Dr. Eng. Ahmed Elyamani

Cairo University
Faculty of Archaeology
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1-   PERSONAL INFORMATION

FULL NAME: Ahmed Elyamani Ali
DATE OF BIRTH: 15/5/1982
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2-   EDUCATION

- **PhD in Structural Engineering** (February 2015)
  - Department of Construction Engineering, Technical University of Catalonia, Barcelona, Spain.
  - Thesis Title: 'Integrated monitoring and structural analysis strategies for the study of large historical construction. Application to Mallorca cathedral'
  - The PhD thesis was carried out within the research project NIKER (www.niker.eu), please see below for more details about that project.
  - The PhD tackled the problem of how to employ multidisciplinary techniques including dynamic identification tests, dynamic monitoring, thermography monitoring, and advanced numerical modelling and analysis for increasing the level of knowledge about a historical structure when assessing its structural safety especially against earthquakes.
- **MSc in Structural Engineering** (July 2009)
  - Joint European Double Degree from University of Padova (Padova, Italy) and Technical University of Catalonia (Barcelona, Spain).
  - The MSc was carried out within the Erasmus-Mundus MSc program Structural Analysis of Monuments and Historical Structures (www.msc-sahc.org).
  - Thesis Title: 'Wind and earthquake analysis of spire of cimborio of Barcelona cathedral'
  - The MSc thesis results were essential in the conservation project of the spire of Barcelona cathedral. This spire suffered from severe corrosion of the metallic ties used in reinforcing its stone beams; therefore, it was entirely dismantled and reconstructed. The role of these ties in the resistance of the spire against wind and earthquakes was investigated by the MSc thesis via advanced numerical analysis.
- **Diploma in Fine Restoration of Monuments** (May 2007)
  - Department of Archaeological Conservation, Faculty of Archaeology, Cairo University, Egypt.
  - Studied during two academic years (2005/2006 and 2006/2007) courses in fine restoration of stone, wood, metals, mural paintings, stucco, among other courses.
- **BSc in Structural Engineering** (May 2004)
  - Department of Structural Engineering, Faculty of Engineering, Cairo University, Egypt.

3-   WORK EXPERIENCE

- **Researcher in the international research project NIKER (2010-2012), budget of €3.6 million.**

- Researcher in the project: **N**ew **I**ntegrated **K**nowledge based approaches to the protection of cultural heritage from **E**arthquake-induced **R**isk, acronym 'NIKER', website (www.niker.eu),
- The project included 18 partners (Faculties and Companies) from 12 countries (including Italy, Spain, UK, Germany, Morocco, and Egypt among others).
- It investigated the effects of earthquakes on historical constructions via extensive experimental and numerical studies and the application to several case studies.
- My specific contribution was in the work package WP9 led by Prof. Pere Roca (Technical University of Catalonia, Spain). WP9 was for the development and application of knowledge-based assessment procedures to real case studies.
- Within WP9, I participated in 1) designing and performing in-situ dynamic identification tests on the case studies of Ras Cherratine Medersa (Morocco) and Mallorca cathedral (Spain) followed by performing system identification and 3D finite element model updating of both case studies, 2) designing and installing dynamic monitoring system and seasonal Infrared (IR) thermography monitoring system in Mallorca cathedral followed by analysing the obtained data, 3) seismic assessment and intervention proposals for Mallorca cathedral, 4) writing two reports about all the investigation activities performed in the aforementioned case studies, 5) collated contributions of all partners in WP9 and issued the five reports of the work package and 6) attended the project meetings: mid-term meeting (Athens-Greece); 27 months meeting (Prague, Czech Republic); final meeting (Padova-Italy) and NIKER special session in SAHC 2012 conference (Wroclaw-Poland).

- **Assistant Professor of Structural Conservation of Historical Structures and Sites, Archaeological Conservation Department, Faculty of Archaeology, Cairo University, 4/2005 – present**

    Teaching undergraduate and postgraduate courses including: Preparation of restoration projects; Properties and testing of materials; Intervention techniques; Shoring and securing of historical structures; Structural analysis of historical structures; Conservation of historical timber structures; Quantities takeoff; Soil mechanics and foundations; Management of historical sites; Architectural drawing; Survey; Mathematics; Graduation projects.

4-   PUBLICATIONS

(1) **A. Elyamani ,** (2018) "Re-use proposals and structural analysis of historical palaces in Egypt: the case of Baron Empain palace in Cairo", Scientific Culture, 4(1), pp. 1-27.
(2) **A. Elyamani,** and P. Roca (2018) "A review on the study of historical structures using integrated investigation activities for seismic safety assessment. Part I: dynamic investigation", Scientific Culture, 4(1), pp. 29-53.
(3) **A. Elyamani,** and P. Roca (2018) "A review on the study of historical structures using integrated investigation activities for seismic safety assessment. Part II: model updating and seismic assessment", Scientific Culture, 4(1), pp. 54-74.

(4) **A. Elyamani, ,** O. Caselles, P. Roca, and J. Clapes (2017) "Dynamic Investigation of a Large Historical Cathedral", Structural Control and Health Monitoring, 24(3), pp. 1-25.

(5) **A. Elyamani,** P. Roca , O. Caselles, and J. Clapes (2017) "Seismic safety assessment of historical structures using updated numerical models: the case of Mallorca cathedral in Spain", Engineering Failure Analysis, 74, pp. 54-79.

(6) **A. Elyamani**, S. Moustafa (2017) "Typical reasons for degradation of historical Islamic structures and its surroundings and intervention proposals: the case study of Queen Saffiya mosque in Cairo", 20th Int. Conf. of General Union of Arab Archaeologists, Egypt, 11-13 Nov. 2017.

(7) Adel, N. Mohamed, N. Abdel-Maksoud, M. Sobhy, D. Hossam El-Din and **A. Elyamani** (2017) "On the conservation and re-use of Sednaoui El-Khazender historical building in Attaba, Cairo", First Arab Conf. on Restoration and Reconstruction, 9-11 Oct. 2017, Egypt.

(8) E. Salah, **A. Elyamani** (2017) "Employing three dimensional virtual shows in the re-use of historical structures and sites", First Arab Conf. on Restoration and Reconstruction, 9-11 Oct. 2017, Egypt.

(9) **A. Elyamani** (2016) "Conservation-oriented structural analysis of the spire of Barcelona cathedral", International Journal of Materials Science and Applications 5(6-2), pp. 1-9.

(10) A. O. D. El-Derby and **A. Elyamani** (2016) "The adobe barrel vaulted structures in ancient Egypt: a study of two case studies for conservation purposes", Mediterranean Archaeology and Archaeometry, 16 (1), pp. 295-315.

(11) S. Moustafa, , S. Anwar, D. Ashraf, S. Ramadan, and **A. Elyamani** "The tomb of the High Priest of Aton in the regime of King Akhenaten: description, damage and restoration works", 4th Int. Conf. "Egypt and Mediterranean Countries Through Ages", Cairo, Egypt, 15-19 Oct., 2015.

(12) O. Caselles, J. Clapes, P. Roca and **A. Elyamani** (2012) "Approach to seismic behavior of Mallorca Cathedral", 15th World Conference on Earthquake Engineering. 24-28 September 2012, Lisbon, Portugal.

(13) **A. Elyamani**, O. Caselles, J. Clapes and P. Roca (2012) "Assessment of dynamic behavior of Mallorca Cathedral", 8th International Conference on Structural Analysis of Historical Construction. 15-17 October 2012, Wrocław, Poland.

5-   COMPUTER KNOWLEDGE

Structural Engineering programs: SAP2000, DIANA

Drawing Programs: AutoCAD

Other Computer Software: SPSS, Word, Excel, PowerPoint