

# ***CURRICULUM VITAE***

**Name: Mohamed Nayel**

## **Contact Addresses**

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## **Biographical Data:**

<b>Place of Birth</b>	Assuit
<b>Date of Birth</b>	April 15 <sup>th</sup> 1973
<b>Nationality</b>	Egypt
<b>Gender</b>	Male
<b>Mother Language</b>	Arabic
<b>Other Languages</b>	English

## **Education**

<b>March 2004</b>	:	Dr. Eng., Graduate School of Engineering, Doshisha University, Japan.
<b>May 1999</b>	:	M. Sc., Department of Electrical Engineering, Assiut University, Egypt.
<b>May 1996</b>	:	B.Sc., Department of Electrical Engineering, Assiut University, Egypt.

<b>Ph. D. Thesis entitle</b>	:	Study of Transient Characteristics of Electric Grounding System
<b>M. Sc. Thesis entitle</b>	:	Assessment of Electric and Magnetic Fields in Power Substations
<b>B. Sc. Project entitle</b>	:	Control of Reactive Power by using SVC

## **Professional Experience**

<b>July 2009-till now</b>	Associate professor, Electric Engineering Department, Faculty of Engineering, Assiut University, Assiut, Egypt
<b>September 2010-August 2013</b>	Lecturer (UK based system) Electrical and Electronics Engineering Department, Xi'an Jiaotong Liverpool University (XJTLU), Suzhou, China
<b>Spetember 2010-August 2013</b>	Recognized Teacher Liverpool University based at XJTLU
<b>July 2009-September 2009</b>	Visiting researcher, Doshisha University, Kyoto, Japan
<b>December 2007-July 2009</b>	Assistant professor, Electric Engineering Department, Faculty of Engineering, Assiut University, Egypt
<b>December 2005-December 2007</b>	Postdoctoral station China Southern Power Grid-Technology Research Cenetr, Postdoctor Tsinghua University
<b>May 2004 – December 2005</b>	Assistant professor, Electric Engineering Department, Faculty of Engineering, Assiut University, Egypt
<b>October 2000 – March 2004</b>	Doctor student, Graduate School of Engineering, Doshisha University, Japan
<b>June-1999 - October 2000</b>	Instructor, Electric Engineering Department, Faculty of Engineering, Assiut University, Egypt
<b>December 1996 - June1999</b>	Teaching assistant, Electric Engineering Department, Faculty of Engineering, Assiut University, Egypt

## **Teaching experience**

Teaching the following undergraduate and graduate courses :

- |  |   |
|--|---|
| - Experimental Skills and Sustainability | - Sustainable Energy and Environment          |
| - Energy Conversion and Power Systems    | - Power Generation, Transmission and Relaying |
| - Energy Use and Conversion,             | - Magnetic Field Theory                       |

- Electric Field Theory
- Supervise Electric Power Section laboratory
- Protection of Power System
- HVDC and static var compensator
- Power Electronics
- Electric Power System Technology
- Control System
- Electric and Electronics Measurements
- Protection from electric current hazards
- Advanced Protection of Power System
- Electromagnetic Transients in Power System
- Electromagnetic Compatibility in Power System
- Signal Processing

Assisted in teaching the following undergraduate courses at Assiut University, Egypt:, Power system control, Power system switchgear and protection, electromagnetic theory, measurements and instrumentation, high voltage, and power system.

Assisted in teaching labs for undergraduate courses at Assiut University, Egypt: Power system and high voltage engineering, Electric Machine, and Measurements and Instrumentation

- Assisted in supervising B. Sc. Projects for undergraduate students at Assiut University, Egypt, and at Doshisha University, Japan.
- Shared in supervising B. Sc. Projects for undergraduate students at Assiut University, Egypt from 2004 to 2005 and from 2008 to 2010.
- Supervisor B.Sc Projects for Undergraduate students at Xi'an JiaoTong Liverpool University from 2010 to now.

## Official Experience

- Working for the faculty of Engineering, Assiut University, Egypt and quality assurance program for graduate and under graduate programs and curriculum development.
- Engineering consultation for community service through the faculty engineering consultation center, Assiut University, Egypt
- Member of group for the project “Assiut University Management Information System (MIS)”, Assiut University, Egypt.
- Member of Electric Engineering Department council, Assiut University, Egypt, for year 2004/2005.
- Key researcher of the project “Study on Lightning overvoltage performances and protection strategy of UHVDC  $\pm 800$ kV transmission line”, China Southern Power Grid, China.
- Research committee member of electrical engineering department, Xi'an JiaoTong Liverpool University
- FYP committee member of electrical engineering department, Xi'an JiaoTong Liverpool University
- Design MSc program (Sustainable Energy Technology – Liverpool University-based at XJTU)
- MSc program coordinator (Sustainable Energy Technology – Liverpool University-based at XJTU)

## Research Projects

- Study of grounding resistivity measurements in vertical and sloped layer ground (China 2012)
- Study on Lightning overvoltage performances and protection strategy of UHVDC  $\pm 800$ kV transmission line(China Dec. 2005-Dec. 2007)
- Estimation the magnetic field inside Engineering Syndicate Project for Engineering's Building near 132 kV Cement factory transmission line. (Egypt 2000)
- Design magnetic field shielding for the Engineering Syndicate Project for Engineering's Building. (Egypt 2000)
- Study the effect of connection wires on anti-earthquake building transient voltage due to lightning stroke the building. (Japan 2004)

## Thesis Supervisor

He share supervisor in the following thesis

- MSc. “Modeling of grounding systems in homogeneous and nonhomogeneous ground”, Assiut University, Egypt.

## Awards:

**2000** : Three years doctor degree MONBUSHO Scholarship (Japan).

**2001** : Harris Science School Foundation Grant, Doshisha University(Japan).

**2003** : Harris Science School Foundation Grant, Doshisha University(Japan).

**2005** : Postdoctor at Tsinghua University and postdoctoral station of China Southern Power Grid Co. (China).

**2009** : 2 months visiting JASSO fellowship at Doshisha University (Japan)

**2011** : China southern power grid electric power research insititute was awarded the first prize of national award for science and technology progress for the science and technology project” the comprehensive design of autonomous technology development and engineering practice of HVDC transmission project”. I was responsible for the research project “Study on Lightning overvoltage performances and protection strategy of UHVDC  $\pm 800$ kV transmission line”, which had made certain contribution to the wening project.

## Research Experience:

Experience in high-voltage measurements and calculations including assessment of electric and magnetic fields.

Experience in electromagnetic transient measurements.

Computer skills: Matlab, Fortran, PSCAD/EMTP, Excel, Windows.

## Research Interest:

Interests lie in the following areas:

1. **Sustainable Energy, renewable energy;** (The research in this area concern about the application of renewable energy sources such as Solar and wind energy. It is including integration of renewable energy with electric power system and isolated systems. Zero energy system will be studied to improve the use of renewable energy system.)
2. **Power electronics, Harmonic analysis;** (The research in this area concern about harmonics in power system and smart grids power electronics. Analysis of harmonics effects and contents due to the presence of power electronics is very necessary to design the filters and improve electric power system operation)
3. **Grounding System, Grounding electrodes modelling, Mutual ground impedance. Lightning;** (The research in this area concern about ground resistivity measurement at different ground models (vertical layer ground, horizontal layer ground and sloped layer ground). Study of grounding system at different ground model. Improvement of grounding system design by using genetic algorithm)
4. **Electromagnetic transient measurements, Lightning, EMC, EMI and electromagnetic induction;** (The research in this area concern about lightning stroke assessment for transmission lines and air terminals. Developing different techniques to estimate attractive areas and shielding failure numbers.)
5. **High-voltage measurements and calculations including assessment of electric and magnetic fields;** (The research in this area concern about electric and magnetic field measurement around electric power system elements and appliances. Improvement of modelling for calculating electric and magnetic fields)

## Attended Conferences

- 1- 2012 Africa Power Energy System (AfricaPES 2012), International Committee.
- 2- 2012 Asia-Pacific Power and Energy Engineering Conference (APPEEC 2012), Session Chairman.
- 3- 2011 Asia-Pacific International Conference on Lightning (APCL2011), Domestic committee and Session Chairman.
- 4- 2009 Middle East Power System Conference (MEPCON 2009) Organizing committee.
- 5- The 6<sup>th</sup> International Conference on Power Transmission @ distribution Technology 2007, Guangzhou China, Nov. 10-12 2007.
- 6- International Symposium on International Standards for Ultra High Voltage, IEC/ Cigre, Beijing, China, 18-21 July 2007.
- 7- The 4<sup>th</sup> Asia Lightning Protection and Standardization Forum, Guangzhou, China, 2007.
- 8- International Workshop on Engineering Education for Sustainable Development, UNESCO, Tsinghua University, Beijing, China, 1-7 November, 2006.
- 9- International Conference on Power System Technology, Power Con, Chongqing, China, October 22-26, 2006.
- 10- Asia Pacific Conference on Environmental Electromagnetics, CEEM'2006, Dalian, China, 1-4 Aug., 2006.
- 11- International Conference on Electrical Engineering, Yong Pyong Resort, Korea, July 9-13, 2006.

## Reviewer

- 2012 - Present: IEEE Power Delivery, (reviewer)
- 2012 – Present: Geophysical Journal International, (reviewer)
- 2009 - present: Journal of Electromagnetic Waves and Applications (JEMWA), (reviewer)
- 2009 - present: Progress in Electromagnetic Research (PIER, PIER B,C,M, PIER Letters), (reviewer)
- 2009 - present: European Transaction of Electric Power, (reviewer)

## Others

He is being considered for inclusion in the 2010 Edition of Who's Who in the World.

## List of Publications

### Journals

#### 2013

- [1] **M. Navel**, "Investigation of ground frequency characteristics", Journal of Electromagnetic Analysis and Applications, vol. 5, 322-327, 2013.
- [2] JING Wenlong, **Mohamed Navel**, "Energy Audits and Energy-saving Potential Analysis of the Science Building at Xi'an Jiaotong-Liverpool University in Suzhou", Applied Mechanics and Materials, Vols. 291-294, pp 1044-1049, 2013
- [3] Saiyu Shi, Fei Cheng, **Mohamed Navel**, "Discuss Hydrogen Production in Jiangsu Province using Non-grid-connected Offshore Wind Power", Applied Mechanics and Materials, Vols. 291-294, pp 2102-2108, 2013
- [4] Fei Cheng, Saiyu Shi, **Mohamed Navel**, "Using Smart System to Improve Electric Power Grid", Applied Mechanics and Materials, Vols. 291-294, pp 2096-2101, 2013

#### 2012

- [5] **M. Navel**, Z. Jie, J. He, "Analysis Shielding Failure Parameters of High Voltage Direct Current Transmission Lines" Journal of Electrostatics, vol 70, no. 6, pp.505-511, December 2012. (Impact factor 1.08)
- [6] **M. Navel**, "Investigation of Wave Propagation Penetration Depth in Multi-Layer Ground", IEEEJ Transaction of Power and Energy, vol. 132, no. 8, pp. 728-733, August 2012. (Impact factor 0.36)

#### 2011

- [1] **M. Navel**, "Investigation of Lightning Rod Shielding Angle ", M. Navel, "Investigation of Lightning Rod Shielding Angle ", IEEEJ Transaction of Power and Energy, vol. 131, no. 10, pp. 855-858, October 2011. (Impact factor 0.36)

#### 2010

[2] **M. Navel**, Z. Jie, J. He, " Significant Parameters Affecting A Lightning Stroke To A Horizontal Conductor", Journal of Electrostatics, vol. 86, no. 5, pp. 439-444, October 2010. (Impact factor 1.08)

#### **2009**

[3] **M. Navel**, " Study of Air Terminals Shielding Due to Lightning Leader Slant" JES Journal of Engineering Science of Assiut University, vol. 37, no. 1, January 2009.

[4] **M. Navel**, " Analysis Lightning Attractive Areas around HVDC Transmission Line" Electric Power Components and Systems, vol. 37, no. 2, pp. 146-157, February 2009. (Impact factor 0.681)

#### **2008**

[5] **M. Navel**, " Air conditions effects on lightning attractive distance" International Journal of Pure And Applied Science, vol. 1, no. 4, pp 50-56, April 2008.

#### **2007**

[6] **M. Navel**, Z. Jie, J. He, Z. Cai, Q. Wang, " The effect of air density and humidity on lightning striking distance", Southern Power System Technology, vol. 1, no.2, pp. 36-52, December 2007 (in Chinese).

[7] M. Abdel-Salam, A. Ahmed, **M. Navel**, Aboelsood Zidan, " Surface Potential and Resistance of Grounding Grid Systems in Homogeneous Soil" Electric Power Components and Systems, vol. 35, no. 10, pp. 1093-1109, October 2007. (Impact factor 0.681)

[8] He Jin-liang, Zhao Jie, **M. Navel**, Cai Zong-yuan, " Influence of conductor voltage on the striking distance of electromagnetic model", Southern Power System Technology, vol. 1, no. 1, pp. 14-19, October 2007 (in Chinese).

#### **2006**

[9] **M. Navel**, Z. Jie, J. He, Z. Cai, Q. Wang, "Analysis with charge simulation method on shielding failures of  $\pm 800$ kV DC transmission line due to lightning stroke", Southern Power System Research, vol. 2, no. 4, pp. 1-5, July 2006 (in Chinese).

#### **2003**

[10] Y. Baba, **M. Navel**, N. Nagaoka, A. Ametani and S. Sekioka, "Numerical analysis of wave propagation characteristics on a buried horizontal conductor by an FDTD method", IEEJ Trans., vol. B-123, no. 11, pp. 1319-1327, 2003. (Impact factor 0.36)

[11] Y. Tsuchiya, **M. Navel**, A. Ametani, S. Sekioka, Y. Miyamoto and T. Kosumi, " An experimental investigation of transient voltages in an intelligent building due to lightning with special reference to grounding", IEEJ Trans., Vol. B-123, No. 11, pp. 1273-1279, 2003. (Impact factor 0.36)

[12] **M. Navel**, H. Ibaraki, A. Ametani, N. Nagaoka and N. Mori, "A study of transient characteristics of two horizontal grounding rods", Science & Eng. Review of Doshisha Univ., vol. 44, no.3, pp. 59-65, October 2003.

#### **2002**

[13] **M. Navel**, A. Ametani and N. Nagaoka, " Calculation of an induced voltage to an overhead loop from a grounding system," Science & Eng. Review of Doshisha Univ., vol. 43, no. 3, pp. 51-56, October 2002.

[14] M. Abdel-Salam, S. Abdel-Sattar, A. Ibrahim and **M. Navel**, "Successive imaging technique for electric field distribution around conductors above a two-layer earth", Electric Power Components and Systems, vol. 30, no. 7, pp. 723-739, July 2002. (Impact factor 0.681)

#### **2001**

[15] M. Abdel-Salam, S. Abdel-Sattar, A. Ibrahim and **M. Navel**, " Magnetic field distribution around current-carrying conductor above a two-layer ground," Electric Power Systems Research, vol. 58, no. 3, pp. 197-203, July 2001. ( Impact factor 1.726)

## **Conferences**

#### **2012**

[16] T.O. Ting, K.L. Man, Sheng-Uei Guan, **Mohamed Navel** and Kaiyu Wan, "Weightless Swarm Algorithm (WSA) with Clustering for Dynamic Optimization Problems", NPC 2012, Lecture Notes in Computer Science (LNCS), vol. 7513, pp. 513-520, 2012.

[17] **M. Navel**, Boyang Lu, Yu Tian, " Study of Soil Resistivity Measurements in Vertical Two-Layer Soil Model" APEEC2012, 2012 Asia-Pacific Power and Energy Engineering Conference, Shanghai, China, March 27-29, 2012.

#### **2011**

[18] **M. Navel**, " Investigation of Lightning Rod Striking Distance" 7<sup>th</sup> Asia-Pacific International Conference on Lightning, Crowne Plaza Chengdu, Chengdu, China, November 1-4, 2011

[19] **M. Navel**, Zhao Jie, Jinliang He " Analysis of AC and DC Flat Transmission Lines Lightning Shielding Failure" 7<sup>th</sup> Asia-Pacific International Conference on Lightning Crowne Plaza Chengdu, Chengdu, China, November 1-4, 2011.

[20] **M. Navel**, " Grounding resistivity measurements analysis of sloped-layered soil" ISH 2011, 7<sup>th</sup> International Symposium on High Voltage Engineering, paper A-029, August 22-26, 2011.

- [21] **M. Navel**, "Transient Characteristics analysis of grounding Electrode in Two Layer soil", ISH 2011, 7<sup>th</sup> International Symposium on High Voltage Engineering, paper A-030, August 22-26, 2011.

#### **2010**

- [22] **M. Navel**, "Study Transient Impedance of Spherical Electrode Buried in The ground"MEPCON'10, Cairo, Egypt, December 19-21, 2010.
- [23] **M. Navel**, Z. Jie, J. He, "Analysis of Significant Parameter Affecting the Shielding Failure of HVDC-TL ", IAS 45th Annual Meeting, Houston, TX USA, IAS08p09, October 3-7, 2010.
- [24] **M. Navel**, "Investigation of Lightning Rod Shielding Angle ", IAS 45th Annual Meeting, Houston, TX USA, IAS08p10, October 3-7, 2010.
- [25] **M. Navel**, "Estimation of Lightning Shielding Failure Zones Around AC Transmission Lines", A Colloquium on : Lightning and Power Systems Lightning, Kuala Lumpur, Malaysia, May 16 -19, 2010.

#### **2008**

- [26] **M. Navel**, "Study Air Conditions Effects on Lightning Attractive Distance", First International Conference of Energy Engineering, ICEE-1, Aswan, Egypt, December 29-31, 2008.
- [27] **M. Navel**, "Influence of Horizontal Lightning Leader on Lightning Rod Shielding", UPEC 08, Padova-Italy, September 1-4, 2008.

#### **2007**

- [28] **M. Navel**, Z. Jie, J. He, Z. Cai, Q. Wang, "Study Different Charges Distribution of Lightning Leader Strike Horizontal Conductor" 15<sup>th</sup> ISH, Ljubljana, Slovenia, August 27-31, 2007
- [29] **M. Navel**, Z. Jie, J. He, Z. Cai, Q. Wang, "Electric Field Analysis Around Horizontal Conductor Due to Lightning "15<sup>th</sup> ISH, Ljubljana, Slovenia, August 27-31, 2007
- [30] **M. Navel**, Z. Jie, J. He, Z. Cai, Q. Wang, "Using charge simulation method to analysis shielding failure of UHVDC  $\pm 800$ kV transmission line under lightning stroke", ICEE 2006 International Conference in Electrical Engineering 2006, July 9-13, 2006, YongPyong Resort, Korea, paper 003-000611. (Represented in chinese at The 6<sup>th</sup> International Conference on Power Transmission @ distribution Technology 2007, Guangzhou China, November 10-12, 2007

#### **2006**

- [31] **M. Navel**, Z. Jie, J. He, Z. Cai, Q. Wang, "The Effect of UHVDC  $\pm 800$  kV TL Voltage on Electrogeometric model of TL Shielding", China Southern Power Grid Technology Forum, Yunnan, China, November 2006.
- [32] **M. Navel**, Z. Jie, J. He, Z. Cai, Q. Wang, "Study of lightning stroke to grounded and free horizontal conductor", CEEM'2006, Asia-Pacific Conference on Environmental Electromagnetics, Dalian, China, pp.49-55, August 1-4, 2006.
- [33] **M. Navel**, Z. Jie, J. He, Z. Cai, Q. Wang, "Study of step and touch voltages in resistive/capacitive ground due to lightning stroke", Asia-Pacific Conference on Environmental Electromagnetics, CEEM'2006, Dalian, China, pp.56-60, August 1-4, 2006.
- [34] **M. Navel**, Z. Jie, J. He, A. Ametani, Z. Cai, Q. Wang, "A study of zero reference effects on electromagnetic transient measurements of a grounding electrode" , 2006 IEEE International Symposium on Electromagnetic Compatibility, Oregon Convention Center, Portland, Oregon, USA, August 14-18, 2006.
- [35] **M. Navel**, J. Zhao, J. He, A. Ametani, Z. Cai, Q. Wang, "Experimental study of induced voltage between two bare horizontal electrodes in ground", 2006 IEEE International Symposium on Electromagnetic Compatibility, Oregon Convention Center, Portland, Oregon, USA, August 14-18, 2006.
- [36] **M. Navel**, Z. Jie, J. He, N. Nagaoka, Z. Cai, Q. Wang, "EMTP model of anti-earthquake building stroked by lightning", 2006 International Conference on power System Technology Chongqing, China, October 22-26, 2006.
- [37] **M. Navel**, Z. Jie, J. He, Z. Cai, Q. Wang, "Analysis of long electrode transient parameters", 2006 International Conference on power System Technology Chongqing, China, October 22-26, 2006.

#### **2005**

- [38] M. Ahmed, G. Karady, **M. Navel**, "A New Method for Predicting Rotor Angle Stability", MEPCON'05, Port Said, Egypt, December 13-15, 2005
- [39] **M. Navel**, M. Ahmed, "Model parameters of earthing electrodes in two-layer earth", Sixth Regional Conference for National Committees of CIGRE in Arab Countries, Cairo- Egypt, November 21-23, 2005.
- [40] **M. Navel**, B. Kanatani, A. Ametani, Jinliang He "A Study on Grounding Grid Transient Characteristics Due to Lightning", ISH 2005, Tsinghua University, Beijing, China, August 25-29, 2005.

#### **2003**

- [41] **M. Navel**, A. Ametani and N. Nagaoka, "Grounding impedance modeling in frequency domain by using numerical Laplace transform", IEEE Research Meeting, Paper HV-03-107, pp. 45-49 Nov. 2003.
- [42] A. K. Mishra, **M. Navel**, N. Nagaoka and A. Ametani, "Z-transfer function composition of a grounding electrode model circuit using genetic algorithm", IEEE Japan Kansai-Branch Meeting, G120, November 2003.
- [43] Y. Baba, **M. Navel**, S. Sekioka, N. Nagaoka and A. Ametani, "Transient analysis of buried horizontal conductor by an FDTD method", UPEC'03 Proceedings, Thessaloniki, Greece, pp 117-120, September 2003.

[44] Y. Baba , **M. Nayel**, N. Nagaoka, A. Ametani and S. Sekioka, "Numerical analysis of wave propagation characteristics on a buried horizontal conductor by an FDTD method", Proceedings of IWHV'03, vol. 2, pp. 141-146, January 2003.

[45] Y. Tsuchiya, **M. Nayel**, A. Ametani, S. Sekioka, Y. Miyamoto and T. Kosumi," An experimental investigation of transient voltages in an intelligent building due to lightning with special reference to grounding", Proceedings of IWHV'03, Vol. 2, pp. 19-24, January 2003.

#### **2002**

[46] A. Ametani, **M. Nayel**, S. Sekioka and T. Sonoda "Field measurements of surge propagation characteristics on a counterpoise", UPEC'02 Proceedings, Staffordshire UK, vol. 1, pp. 188-192, September 2002.

[47] A. Ametani, **M. Nayel**, S. Sekioka and T. Sonoda," Basic investigation of wave propagation characteristics on an underground naked conductor", ICEE '02 Proceedings, Jeju, Korea, Vol. 5, pp. 2141-2146, July 2002.

[48] **M. Nayel**, A. Ametani, N. Nagaoka, Y. Baba and S. Sekioka," A study on a mutual grounding impedance and its transient characteristics", IEEE/PES T&D'02 Proceedings, Yokohama, Japan, vol. 2, pp. 1270-1275, October 2002.

#### **2001**

[49] A. Ametani, **M. Nayel** and S. Sekioka," A study on a transient induced voltage to an overhead circuit from a grounding system" MEPCON'01 Proceedings, Helwan Egypt, pp. 867-871, December 2001.

[50] A. Ametani, T. Kosumi, **M. Nayel**, Y. Tsuchiya and S. Sekioka, " An experimental study on a grounding resistance of rod electrodes", UPEC'01 Proceedings, Swansea UK, 2001.

[51] T. Kosumi, **M. Nayel**, Y. Tsuchiya, A. Ametani and S. Sekioka, " Electromagnetic transient behavior of intelligent building connected to grounding rod system," Annual Meeting of IEEJ '01, No. 7-204, pp. 2961-2962, 2001.

#### **1998**

[52] M. Abdel-Salam, S. Abdel-Sattar, A. Ibrahim and **M. Nayel**," Successive imaging technique for field distribution around conductors above a two-layer earth," IEEE-IAS 33 Annual Meeting '98, St. Louis, Missouri, USA, Vol. 3, pp. 1998-2004, October 1998.

### **Books**

- [1] **Mohamed Nayel**, Assessment of Electric and Magnetic Fields in Power Substations, Master thesis, Assiut University, Assiut Egypt, 1999.
- [2] **Mohamed Nayel**, Study of Transient Characteristics of Electric Grounding System, Doctor thesis, Doshisha University, Kyoto, Japan, 2004.
- [3] **Mohamed Nayel**, Technical Report: Lightning Shielding Failure Analysis of UHVDC  $\pm$  800 kV Transmission Line, Technical Research Center, China Southern Power Grid Company, Guangzhou, China, Nov. 30, 2007.

### **Essays**

- [1] **Mohamed Nayel**, " Education and Research in Assiut University", IEEJ Journal, Vol. 124, No. 8, August 2004.

### **Patents**

- a. M. Nayel, et al. The calculation method of lightning striking distance to transmission line based on the electrogeometry model, China Invention Patents Under audit
- b. M. Nayel, et al. Nonconventional design of  $\pm$ 800 kV UHVDC transmission line tower, China Invention Patents Under audit.