Science Meeting, Nov. 2-4, 1999, CNRS, Lebanese American University, Beirut, Lebanon
4. **M. TEISSIER & A. JAMMAL**: Self-excitation of a saturated asynchronous generator at non-load balanced or unbalanced load, IMAC'S 96, Nancy France.
5. **H. YAHOU, G. GRELLET, A. JAMMAL & K. BUSAWON**: "On line estimation of load torque in electrical machine for overload diagnostic", Kolloquium Technische Diagnostik, 14-15 mars 1996, Dresden, Germany.
6. **COMTE, G. GRELLET & A. JAMMAL**: "Modelling of a asynchronous machine with solid steel rotor taking account of space and permeance harmonics", EPE Symposium on Electric Drive Design, 4-6 June 1996, Nancy France.
7. **G. SALLES, G. GRELLET & A. JAMMAL**: "Contribution for fault diagnosis of an asynchronous motor's load", Kolloquium Technische Diagnostik, 14-15 mars 1996, Dresden, Germany.
8. **MAKKI, A. JAMMAL & G. GRELLET**: "Effects of space harmonics on capacitor single phase asynchronous motor steady state performance", EPE Symposium on Electric Drive Design, 4-6 June 1996, Nancy France.

9. **MAKKI, A. JAMMAL & G. GRELLET:** "Steady state performance calculation of saturated capacitor single phase asynchronous motor", ICEM'96, 10-12 Sep. 1996, Vigo, Spain.
10. **H. YAHOU, G. GRELLET, A. JAMMAL & K. BUSAWON:** "Load torque estimation in a three phase asynchronous motor", ICEM'96, 10-12 sep. 1996, Vigo, Spain.
11. **H. YAHOU, A. JAMMAL, G. GRELLET:** "Thermal Monitoring of three phase asynchronous machine", proposed to ICEM 94, SUPELEC - PARIS.
12. **M. TEISSIER, A. JAMMAL, M. CHRAYGAN, J.P. MASSON:** "Leakage flux transformer modelling", ICEM 94, SUPELEC - PARIS.
13. **A.K. BUSAWON, H. HAMMOURI, J.C. MARQUES, A. JAMMAL:** " A non linear high gain observer for rotor currents of asynchronous machines", ICEM 94, SUPELEC - PARIS.
14. **AH-JACO, A. JAMMAL, F. BADIN:** "Modelling of battery-PWM inverter-asynchronous motor group for electric vehicle drive chain", VP/CV 93 - SEE, 5-8, Oct. 1993, LA ROCHELLE
15. **BOUCETTA, A. JAMMAL, G. GRELLET:** "Computing ferrite core losses at high frequency by finite elements method including temperature influence ", COMPUMAG'93, Sept. 1993, MIAMI, USA.
16. **M. TEISSIER, A. JAMMAL, G. GRELLET, P. BLANCHARD:** "Self-excitation of a saturated non loaded and loaded asynchronous generator", I.C.E.M.92, 13-17 Sep. 1992, Manchester U.K.
17. **F. BADIN, P. MAILLARD, A. JAMMAL, G. GRELLET:** "Véhicule bi-mode", S.I.A. 8 avril 1992, Toulouse.
18. **F. BADIN, P. MAILLARD, A. JAMMAL, G. GRELLET:** "Electric and hybrid vehicle component", 11th International Electric Vehicle Symposium, 27-30 Sep. 1992, Florence - ITALY.
19. **F. BOUILLAULT, A. JAMMAL, G. GRELLET:** "Determination of the resistance of "plate-shaped" extremity rings of an alternator damper". International workshop on electric and magnetic fields. Liege, BELGIUM, 28-30 September 1992
20. **F. THOLLON, A. JAMMAL, G. GRELLET:** "Détection des défauts des rotors des machines asynchrones à cage par mesure du couple électromagnétique", Journées S.E.E. 10-11 Dec. 1992, PARIS.
21. **BOUCETTA, A. YAHOU, A. JAMMAL, G. GRELLET:** "Influence de la température sur les caractéristiques électriques ET magnétiques des ferrites de grandes dimensions", EPF'92, 18-20 Nov. 1992, Marseille.
22. **P. VENET, G.GRELLET, DARNAND H., A. JAMMAL:** "Etude des paramètres caractérisant le vieillissement thermique accéléré de condensateurs électrolytiques aluminium", EPF'92, 18-20 Nov. 1992, Marseille.
23. **F. BADIN, P. MAILLARD, A. JAMMAL, G. GRELLET:** "Simulation software for calculation of vehicle energy consumption and driveability", International multi-conference "DATA, Systems", 7-9 Dec. 92 Calcutta, India.
24. **BOUCETTA, A. JAMMAL, G. GRELLET, D. WAGNER:** "Calcul des pertes dans les ferrites excités par onde non sinusoïdale à haute fréquence", Colloque Génie électrique 91, Ministère de la recherche ET de la technologie, 5-6 Nov. 1991, Paris.

25. **F. THOLLON, A. JAMMAL, G. GRELLET:** "Asynchronous motor cage fault detection through Electromagnetic Torque measurement", 3d International conference on the Reliability and lifetime of electrical Machines, Oct. 1991, Budapest.
26. **ABOU-AKAR, G. GRELLET & A. JAMMAL:** "Space harmonics in saturated cage induction motors. The effects of geometric and winding parameters", I.C.E.M. 90. August 1990, Cambridge Massachusetts U.S.A.
27. **JAMMAL & G. GRELLET:** "Steady state performance of an asynchronous motor drive with series capacitors and parallel switched impedance", International Conference on Evolution and Modern aspects of Induction Machines, Turin, ITALIE, July 1986.

Books

1. **JAMMAL A. & AI.:** "Technology, Class 7 "Teacher book", National Centre for Research & Pedagogic Development, New Curricula, July 1998
2. **JAMMAL A. & AI.:** "Technology, Class 7 "Student book", National Centre for Research & Pedagogic Development, New Curricula, July 1998
3. **JAMMAL A. & AI.:** "Technology, Secondary education, second year "Student book", National Centre for Research & Pedagogic Development, New Curricula, July 1999.
4. **JAMMAL A. & AI.:** "Technology, Secondary education, second year "Teacher book", National Centre for Research & Pedagogic Development, New Curricula, July 1999
5. **JAMMAL A. & AI.:** "Technology, Secondary education, Third year "Student book", National Centre for Research & Pedagogic Development, New Curricula, July 2000
6. **JAMMAL A. & AI.:** "Technology, Secondary education, Third year "Teacher book", National Centre for Research & Pedagogic Development, New Curricula, July 2000
7. **JAMMAL A. & AI.:** "Guide to introduce & Develop Technology Education in the Arabian countries, UNESCO, Beirut, Lebanon, March 2002.

Curricula Development:

- 1- **JAMMAL A. & AI.:** "Curricula of Electronics, Electrical Engineering, Control and industrial computer and of Technology for the 3 years of the IT of Saida – Lebanese University, department of *Industrial Maintenance*,
- 2- **JAMMAL A. & AI.:** "Curricula of physics for the 3 years of the diploma of superior technician (TS) for all the Industrial specialties.
- 3- **JAMMAL A. & AI.:** "Curricula of Electricity Specialty for the 3 years of the Technical High School (BT) and for the 3 years of the diploma of superior technician (TS).
- 4- **JAMMAL A. & AI.:** "Curricula of Technology for the 3 cycles (primary, intermediate and secondary) of the general education.

Notebooks for University teaching:

- 1- **JAMMAL A.:** "*Electric actuators & Drives*", Course 500 pages, MSc. Electrical Engineering, Cycle C, ISAE, Lebanese University, Beirut 1998 (French Language)
- 2- **JAMMAL A.:** "*Power Electronics*", Course 200 pages, Maitrise électronique, Lebanese University, Beirut 1997 (French & English Languages) – Can be obtained on the Internet, only in French language URL: <http://www.isae.edu.lb>
- 3- **JAMMAL A.:** "*Electric machines*", Course 250 pages, Maitrise électronique, Lebanese University, Beirut 1997 (French & English Languages)

- 4- **JAMMAL A.:** "*Transient analysis of rotating electric machines*", Course 150 pages, UV2 d'électrotechnique de la maîtrise E.E.A. 1990 Lyon. (French Language)
- 5- **JAMMAL A.:** "*Power components*", Course 50 pages, UV1 d'électrotechnique de la maîtrise E.E.A. 1991 Lyon. (French Language)
- 6- **JAMMAL A.:** "*Generalized theory of rotating electric machines* ", Course 100 pages, UV1 d'électrotechnique de la maîtrise E.E.A. 1990 Lyon. (French Language)
- 7- **JAMMAL A.:** "*Introduction to electrical engineering and power electronics*", Course 250 pages, Licence d'Ingénierie Electrique. 1993 Lyon. (French Language)
- 8- **JAMMAL A.:** "*Introduction to UNIX operating system*", Course 150 pages, D.E.S.S. / E.E.A. 1991 Lyon. (French Language)
- 9- **JAMMAL A.:** "*Power electronics: Chopper & inverter* ", Course 150 pages, UV2 d'électrotechnique de la maîtrise E.E.A., Lyon 1994. (French Language).

Industrial Reports

1. **A. JAMMAL & G. GRELLET:** "Étude d'un court-circuiteur d'une machine asynchrone", Presented to LEROY-SOMER MOTORS Society, April 1986.
2. **A. JAMMAL & G. GRELLET:** "Couple et courants de démarrage d'un moteur asynchrone triphasé alimenté par une source de tension quelconque", M.L.S./U.C.B.L.Report, April 1987, LYON.
3. **A. JAMMAL & G. GRELLET:** "Modélisation du fonctionnement d'une machine asynchrone triphasée à capacités série et court-circuiteur statique", MRT Report, N°. 85-B-0283 du 30/10/87, U.C.B. LYON 1.
4. **G. GRELLET & A. JAMMAL:** "Calcul des pertes fer dans les machines électriques à circuit magnétique feuilleté", UCBL/MLS Report, July 1988.
5. **A. JAMMAL:** "Adaptation des fonctions spline à l'interpolation de la courbe de première aimantation au-delà du point de saturation", MLS Report, Nov. 1988.
6. **A. JAMMAL:** "Calcul des moteurs monophasés à condensateur de démarrage et permanent: Paramètres et performances", MLS Report, fev. 1989.
7. **A. JAMMAL:** "Calcul des moteurs à courant continu bobiné ou à aimant", MLS Report, July 1989.
8. **A. JAMMAL & G. GRELLET:** Alternateurs saturés à pôles saillants. MLS/UCBL Report, juin 1991.
9. **A. JAMMAL & G. GRELLET:** Calcul analytique et études de performance des alternateurs MLS. MLS/UCBL Report, fev. 1992.
10. **A. JAMMAL & G. GRELLET:** "Modélisation de la consommation énergétique d'une chaîne de traction électrique (moteurs à courant continu)". INRETS/UCBL Report, nov. 1991.
11. **A. JAMMAL & G. GRELLET:** "Modélisation de la consommation énergétique d'une chaîne de traction électrique (moteurs asynchrones)". Contrat INRETS/UCBL, mai 1992.
12. **A. BOUCETTA & A. JAMMAL:** "Mise en œuvre des ferrites dans les inductances et transformateurs utilisés dans les convertisseurs statiques à fréquence et tensions élevées, dans la gamme de plusieurs KVA à plusieurs centaines de KVA", Contrat GEC-ALSTHOM-MRT-LEEP, janv. 93.