

# Curriculum Vitae of Dr. Md Ashiqur Rahman



## Md Ashiqur Rahman

📍 Calle Margarita Xirgu 10, 06 – A, 50018 Zaragoza, Spain

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📅 Date of birth: 31<sup>st</sup> December 1989 | 🇬🇧 Nationality: Bangladeshi | 🏆 Sex: Male

### Academic Accomplishments

#### 1. Title of Qualification Awarded

Dates

#### Marie Curie Doctorate in Archaeological & Cultural Heritage MATerials Science (ED-ARCHMAT)

EU funded Marie Curie Action Innovative Training Network (MSCA-ITN) under the HORIZON 2020 Program

16<sup>th</sup> March 2019 to 16<sup>th</sup> June 2022; PhD Defense and Graduation: 22<sup>nd</sup> September 2022

**Result: *Sobresaliente Cum Laude*** (Highest possible Distinction in the Spanish academic system)

#### PhD Thesis Title: Laser Based intervention in Archaeological Materials and Museum Artifacts

**Project Description:** Definition and Comparison of the state-of-the-art conservation methods and their influence on selected archaeological museum stored artifacts. Evaluation of laser sample interaction, taking into account laser emission parameters, and the physicochemical properties of the material under study (characterizing by SEM-EDX, XPS, XRD, XRF, FTIR-ATR, LA-ICP-MS, Raman spectroscopy, IR Thermal Camera etc.). Establishment of laser tool selection criteria for decontamination/conservation of museum artifacts. Analyze the possibilities that the new short pulse lasers open in CH conservation.

Comparison between laser cleaning-based methods and alternative tools. Development of a dynamic, automated or semi-automated laser conservation method for archaeological artifacts and samples, that includes some methods for evaluating the quality of the treatment and reducing the risks associated with laser radiation.

**Project Website:** <http://www.ed-archmat-ejd.eu/index.php/projectESR8.html>

**University of Burgos (Spain) and University of Evora (Portugal) in cotutelle with Spanish National Research Council (Aragón Nanoscience and Materials Institute : University of Zaragoza, Spain).**

#### Research Project details

Name of the Institution Awarded Degree

#### 2. Title of Qualification

Dates

Research Title

Name of the Institution

#### Marie Curie PhD- Technology Driven Sciences : Technologies for Cultural Heritage (Tech4Culture)

EU funded Marie Curie Action COFUND project under the H2020-MSCA-COFUND scheme and with the support of the banking foundation Compagnia di San Paolo.

1<sup>st</sup> November 2018 to 8<sup>th</sup> February 2019

An Improved, *In situ* Monitoring System – a Technology Employed for Cultural Heritage Noticing, Investigations and Conservations (i2MS – TECHNIC)

**University of Turin, Italy**

#### 3. Title of Qualification Awarded

Dates

Major Field/Subject

Thesis Title (1)

Thesis Title (2)

Thesis Title (3)

#### Erasmus Mundus European Master in ARChaeological MATerials Science (ARCHMAT)

Session: 2015- 2017, Publication of Result: 13 November, 2017

**Result: 110/110 ‘*Summa cum Laude*’** (Highest possible Distinction in the Italian system)

#### Sciences and Technologies for the Conservation of Cultural Heritage

Low cost, battery powered, Arduino™ driven data logger for in situ moisture measurements in Cultural Heritage.

Non-Invasive Archaeometric Characterization of 20<sup>th</sup> Century Painting by Visible, UV, IR reflectography and XRF: The Case Study of Giacomo Balla's ‘Nello Specchio’.

Archaeometric Characterization of Painted Tarascan Ceramics by SEM-EDS & LA-ICP-MS: the case of Early & Middle Post-classic Period belonging to the Malpais of Zacapu, Michoacan, Mexico.

Name of the Institution Awarded Degree

**A Joint Erasmus Mundus Master Degree awarded by the three full partners: University of Rome La Sapienza (Italy), University of Evora (Portugal) and Aristotle University of Thessaloniki (Greece), together with a Joint Diploma supplement signed by all ARCHMAT partners, full and associated.**

#### 4. Title of Qualification Awarded

#### Master of Science in Engineering (M.S. Engineering) with Research

Session: 2012- 2013, **Result: GPA 3.60 out of 4.00**, Publication of Result: 12 November, 2014

Major Field/Subject  
Thesis Title

#### Applied Physics, Electronics & Communication Engineering

Exploring the electron tunneling behavior between Scanning Tunneling Microscope (STM) tip and n-type semiconductor.

Subjects studied

Electronic Materials, Advanced Instrumentation, Digital Signal Processing, Communication Engineering.

Name of the Institution Awarding Degree

University of Chittagong (Bangladesh)

#### 5. Title of Qualification Awarded

#### Bachelor of Science in Engineering (B.Sc. Engineering)

Session: 2008-09 to 2011-12, **Result: CGPA 3.38 out of 4.00**, Publication of Result: 30 April, 2013

Major Field/Subject

#### Applied Physics, Electronics & Communication Engineering

Subjects studied

Microelectronics & Semiconductor Technology, Scientific and Industrial Instrumentation, Power and Industrial Electronics, VLSI Technology, Electrical Circuits & Machines, Quantum Mechanics, Solid State Physics, Properties of Matter, Electronic Device Physics and Circuits, Electromagnetic Fields - Waves and Applied Optics, Mathematical Physics, Electronic Communication, Microwave Engineering, Communication Engineering etc.

Name of the Institution Awarding Degree

University of Chittagong (Bangladesh)

#### Work Experience

1 April 2023 – Onward

#### Regional Manager - Asia

#### Centralised Support to the Network of Erasmus+ National Focal Points (ENFPs)

Framework of the Erasmus+ programme (2021-2027) funded by the European Education and Culture Executive Agency (EACEA) / European Commission.

Place Communale d'Auderghem 8, B-1160 Brussels, Belgium

#### Key Responsibilities:

- Primary coordinator and support provider for the Erasmus National Focal Points across 25 countries in the Asia region.
- Key contact for multipliers in Asia, overseeing communication activities and events funded by the Erasmus+ program.
- Responsible for maintaining the quality of work by providing essential guidelines to Local Event Managers and Event Technicians, ensuring adherence to the European Commission's Event Charter.
- Primary individual accountable for overseeing SPENFP service contract activities in Asia.
- Oversight of daily operations related to the implementation of the Erasmus National Focal Points (ENFP) contract in the Asia region.

1 June – 31 October, 2022

#### Visiting Researcher

INMA - CSIC (Spanish National Research Council - Aragón Nanoscience and Materials Institute)  
c/María de Luna 3, 50018 Zaragoza, Spain

#### Key Responsibilities:

- Development of non-destructive techniques for Archaeometry and art conservation
- Multianalytical and non-invasive approach to analysis of objects of artistic and archeological interest

#### Scientific Publications

1. **M. A. Rahman**, G. F. de la Fuente, J. M. Carretero, M. P. Alonso Abad, M. N. Ruiz, R. Alonso Alcalde, R. Chapoulie, N. Schiavon, and L. A. Angurel, "**Ultrashort pulsed Femtosecond UV laser for selective cleaning of significant Cretaceous flints,**" Materials Letters vol. 338, pp. 0–4, 2023.  
DOI: <https://doi.org/10.1016/j.matlet.2023.134028>.
2. **M. A. Rahman**, G. F. de la Fuente, J. M. Carretero, M. P. Alonso Abad, R. Alonso Alcalde, R. Chapoulie, N. Schiavon, and L. A. Angurel, "**Ultra-Short Pulse Laser Cleaning of Contaminated Pleistocene Bone : A Comprehensive Study on the Influence of Pulse Duration and Wavelength,**" Heritage. vol. 6, no. 3, pp. 2503-2519, 2023. DOI: <https://doi.org/10.3390/heritage6030132>
3. **M. A. Rahman**, G. F. de la Fuente, J. M. Carretero, M. P. Alonso Abad, R. Alonso Alcalde, R. Chapoulie, N. Schiavon, and L. A. Angurel, "**Overcoming current frontiers in Archaeological Bone cleaning with fs UV Laser,**" Journal of Cultural Heritage, 2023 (in review).
4. **M. A. Rahman**, G. F. de la Fuente, J. M. Carretero, E. M. Maingi, M. P. Alonso Abad, R. Alonso Alcalde, R. Chapoulie, N. Schiavon, and L. A. Angurel, "**Sub-ns-pulsed laser cleaning of an archaeological**

**bone from the Sierra de Atapuerca, Spain: a case study,**” SN Applied Sciences, vol. 3, no. 12, 2021. DOI: 10.1007/s42452-021-04850-8.

5. E. M. Maingi, M. P. Alonso, L. A. Angurel, **M. A. Rahman**, R. Chapoulie, S. Dubernet, G. F. de la Fuente “**Historical stained-glass window laser preservation: the heat accumulation challenge,**” Bol. Soc. Esp. Ceram. Vid., pp. 1–14, 2021. DOI: 10.1016/j.bsecv.2021.12.003.
6. **M. A. Rahman**, G. F. de la Fuente, J. M. Carretero, M<sup>a</sup>P. Alonso Abad, R. Alonso Alcalde, R. Chapoulie, N. Schiavon, and L. A. Angurel, “**Laser based intervention in archaeological bones, stones, ceramics and iron objects: a state-of-the-art,**” Applied Physics A, 2023 (Submitted).
7. **M. A. Rahman**, G. F. de la Fuente, J. M. Carretero, M<sup>a</sup>P. Alonso Abad, R. Alonso Alcalde, R. Chapoulie, N. Schiavon, and L. A. Angurel, “**Near-Infrared, Ultraviolet and Visible Green Femtosecond Laser Cleaning of Concretions from Ceramic Artifacts: Impact of Wavelengths and Pulse Durations,**” Boletín de la Sociedad Española de Cerámica y Vidrio, 2023 (Submitted).
8. **M. A. Rahman**, G. F. de la Fuente, J. M. Carretero, M<sup>a</sup>P. Alonso Abad, R. Alonso Alcalde, R. Chapoulie, N. Schiavon, and L. A. Angurel, “**Efficiency of Ultrafast Visible Green Femtosecond Laser Cleaning in the Effective Conservation of Corroded Iron Objects Surface**” Materials Letters, 2023 (In preparation stage).
9. E. M. Maingi, V. Treil, M. P. Alonso, L. A. Angurel, **M. A. Rahman**, R. Chapoulie, S. Dubernet, N. Schiavon, G. F. de la Fuente “**Challenges in laser cleaning of cultural heritage stained glass,**” **2022 J. Phys.: Conf. Ser. 2204 012079.** DOI: 10.1088/1742-6596/2204/1/012079.
10. **M. A. Rahman** and J. U. Ahamed (2016). “**Mechanism of Electron Tunneling into Semiconductor Surface Studied by Scanning Tunneling Microscopy**”. Chittagong University J. Sci., CUJS Volume 38: 41- 56, 2016, <http://www.cu.ac.bd/ctguni/other/cuj-paper/cuj-vol-38/vol-38-2016-4.pdf>.

## Scientific Conference

1. Oral Presentation (in-person), **Application of Femtosecond UV Laser for Selective Cleaning of Archaeologically Significant Pleistocene Bones**, appeared in Abstract Book of LACONA XIII: 13<sup>th</sup> International Conference on Lasers in the Conservation of Artworks, held on 12 – 16 September 2022, Florence – Italy.
2. Oral Presentation (in-person), **Application of ultra-short pulse lasers in the restauration of Historical Stained-Glasses**, appeared in Abstract Book of LACONA XIII: 13<sup>th</sup> International Conference on Lasers in the Conservation of Artworks, held on 12 – 16 September 2022, Florence – Italy.
3. Oral Presentation (in-person) of **State-of-the-art ultra-short pulsed laser cleaning in the conservation of archaeologically significant bones and flints**, appeared in Abstract Book and a special issue of an indexed international journal of inArt 2022: 5<sup>th</sup> International Conference on Innovation in Art Research and Technology, 26 June-1 July 2022, Sorbonne University, Paris, France.
4. Oral Presentation (virtually), **Application of fs pulsed laser to clean archaeologically significant bones**, appeared in the Abstract Book of COLA 2021/2022: 16<sup>th</sup> International Conference on Laser Ablation, held on 24 – 29 April 2022, Kunibiki Messe in Matsue, Japan.
5. Oral Presentation (in-person), **Femtosecond pulsed laser irradiation: a novel approach to clean archaeologically significant bones**, at the 2021 IEEE International Conference on **Metrology for Archaeology and Cultural Heritage (MetroArchaeo-2021)**, held on 20-22 October 2021, Milan – Italy.
6. Oral Presentation (virtually), **Advances of pulsed laser intervention: Performing archaeological bones cleaning and processing of laser-material interaction in a novel way**, at the 3<sup>rd</sup> Virtual Congress on Materials Science and Engineering: Materials Info 2021, held on 27-30 September, 2021.
7. Oral Presentation (virtually), **Ultrashort pulse LASER irradiation in archaeological bones: from physics of cleaning threshold to heat incubation challenge**, at the Young Researchers in Archaeometry conference (YRA 2021), held on 24-27 August 2021, Évora – Portugal.
8. Poster Presentation (in-person), **Ultrashort pulsed laser cleaning in the conservation of archaeologically significant bones and flints**, appeared in Abstract Book of inArt 2022: 5<sup>th</sup> International Conference on Innovation in Art Research and Technology, held on 28 June – 1 July 2022, Sorbonne University, Paris, France.
9. Oral Presentation of **Sub-nanosecond high-repetition-rate n-IR pulsed Laser based intervention in archaeological materials conservation**, at the courses of Latest technologies applied to the

conservation of cultural heritage: problematic and solutions, 25 – 27 November 2019, University of Zaragoza, Spain.

10. Participation to the **2020 WURM School on Raman spectroscopy**, held on 2-6 March 2020, Ecole Normale Supérieure de Lyon, Lyon, France.
11. Oral Presentation of '**Sub-nanosecond UV and n-IR pulsed Laser application in archaeological materials conservation: several case studies**' at ISA 2020/2022: 43rd International Symposium on Archaeometry, held on 16 - 20 May 2022, at the Instituto Superior Técnico (Alameda), Lisbon, Portugal.
12. Oral Presentation of **Low cost, battery powered, Arduino™ driven data logger for in situ moisture measurements in Cultural Heritage**, appeared in Abstract Book and Special Journal of ART'17 – 12<sup>th</sup> International Conference on non-destructive investigations and microanalysis for the diagnostics and conservation of cultural and environmental heritage-2017, IDN-59, Page- 63, Turin, Italy.
13. Oral Presentation of **Exploring the Electron Tunneling Behavior of Scanning Tunneling Microscope (STM) tip and n-type Semiconductor**, appeared in proceedings of 1<sup>st</sup> International Conference on "Physics for Sustainable Development and Technology (ICPSDT)"- 2015, APE-III (B)-08, Page-70, CUET, Bangladesh.
14. Oral Presentation of **Smart Heritage: Innovative Renewable Solar Energy Integration in Heritage Revival** in the ARCHMAT Department, Held: 7 April '16, Laboratory of Organic Chemistry, Aristotle University of Thessaloniki, Greece.

## Convocation Speech

PhD Convocation Speech representing 53 new doctorates at [Doctors Day celebration in 'la Fiesta de la Universidad de Burgos](#), held on 3<sup>rd</sup> March 2023, University of Burgos, Spain.

## Keynote Speech

1. **Laser in cleaning conservation of archaeological materials and museum artifacts**, at the [2nd International Competition for Young Researchers](#), held: 11 September 2022, organized by UniV (An international platform for empowering youths in research, led by Bangladeshi Researchers), Bangladesh.
2. **Laser-based intervention in archaeological materials and museum stored artifacts**, at the virtual seminar of 'Science and Engineering for Cultural Heritage', 25 November 2020, Faculty of Mines, Universidad Nacional de Colombia, Colombia.
3. **Light for ART: Laser-based intervention in Pleistocene Bones and Neogene Flints**, at the ARCHMAT summer school – 2020 (virtual), 18 June 2020, Aristotle University of Thessaloniki, Greece.
4. **Laser Based intervention in Archaeological Materials and Museum Artifacts: Pleistocene Bones and Neogene Flints**, at the ARCHMAT Burgos Workshop, 20 - 22 November 2019, University of Burgos, Spain.

## Seminar / Webinar

1. Participation at the seminar on **Young Professionals Forum 2022 - Emerging skills for heritage conservation**, held: 1 July 2022, organized by The Young Professionals Forum of Centro Conservazione e Restauro dei Beni Culturali La Venaria Reale, Torino, Italy (virtually).
2. Participation virtually at the webinar on **Developing European Collaboration in HS: Implementing a European Research Area for Heritage Science**, held: 1 May 2022, organized by IPERION HS Academy (A unique European Research Infrastructure on Heritage Science).
3. Participation virtually at the webinar on **Hyperspectral and multispectral imaging in heritage science**, held: 5 April 2022, organized by IPERION HS Academy.
4. Participation virtually at the webinar on **New synchrotron light sources and paleontological studies**, held: 8 February 2022, organized by IPERION HS Academy.
5. Participation virtually at the webinar on **Understanding laser interaction with materials in Heritage Science**, held: 11 January 2022, organized by IPERION HS Academy.
6. Participation at the seminar on **The Restoration of a Contemporary Artwork: Legal Issues**, held: 17 June 2021, organized by The Young Professionals Forum of Centro Conservazione e Restauro dei Beni Culturali La Venaria Reale, Torino, Italy (virtually).
7. Participation at the seminar on **Liquid Crystals: Device Applications and Computer Simulations**, held: 10 November 2017, Dept. of Nanotechnology Engineering, SAPIENZA University of Rome, Italy.

8. Participation at the **International Conference on Metrology for Archaeology and Cultural Heritage (IMEKO) – 2016**, held: 19–21 October 2016, Castello del Valentino, Politecnico di Torino, Torino, Italy.
9. Participation at the **41<sup>st</sup> International Symposium on Archaeometry (ISA)**, held: 15 - 21 May 2016, University of the Peloponnese, Kalamata, Greece.
10. Participation at the ARCHMAT Seminar of **Corrosion mechanisms in ancient metals: Innovative monitoring systems in museum environments**, held: 4 - 5 February 2016, HERCULES Laboratory, University of Évora, Portugal.
11. Participation at the seminar of **Laser Fundamentals for Application in Archaeology and Cultural Heritage** based on 'Atapuerca and New Technologies', held: 24 November 2015, Museum of Human Evolution, Burgos, Spain.
12. Participation at 2<sup>nd</sup> international conference **COLOURS 2015: BRIDGING SCIENCE WITH ART**, held: 24 to 26 September'15, University of Évora, 7004-516 Évora, Portugal.

## Training / Workshop

1. 2-days long Joint ED-ARCHMAT-SECPHO Networking Event: **"BACH Tech Week - Burgos Archeology and Cultural Heritage Technology Week"**, held on 20 -21 September 2022, University of Burgos, Spain (in-person).
2. Day long hands-on training on **"Laser Technology in Archaeological and Cultural Heritage Materials Science"**, held on 19 September, organized by - Spanish National Research Council - Aragón Nanoscience and Materials Institute: University of Zaragoza (Spain) at University of Burgos, Spain (in-person).
3. 2-days long **"Improved Methods of Data Analysis by Py-GC-MS in Archaeological and Cultural Heritage Materials Science"**, held on 7 – 8 March 2022, Université d'Avignon et des Pays du Vaucluse (UAPV), France (virtually).
4. 2-days long **"Identification, Degradation and Conservation of Plastics in Cultural Heritage Materials Science"**, held on 7 – 8 March 2022, Sapienza University of Rome La Spaienza, Italy, (virtually).
5. 3-days long **"Virtual Reality and 3D technology in Archaeological and Cultural Heritage Material Science"**, held on 13 – 15 December 2021, Bordeaux Montaigne University (UBM), France (in-person).
6. 3-days long **"Biodegradation and Biotechnology in Cultural Heritage Materials Science"**, held on 27 – 29 October 2021, Hercules Laboratory, Universidade de Évora (UEvora), Portugal (in-person).
7. 2-days long **"Nanotechnology in Archaeological and Cultural Heritage Materials Science"**, held on 14 – 15 October 2021, Politecnico di Torino (POLITO), Italy (virtually).
8. Day long **"Laser Technology in Archaeological and Cultural Heritage Materials Science"**, held on 15 July 2021, Spanish National Research Council (Aragón Nanoscience and Materials Institute: University of Zaragoza), Spain (virtually).
9. 4-days long **"ED-ARCHMAT Network Wide Training and Specific Targeted Workshop (STW)"**, held on 24 to 27 June 2019, Sapienza University of Rome, Italy (in-person).
10. 5-days long **"3<sup>rd</sup> International Smart Grid Workshop and Certificate Program – 2016"**, held on 21 to 25 March 2016, Istanbul Gelisim University, Turkey (in-person).
11. 2-days long workshop participation at the **MEGALITHS AND GEOLOGY (MEGAGEO-2015) : Mega-Talks 2**, held on 19 to 20 November 2015, 7170-037 Redondo, Portugal (in-person).

## Winter School Participation

ED-ARCHMAT H2020-MSCA-ITN-EJD Winter School Participation, titled as **"Developing entrepreneurial, Project management and Communication transversal skills applied to the Cultural Heritage sector"**, Held: 23 to 30 January 2020, Universidade de Évora, Évora, Portugal.

## Summer School Participation

1. ED-ARCHMAT H2020-MSCA-ITN-EJD Summer School: **"Defining key knowledge, competences and skills needed for the Profession of Conservation Scientists,"** September 22, University of Burgos, Spain.



<b>Industrial Fair Participation</b>	<p>2. International Summer School Participation at the <b>Environment - Material Interaction (ENVIMAT) 2016</b>, focuses on the "Preventive conservation of monuments and archaeological sites in the Mediterranean Basin", Held: 12 to 14 July' 2016, Valletta Campus- University of Malta, Malta.</p> <p><b>Laser cleaning research outcomes dissemination</b> to the industry experts, non-specialist, high school students and civil society people at the "<b>Industrial Trade Fair: Destaca en Ruta 2021</b>," September 23 – 24, Oropesa, Alicante, Spain.</p>
<b>Scholarship / Fellowship Achievements</b>	<ol style="list-style-type: none"> <li>1. <b>H2020-MSCA-ITN ESR ED-ARCHMAT Fellowship</b>, CSIC-INMA, Spain (2019-2022)</li> <li>2. <b>H2020-MSCA-COFUND ESR T4C Fellowship</b>, University of Turin, Italy (2018-2019)</li> <li>3. <b>Erasmus Mundus Master in ARCHMAT Scholarship</b>, University of Evora, Portugal (2015-2017)</li> <li>4. <b>EXIM Bank Merit Scholarship</b> for outstanding College &amp; University Results, Bangladesh (2009-2015)</li> <li>5. <b>Bangladesh Government Education Board Junior Scholarship</b>, Comilla Zone (2003-2004)</li> <li>6. <b>Bangladesh Government Education Board Primary Scholarship</b>, Chittagong Zone (2000-2002)</li> </ol>
<b>Selected Awards Received</b>	<ol style="list-style-type: none"> <li>1. '<b>National Youth Summit Award- 2016</b>' Comilla, Bangladesh, for outstanding University Results (Bachelor and Master Category)</li> <li>2. '<b>Youth Ambassadors of Evora, Portugal - 2015</b>', Awards in order to promote and reveal the UNESCO Heritage City of Evora around the world.</li> </ol>
<b>Academic Project Accomplishment</b>	<p><b>Position:</b> Team Leader (Total member: 05), Duration: 2 weeks (03 -16 April 2016)</p> <p><b>Research Project:</b> Smart and Mobile Laboratory of Archaeometry: A project for Revealing Cultural Heritage of Bangladesh</p> <p><b>Institute:</b> Aristotle University of Thessaloniki, 541 24 Thessaloniki, Greece</p>
<b>Teaching Experience</b>	<p><b>20 Nov'2019 – 22 Dec'2019</b> <b>Master class on Laser Based intervention in Archaeological Materials and Museum Artifacts</b> ERASMUS MUNDUS European Master in ARChaeological MATerials Science (ARCHMAT) University of Burgos, Spain. Web: <a href="http://www.erasmusmundus-archmat.uevora.pt/">http://www.erasmusmundus-archmat.uevora.pt/</a></p> <p><b>1 June'2020 – onward</b> (part-time) <b>Senior Lecturer</b> UniV - An international platform for empowering youths in research, led by Bangladeshi Researchers Dhaka, Bangladesh. Web: <a href="http://www.univbd.com">www.univbd.com</a></p> <p><b>Major courses conduct:</b></p> <ol style="list-style-type: none"> <li>(a) Introduction to research and publication</li> <li>(b) How to select a research topic</li> <li>(c) Efficient use of search engines and academic writing style, etc</li> </ol> <p><b>10 Feb'2018 – 13 Sep'2018</b> <b>Senior Lecturer, Physics and ICT Department</b> Madani School and College (British International School), Via Tiburtina 605, CAP-00159 Rome, Italy. Web: <a href="http://www.madanischoolandcollege.com/">http://www.madanischoolandcollege.com/</a></p>
<b>Personal Skills - Competences</b>	<p><b>Laser Cleaning Conservation Skills</b></p> <ol style="list-style-type: none"> <li>a. Sub-nanosecond near-Infrared (n-IR) Laser (800ps, 1064nm)</li> <li>b. Sub-nanosecond Ultraviolet (UV) Laser (300ps, 355nm)</li> <li>c. Femtosecond near-Infrared (n-IR) Laser (228fs, 1030nm)</li> <li>d. Femtosecond Ultraviolet (UV) Laser (238fs, 343nm)</li> <li>e. Femtosecond Visible Green Laser (249fs, 515nm)</li> </ol>

**Scientific Operational Skills**

1. Optical Microscopy (OM): Stereo Microscopy, Confocal Microscopy
2. Scanning Electron Microscope laterally with Energy Dispersive Spectrum (SEM-EDS)
3. X-ray Photoelectron Spectroscopy (XPS)
4. Laser Ablation Inductively Coupled Plasma Mass Spectrometry (LA-ICP-MS)
5. X-ray Fluorescence Spectrometry (XRF)
6. FTIR Spectroscopy
7. Energy Dispersive X-ray Fluorescence (EDXRF)
8. X-ray Diffractometry (XRD)
9. Raman Spectroscopy
10. Ultraviolet (UV) and Infrared (IR) Reflectography, etc.

**Simulating Software Skills**

(Level of Competence)

**MATLAB** (Excellent), **LabVIEW** (Excellent), **PSPICE** (Very Good)  
**3D Sketch up** (Excellent), **CAD** (Very Good)

**Software Skills**

- a. CasaXPS (Processing software offers powerful analysis techniques for both spectral and imaging data acquired from XPS)
- b. SENSOFAR (A topography measurement system software working for confocal microscopy profiling)
- c. KaleidaGraph (Graphic and data analysis software for scientists and engineers)

**Professional Relevance /  
Research Engagements**

- i. Several guided field activities to the archaeological site '*Sierra de Atapuerca*' and Human Evolution Museum (MEH), Burgos
- ii. Laboratory attachment of TAC and Sintered Lab (Laboratorio de Evolución Humana, UBU)
- iii. Research engagements to the Technological Science Park (PCT), UBU
- iv. Research engagements to the Centro Nacional de Investigación sobre la Evolución Humana (CENIEH)
- v. Laboratory attachment to the Restoration Lab of the archaeological site of Atapuerca excavation
- e. Research engagements to the International Research Center in Critical Raw Materials for Advanced Industrial Technologies (ICCRAM)
- f. Laboratory attachment to the Paleomagnetism laboratory of UBU

**PhD Courses Accomplishments****Courses from the University of Burgos, Spain:**

1. Strategy in materials of research and doctoral training at UBU
2. Knowledge transfer and innovation
3. Bibliographic and author information. Databases. Quality indexes of magazines and publications. Open publication
4. Treatment of quantitative data
5. Expression of the scientific activity
6. Research 2.0: Possibilities of the network for the dissemination of research
7. Training in Research: Transverse Activity
8. Language Training
9. Legal Perspective of Heritage Management

**Mandatory Courses from the University of Evora, Portugal:**

1. Earth and Space Sciences
2. Atmospheric Physics and Climate
3. Geophysics
4. Geological Processes
5. Techniques for Observation, Data Acquisition and Processing

<b>Programming/Language Skills</b> (Level of Competence)	<b>C/Turbo C</b> (Very good), <b>C++</b> (Very good), <b>JavaScript</b> (Good), <b>HTML</b> (Good), <b>SQL</b> (Good)
<b>Basic Operation Skills</b>	Arduino™ driven data logger, Micro-controllers, Open sources multi-sensor technologies
<b>CMS use &amp; Web Design Skills</b>	WordPress 4.1; Joomla 3.2; designed academic blog, organization and university sites etc.
<b>Other Computer Skills &amp; Competences</b>	Savvy with G-suite (Email, Calendar, Docs, Sheets, Slides, Drive, Meet, Forms) and Microsoft Office (Microsoft Team, Microsoft View, Microsoft Meeting); well literate in Adobe Photoshop, Adobe Illustrator; Proficient in basic operations in PowerPoint, OneNote, Internet tools, Application Software, Database Management System, Hardware troubleshooting, etc.
<b>Project Acquisition and Coordination Experience</b>	
<b>1. Joint Co-Project Coordinator and Co-Manager</b> 01 July'2020 – onward	<p><b>Project Acronym:</b> GO-DIJIP  <b>Project Title:</b> Integrating digital collaborative environments into Joint programmes  <b>Project Start:</b> 15/03/2021  <b>Project Duration:</b> 24 Months  <b>Project Reference:</b> 2020-1-IT02-KA226-HE-095452  <b>Field:</b> Higher Education  <b>Main objective of the project:</b> Innovation  <b>Amount (EUR):</b> 209,725.00</p> <p>Joint Co-Project Coordinator and Co-Manager as the President of the Erasmus Mundus Association (EMA) on the EMA's contribution to the GO-DIJIP, Key Action 2 project on "Integrating Digital Collaborative Environments into Joint Programmes".</p> <p>GO-DIJIP aims to develop a digitalized, innovative, collaborative and quality-oriented Higher Education, providing instruments to sustainably mainstream new forms of virtual teaching and learning. A two-year project coordinated by the University of Padua – Padova, Italy. University of Bergen, AgroParisTech and UNI-Collaboration, as well as EMA are the full project partners. This Erasmus+ Strategic Partnership project focuses on the introduction of digital elements in Joint Programmes and relies on EMA members, students and alumni to contribute!</p>
<b>2. Deputy Coordinator</b> 01 July'2020 – onward	<p><b>Project Acronym:</b> A&amp;R  <b>Project Title:</b> Accept and Respect  <b>Activities planned for project:</b> Youth Exchanges  <b>Project Start:</b> 15/05/2021  <b>Project Duration:</b> 24 Months  <b>National Agency of the Applicant Organization:</b> BE05 (BELGIË)  <b>Amount (EUR):</b> 199,650.00</p> <p><b>Project Description:</b> According to the definition of the Council of Europe, discrimination (in all its possible forms and expressions) is one of the most common forms of human rights violations and abuse. It affects millions of people every day and it is one of the most difficult to recognize. People may experience discrimination because of their age, ethnicity, origin, political beliefs, race, religion, sexual orientation, gender, language, culture, disability, and on many other grounds. Various forms of discrimination exist, including direct, indirect, verbal, and non-verbal discrimination. Consequences of discrimination are manifested in two ways: direct and indirect. Persons and groups being discriminated against face direct consequences, for instance affecting their mental health, while the society as a whole faces indirect, long-term consequences. Thus, through promoting tolerance and raising awareness of discrimination and intolerance among the youth, we can improve the livelihood of individuals and at the same time impact society as a whole.</p> <p>The Youth Exchange "Accept and Respect" is an interactive program where we gathered 36 young people from Belgium, Croatia, Hungary, Greece, Armenia and Georgia. It held from the 1<sup>st</sup> to the 10<sup>th</sup> of April 2022 in Kobuleti, Georgia with the aim to break stereotypes, overcome hate-speech, and fight discrimination. We wanted to raise awareness of rights among young people, empowered them to recognize and stand up against discrimination, and enabled them to contact relevant institutions to seek legal or other appropriate remedies. The project "Accept and Respect" aimed to promote equality and eliminate discrimination among young people.</p>



### 3. Co-Project Coordinator

**Project Title: MOUNTAINS FOR THE MIND**

**Field: KA1-153-Training Youth Workers**

**Project Start: 01/03/2023**

**Project Duration: 09 Months**

**National Agency of the Applicant Organization: BE05 (BELGIË)**

**Goals and Objectives of the Project:** COVID-19 has shown us clearly that we must educate and empower young people to take better care of their and others mental health. Creativi108 is looking forward to contributing to the European Youth Goal of Mental Health and to addressing the needs expressed collectively by the European Youth. For this reason, the MOUNTAINS FOR THE MIND project aims to provide innovative methodologies and tools for outdoor education in the forest to youth workers in order to enable them to work with young people from disadvantaged backgrounds on the prevention and management of mental health disorders as a result of the pandemic. The youth workers activity will have a positive impact on the participants daily work with young people through the multiplier effect. The project is expected to amplify the work and interventions in addressing mental health at the grassroots level.

### Language Skills

**Bengali**

Mother tongue(s)

**English**

IELTS; Overall Band Score: 7.0 (CEFR: C1)

**Español**

Advance Level (Nivel: B1)

**Italiano, Portuguese and Hindi**

Beginners Level

### Commissions of Trust Skills

1. Event Organizer, **Regional Erasmus+ Week** (ENFPs Gathering, Cluster Meeting and Contact Making Seminar), organized by **European Education and Culture Executive Agency (EACEA) (EACEA) of the European Commission, with the support of the Delegation of the European Union to Vietnam and the Ministry of Education and Training of Vietnam**, 28-30 November, Hanoi, Vietnam
2. Organizing Secretary, **2<sup>nd</sup> International Competition for Young Researchers**, organized by UniV, Bangladesh (2022), [www.competition2.univbd.com](http://www.competition2.univbd.com)
3. Organizing Secretary, **1<sup>st</sup> International Poster Competition on Achieving Sustainable Development Goals (SDGs)**, organized by UniV, Turkey. (2020), [www.competition.univbd.com](http://www.competition.univbd.com)
4. Evaluator, **Bangladesh Physics Olympiad** (Higher Secondary Level), Chittagong, Bangladesh (2015)
5. Evaluator, **Bangladesh Mathematical Olympiad** (Secondary Level), Comilla, Bangladesh (2016)
6. Coordinator, **National Youth Summit – 2016**, Comilla, Bangladesh

### Professional Achievements/ Memberships

1. **Research Fellow**, T54\_17R: Materials and laser treatments to improve energy efficiency, [Instituto de Ciencia de Materiales de Aragón](http://Instituto de Ciencia de Materiales de Aragón) (CSIC - University of Zaragoza); March 2019 – onward.
2. **Member**, European Materials Research Society (**EMRS**); March 2019 - onward; Web: <https://www.european-mrs.com/>
3. **Member**, **Marie Curie Alumni Association (MCAA)**, A global network of Marie Curie researcher, i.e., any beneficiary of funding under any of the past or present schemes proposed as part of the European Commission's Marie Curie program; October 2018 - onward; Web: <https://www.mariecuriealumni.eu/>
4. **Graduate Member**, Institute of Electrical and Electronic Engineers (**IEEE**) - World's largest professional association for the advancement of technology; No: # 93688249, 2016 – onward; Web: [www.ieee.org](http://www.ieee.org)
5. **Graduate Member**, Illuminating Engineering Society of North America (IES), the recognized technical authority on illumination, No: # 719097, 2016 - 2019; Web: [www.ies.org](http://www.ies.org)
6. **Member**, The Institution of Engineers' Bangladesh (**IEB**); 2015 – Life. Web: <http://www.iebbd.org/>

### Social Skills and Competences

1. **President | Erasmus Mundus Association (EMA)**  
An association for students and alumni of Erasmus Mundus Master and Doctoral programs, are linked to the European Commission, care about higher education and its broad (intercultural) benefits on the way to get self-sustainable & influence higher education and society; 14,000+ members across 170+ countries; July 2021 – onward.  
**Responsibilities:** Leading the associations Management Board comprising the Vice President and 10

Unit leaders, volunteering to give all members a chance to get involved, collaborate with the European Commission and EMA Stakeholders; hence contributing towards the improvement of Higher Education, representing Erasmus+ programs and EMA members.

2. **President** | University Students Parliament Comilla (A body which helps students exercise their rights and protect their interests at universities), Bangladesh; August 2013 – September 2015.
3. **Petrol Leader** | 7th International SCOUT Jamboree- 2004, Mouchak, Gazipur, Dhaka & many other Scout Camps in Comilla; achieved scouting related different outstanding awards.
4. **Life Fellow Member** | Bishsya Sahitya Kendro, Bangladesh (non-profit institution to promote reading habits, enlightenment and progressive ideas among students and general public); 2009 – Life.

## Additional Information Referees

### 1. Professor Dr. Germán F. de la Fuente

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### 2. Professor Dr. Nicola Schivaon

Coordinator, ERASMUS MUNDUS Master in ARCHMAT

Coordinator, Marie Curie H2020-MSCA-ITN-EJD ED-ARCHMAT

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## Declaration

*I do hereby declare that all the information stated above is authentic; if any inconsistency proved any time, I will be responsible for this.*

*Md. Ashiqur Rahman*  
*23.11.2023*

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*Signature and Date*