CURRICULUM VITAE

Name : RANIA MAHMOUD NOAMAN EL BACKLY

http://orcid.org/0000-0003-3147-0032

http://www.researcherid.com/rid/Q-3659-2017

https://scholar.google.com.eg/citations?hl=en&user=zbDdyZQAAAAJ

Address : **O**ffice**:** Conservative Dentistry Department, Faculty of Dentistry, Alexandria University Alexandria, Egypt.

Office**:** Tissue Engineering Laboratories, Faculty of Dentistry, Alexandria University, Alexandria, Egypt.

Home**:** 9th Al- Ekbal street , Victoria , Alexandria, 21411 , Egypt.

Telephone : Home (Egypt): (203)5823532

Mobile Phone : (002- 01227426437)

E-mail : ranianoaman@gmail.com , rania.elbackly@alexu.edu.eg

(Date & place of birth): October, 18,1977-AnnArbor, Michigan, USA.

Marital status: single

h-index: 16 (accessed on 14-9-2023)

i10-index: 21 (accessed on 14-9-2023)

Education:

April, 29, 2013	Received equivalence for the PhD degree from the supreme council of Egyptian Universities and awarded the degree of PhD in endodontics.
November, 20, 2012	PhD degree in Regenerative Medicine and Tissue Engineering from the , Laboratorio di Medicina Rigenerativa, Scuola di Scienze e tecnologie biomediche, departimento di medicina sperimentale (DIMES), Università Degli Studi Di Genova, Genoa, Italy. *(Received equivalence degree; PhD in Endodontics on April 29, 2013)*
2007	Master degree (Ms) in Conservative dentistry, Conservative Dentistry department, Faculty of dentistry, Alexandria University

2000	Bachelor of Dental Medicine & Surgery (BDS), Faculty of Dentistry, Alexandria University.(graduated top of The class, with excellent and Honor degree).

Positions:

2019-present time	Associate professor of Endodontics, Conservative Dentistry Department, Faculty of Dentistry, Alexandria University.
2014-present time	Principal investigator of funded research projects, at the Tissue Engineering Laboratories (TELAB), Faculty of Dentistry, Alexandria University
2013-2019	Lecturer of Endodontics, Conservative Dentistry Department, Faculty of Dentistry, Alexandria University.
2007-2013	Assistant lecturer, Conservative Dentistry Department, Faculty of Dentistry, Alexandria University.
2002-2007	Clinical Instructor, Conservative Dentistry Department, Faculty of Dentistry, Alexandria University.
2000-present time	Team member in research projects at the Tissue Engineering Laboratories (TELAB), Faculty of Dentistry, Alexandria University.

Teaching and clinical experience:

2023-present time	Part-time appointment; Associate professor of Endodontics, Alamein International University, Alamein, Egypt.
2021-present time	Part-time appointment; teaching of the tissue engineering course as part of the biomedical engineering program, Faculty of Engineering, Alexandria University.(SSP-BM241)
2019-present time	Associate professor of Endodontics, Conservative Dentistry Department, Faculty of Dentistry, Alexandria University.
2013-2019	Lecturer of Endodontics
2013-present time	Lecturer for the Tissue engineering and regenerative medicine course given (biannually) at the tissue engineering laboratories, Faculty of dentistry, Alexandria University.
2009-2012	Teaching assistant for didactic laboratory courses for tissue engineering and regenerative medicine, at the laboratory for regenerative medicine, University of Genova, Italy.

2007-2013	Assistant lecturer
2002-2007	Clinical Instructor, Conservative Dentistry Department, Faculty of Dentistry, Alexandria University.
2001-2002	General dentistry practice in the private sector.
2000-2001	Dental Internship, Faculty of Dentistry, Alexandria University.

Awards:

- Recipient of the Daniel Turnberg travel fellowship, 2021.
- The 2021 Journal of endodontics year award for the category of regenerative endodontics for the publication entitled*: "Quantitative Assessment of Intracanal Regenerated Tissues after Regenerative Endodontic Procedures in Mature Teeth Using Magnetic Resonance Imaging: A Randomized Controlled Clinical Trial".*
- Certificate of recognition from the head of the conservative dentistry department for outstanding contribution in representing the department at national and international scientific events- September 2018.
- Alexandria University award for scientific encouragement-2017
- Alexandria University award for publishing in ISI top (50%) indexed international journals for the years 2014-2023.
- Appreciation trophy (student selection) from the bachelor of dental science-credit hour system (2016 and 2017).
- Oral presentation award, SICOT, Saudi Arabia, 2013.
- Oral abstract student award selection, TERMIS world congress, 2012, Vienna, Austria.
- Award from the AIDC 2008 for outstanding oral presentation.
- Student travel award, TERMIS world congress, 2006, Pittsburgh, USA.
- Honorary certificate from Alexandria University on the annual Science Day 2001, for being top of the graduating class of 2000.
- Honoree medal for being the top of the graduating class of the Faculty of Dentistry, 2000, from the Faculty of dentistry.

Memberships:

Egyptian Dental Union	(2001)
Tissue Engineering Society international	(2001-2006)
Tissue Engineering and Regenerative Medicine International Society	(2006-present time)
International association for dental research (IADR)	(2013- present time)

Tissue Engineering and Regenerative Medicine Society (Egypt) (2014- present time)

IADR Awards Review Committee Member for the year 2024

Editorial experience:

- Research topic editor for frontiers in bioengineering and biotechnology; entitled: "Regenerating the Dentin-Pulp Complex: Understanding the Challenges That Lie Ahead"; 2022.

- Research topic editor for frontiers in bioengineering and biotechnology; entitled: "New Frontiers in Regenerative Endodontics and Dental Regeneration"; 2017.

- Editor for the Alexandria Dental Journal, (2015-current time).
- Peer reviewer for the journal "F1000" in selected publications, 2023-current time.
- Peer reviewer for the journal "International Journal of Medical Informatics" in selected publications, 2022-current time.
- Peer reviewer for the journal "Biomedical materials" in selected publications, 2021-current time.
- Peer reviewer for the journal "BMC oral health" in selected publications, 2021-current time.
- Peer reviewer for the journal "frontiers in bioengineering and biotechnology" in selected publications, 2020-current time.
- Peer reviewer for the journal "Archives of oral biology" in selected publications, 2020-current time.
- Peer reviewer for the journal "Biomedical Materials" in selected publications, 2018-current time.
- Peer reviewer for the journal "Cytotherapy" in selected publications, 2015-current time.
- Peer reviewer for the journal "PLOS one" in selected publications, 2013-current time.
- Peer reviewer for the journal "Tissue engineering" in selected publications, 2010-current time.
- Peer reviewer for the journal "Artificial Organs" in selected publications, 2006-current time.
- Data analyzer and report formulator for infant and young child study by agreement with The World Health Organization-Regional office for the Eastern Mediterranean, 2000.

Main Research and Technology Projects:

- Main Supervisor for the PhD Research project entitled ***"Growth factor laden hydrogel for regenerative endodontic applications"*** funded by the Science and Technology Development Fund (STDF), Egypt with a total fund of (278,460 Egyptian Pounds). Project started in May 2021-current time).
- Egyptian Principal investigator for the project entitled ***"Production of Osteogenic Extracellular Matrix on Load-transducing Scaffold Targeted for Cleft Palate Regeneration"*** funded by the academy of scientific research and technology as part of the ASRT JESOR -3 2015 program with a total fund of (665,968 Egyptian Pounds). Project started in October 2017-September 2021.
- Principal Project Advisor for the undergraduate student project entitled ***"Research Factory"*** including 4 phases, 2016-2018. The project has been adopted by other disciplines of Alexandria University and is part of the activities of the Center for Career Development and Entrepreneurship (CDCE) of Alexandria University.
- Member of the research team for the project entitled: ***" Borate based bioactive glass nanofibers for topical application for treatment of nonhealing diabetic wounds"*** funded by the academy of scientific research and technology in the frame of a bilateral funded India/Egypt project. As part of the collaboration, a visit for 10 days was performed at the central glass and ceramic institute, Kolkata, India in December 2018.
- Member of the research team of the clinical trial entitled: ***"Bioactive Glass (Sol-gel) for Alveolar Bone Regeneration after Surgical Extraction"***. ClinicalTrials.gov Identifier: NCT01878084 under sponsorship of the Faculty of dentistry, Alexandria University and headed by the Principal investigator Prof. Mona K. Marei with the US collaborator Prof. Himanshu Jain of Lehigh University, USA.

- ***Principal Investigator*** of the project entitled: ***"A Standardized Platelet-Rich Plasma Preparation For Endogenous Regenerative Therapies In Dentistry"***; funded by the Alexandria University Research Fund (AURF) , Research Enhancement Program (ALEX REP). The project started in July 2014. (Total fund: 130,000 Egyptian pounds)
- ***Principal Investigator*** in the ***"Innovation"*** project, in collaboration with Bibliotheca Alexandria for enhancing research skills of young scientists. 2014- 2015.
- Member of the ***"Angioscaff"*** project team, funded by the European Commission through the Seventh framework Program (FP7), 2009-2012. As part of the project activities, a

workshop was attended in Lausanne, Switzerland in 2009 for 1 week, in addition to a three-week training period at the AO foundation in March 2010 as part of the project activities. A one-day workshop was also attended in Zurich, Switzerland in March 2010.

- Member of the research project entitled: ***"Bioinformatics in tissue engineering science and technology".*** The project was accepted March 2005 under EMRO-COMSTECH grant for research in applied biotechnology and Genomics in health (RAB&GH) between the WHO "member of the eastern Mediterranean region" and the organization of Islamic conference standing committee for science and technology co-operation (COMSTECH).
- Researcher in the project entitled " ***The design, fabrication, and characterization of titanium implants***" the project was accepted on June 9th 2005 under the international agreement between the governments of USA and Egypt for Co- operation between Princeton university/ USA and Alexandria university Egypt : project objective was to transfer the technology of titanium coated implants to be manufactured in Egypt at the central metallurgical research and Development institute (CM RDI) Cairo / Egypt.
- Completion of Master thesis entitled: " Using a tissue engineering module to regenerate dentin/pulp tissue ex-vivo" , presented to the Faculty of dentistry, Alexandria University in August 2006.
- Researcher in the project entitled ***"Gene therapy for engineering periodontal tissues in osteoporotic model"***, the project was agreed under the USA/Egypt cooperation between Ohio state University College of Dentistry and Alexandria University- Faculty of Dentistry. 2004-2006.
- Member in the Tissue Engineering project entitled "***Bone regeneration by tissue engineering post maxillary sinus augmentation".*** The project was accepted in 2003 under the international agreement between the government of Italy and the government of the Arab Republic of Egypt on Science and Technology Cooperation.
- Member in the Tissue Engineering project entitled "***Biomechanical Model to Regenerate Tissue in Bony Defects in the Oral Cavity"***. The project was accepted on June 30th, 2003 under the international agreement between the government of USA and the government of the Arab Republic of Egypt on Science and Technology Cooperation.
- Researcher in the Osteoporosis research project entitled "***Assessment of oral health In osteoporotic Egyptian females , a pilot study in Alexandria"*** . The project was sponsored

by the World-Health Organization –Regional office for Eastern Mediterranean (2000-2005).

- Researcher in a Tissue Engineering in Dentistry project entitled :***" Regeneration of Alveolar Bone by Tissue Engineering Implants".*** The project was established and funded under the international agreement between the government of USA and the government of the Arab Republic of Egypt on Science and Technology Cooperation (2001-2007).

Oral and Poster Presentations at National and International Events:

- ***Rania El Backly*.** Oral presentation entitled : *"Current Status and Future of Endodontic Regeneration"* presented at the first AASTMT - Alamein Summer Dental Congress (ASDC), 17-20 August 2023, at the AASTMT University, College of Dentistry, Alamein campus, New Alamein City.

- ***Rania El Backly*.** Oral presentation entitled: *"Engineering Living Tissues:A Dental Perspective"* presented at the Scientific day of Alamein International University, Alamein, Egypt, July 16th, 2023.

- ***Rania El Backly*.** Oral presentation entitled: *"Regenerative Endodontics and Beyond: An Experience of The Tissue Engineering Laboratories at Alexandria University, Egypt"* presented at the AfricaHealth ExCon conference, Cairo, 6-9, June, 2023.

- ***Rania El Backly*.** Oral presentation entitled: "*Paving New Avenues for Regenerative Endodontics and Dentin/Pulp Regeneration"* presented at the 6th Cairo International Dental Congress, Cairo, 24-26, January, 2023.

- ***Rania El Backly*.** Oral presentation as part of the "Artificial Intelligence in Dentistry" webinar series entitled: *"From Regeneration to Artificial Intelligence: Changing the Face of Modern Endodontics Today"* presented *online* on January 10th, 2023. ***https://www.pathlms.com/iadr/courses/47691*.**

- ***Rania El Backly*.** Oral presentation entitled: *"Regenerative Endodontics: The Long Winding Road to Dentin/Pulp Regeneration"* presented at the Manama Health Conference & Expo, Manama, Bahrain, 10-13 December, 2022.

- ***Rania El Backly.*** Oral presentation entitled : *"Regenerative Endodontics and Beyond: An Experience of The Tissue Engineering Laboratories at Alexandria University, Egypt"* presented at the Division of oral biology, School of Dentistry, Leeds University, July 7th , 2022.

- ***Rania El Backly.*** Oral presentation entitled : "*Harnessing The Role Of Artificial Intelligence In Tissue Engineering And Regenerative Dentistry"* presented at the AfricaHealth ExCon conference, Cairo, 5-7, June, 2022.

- ***Rania M. El Backly et al.*** Oral presentation entitled: *"Poly (Glycerol Sebacate): An Elastomer For Regeneration Of Palatal Defects In Rabbits"* presented at the **6th world congress of the Tissue Engineering and Regenerative Medicine International Society** (TERMIS2021), (Virtual), Maastricht, Netherlands, 15-19, 2021.
- ***Rania El Backly.*** Oral presentation entitled : "From Regeneration to Artificial Intelligence: *Changing the Face of Modern Endodontics Today"* presented at the Artificial Intelligence workshop, Egy Health Expo conference, Cairo, 7-9, September, 2021.
- ***Rania El Backly,*** **Speaker at the APEC** (Asian Pacific Endodontic Confederation: http://www.apeconweb.org/) **online journal club** meeting on **Friday, July 9th**, 2021, discussing the article *"Quantitative Assessment of Intracanal Regenerated Tissues after Regenerative Endodontic Procedures in Mature Teeth Using Magnetic Resonance Imaging: A Randomized Controlled Clinical Trial".*

- ***Rania M. El Backly.*** Presenter in the oral debate session entitled: Regenerative endodontics versus apexification: From practice to evidence. Presented at the 2019 Pan Endo conference, Egypt, December 2019.
- ***Rania M. El Backly.*** Oral presentation entitled: Ethics in scientific research. Presented at the 2019 Neuroscience School and Conference of the International Brain Research Organization, Middle East and North Africa (IBRO-MENA) , Alexandria, Egypt, April, 2019.
- ***Rania M. El Backly.*** Oral presentation entitled: Dental stem cells: at the frontiers of neural regeneration and repair. Presented at the 2018 Neuroscience School and

Conference of the International Brain Research Organization Middle East and North Africa (IBRO-MENA) , Cairo, Egypt, November,11-16, 2018.

- ***Rania M. El Backly*.** Oral presentation (free communication) entitled: Emerging Multidisciplinary Therapeutic Approach For Managing A Fused Maxillary Incisor. Presented at the FDI world dental congress, held in Buenos Aires, Argentina, September 5-8, 2018.
- ***Rania M. El Backly*.** Oral presentation entitled: Tissue Regeneration in Endodontics: Endogenous Versus Exogenous Approaches. Presented at the 5th Pan Arab Endodontic Conference held in Cairo, Egypt, December 5-8, 2017.
- ***Rania M. El Backly*** . Invited to give a special talk at the "TWAS-ARO Roundtable on Responsible Science" which took place from 28-29 November 2017 at the Bibliotheca Alexandrina in Alexandria, Egypt.
- ***Rania M. El Backly.*** Oral presentation entitled: New Frontiers in Regenerative Endodontics and Dental Regeneration. Presented at the annual conference for the pediatric dentistry society, Alexandria University, March 3, 2017, Tolip Hotel, Alexandria, Egypt.
- ***Rania M. El Backly.*** Oral presentation entitled: Academic publishing and citation management. Presented as part of phase I of "Research Factory for Undergraduate Students", Faculty of Dentistry (December 2016) and Faculty of Science, February 2017, Alexandria University.
- ***Rania M. El Backly.*** Oral presentation entitled: Regenerative Endodontics: Following the road less traveled. Presented at The 20th Alexandria International Dental Congress (AIDC2016), November, 2016. Radissun Blu, Alexandria, Egypt.
- ***Rania M. El Backly.*** Oral presentation entitled: Can Research Sketch Your Future? Presented at the launching event of "Research Factory for Undergraduate Students", September 5, 2016, Faculty of Dentistry, Alexandria University.
- ***Rania M. El Backly.*** Oral presentation entitled: Regenerative Endodontics: From Science to Clinical Translation. Ramad Hospital; Dental Center, July 26, 2016.
- ***Rania M. El Backly*.** Poster presentation entitled: Recruitment of Circulating CD34+ Stem Cells Following Endodontic Periapical Surgery. Presented at the 2016 IADR/APR 94th general session, Seoul, South Korea, June 23, 2016.

- ***Rania M. El Backly***. Oral presentation entitled: New Frontiers for Stem Cell Applications in Regenerative Therapies. Student symposium. Faculty of Science, Alexandria University, April 16, 2016.
- ***Rania M. El Backly***. Oral presentation entitled: Research and Innovation: What, Why and How? Scientific Research and Innovation Day entitled: Can research in Egypt sketch your future? Faculty of Dentistry, Alexandria University, April, 2, 2016.
- ***Rania M. El Backly***. Oral presentation entitled: Tissue Engineering and Regenerative Medicine: Strategies for Promoting Endogenous Regeneration. El Galaa Military Hospital, Cairo, March 28, 2016.
- ***Rania M. El Backly***. Oral presentation entitled: Modulating Inflammation and Angiogenesis in Regeneration.3rd international molecular therapeutics and regenerative medicine workshop. Faculty of Science, Alexandria University, October 7-9, 2015.
- ***Rania M. El Backly***, Manal M. Saad and Mona K. Marei. In-situ regeneration of the dentin/pulp complex in a goat model. Poster presented at the Cairo IADR conference, Cairo, Egypt, 7-10 April, 2015.
- ***ElBackly.*** Participation in the conduction of a hands-on workshop entitled "Clinical Translation of Tissue Engineering and Regenerative Medicine in Dentistry" introducing the isolation and separation of apical papilla and dental pulp stem cells, December, 16-17, 2014.
- ***ElBackly.*** Oral presentation entitled: Platelet Rich Concentrates for Regenerative Dentistry Applications"; 19th Alexandria International Dental Congress (AIDC), October 2014, Alexandria, Egypt.
- Maria R. Todeschi and ***Rania ElBackly*** et al. Poster entitled: "A PRP-Based Periosteal Substitute Creates a Pro-Inflammatory and Angiogenic Environment Favourable For Bone Regeneration"; presented at the TERMIS-EU meeting, June 2014, Genoa, Italy.
- ***ElBackly*** et al. Poster entitled: Dentin/Pulp Tissue Regeneration Using Extracellular Matrix-Derived Scaffolds; presented at the TERMIS-EU meeting, June 2014, Genoa, Italy.

- ***ElBackly.*** Oral presentation entitled: “Host Cell Recruitment Patterns by BMP-2 Releasing Hyaluronic Acid Gels in a Mouse Subcutaneous Model”; presented at the TERMIS-EU meeting, June 2014, Genoa, Italy.
- ***ElBackly.*** Oral presentation entitled: “Biologic Scaffolds for Tissue Engineering: Mimicking Nature at Its Best” presented at The 14th Arab International Conference of Materials Science "Materials for Biomedical Applications", Institute of Graduate studies and Research (IGSR), Alexandria, Egypt from 1-3 December 2013.
- ***ElBackly.*** Oral presentation on Regenerative Endodontics at the Alex Dental Students’ union Conference, October 2013.
- ***ElBackly*** et al. Oral presentation at the Saudi International Congress on New Frontier in Organ Transplantation (SICOT), Riyadh, Saudi Arabia, March 2013.
- ***ElBackly*** et al. Oral presentation entitled: “ A Platelet Rich Plasma (PRP) Based Membrane as a Periosteal Substitute with Enhanced Osteogenic and Angiogenic Properties: a New Concept for Bone Repair” presented at TERMIS world meeting, Vienna, Austria, September 5-8,2012.
- ***ElBackly R*** et al. Oral presentation entitled: “Platelet lysate induces in vitro wound healing of human keratinocytes associated with a strong pro-inflammatory response” presented at TERMIS-EU meeting, June 7-10, 2011- Granada, Spain.
- ***ElBackly R*** et al. Poster presentation entitled: “Platelet Rich Plasma Enhances Osteoconductive Properties of A Hydroxyapatite-B-Tricalcium Phosphate Scaffold (Skelite) In Critical Size Rabbit Calvarial Defects” presented at the TERMIS-EU meeting, June 7-10, 2011- Granada, Spain.
- ***ElBackly R*** et al. Poster presented at TERMIS-EU, Galway, Ireland, June 13-17, 2010 entitled: Platelet lysate promotes wound closure of human keratinocytes under physiologic and inflammatory conditions.
- ***ElBackly R*** et al. Oral presentation entitled: Regenerative Endodontics and the Promise of A Biomimetic root canal, presented at the 1st Alexandria International Congress on Tissue engineering, Bibliotheca Alexandrina, February, 2009.
- ***ElBackly R*** et al. Oral presentation at the Alexandria International Dental Congress, 2008.
- ***El-Backly RN***, Marei MK, El-Ashwah AA, Saad MM, Fata MM, Al-Khodary MA; “ Vital pulp therapy by tissue engineering” presented at The *Regenerate World*

Congress on Tissue Engineering and Regenerative Medicine, April 24 – 27, 2006 at the Westin Convention Center, Pittsburgh,Pennsylvania.

- ***El-Backly RN***, Marei MK, El-Ashwah AA, Saad MM, Fata MM, Al-Khodary MA; " Vital pulp therapy by tissue engineering" presented at the First US-Egypt joint workshop on tissue engineering, at National Research Center, Cairo, January 29-February 2, 2006.

Recent relevant Publications:

- ***Elbackly, R.,*** Zaky, S., & Marei, M. K. (2023). Editorial for the research topic: Regenerating the dentin-pulp complex: understanding the challenges that lie ahead. *Frontiers in Bioengineering and Biotechnology*, *11*, 1249969.
- Elshazly, N., Saad, M. M., ***El Backly, R.*** M., Hamdy, A., Patruno, M., Nouh, S., Marei, M. K. (2023). Nanoscale borosilicate bioactive glass for regenerative therapy of full-thickness skin defects in rabbit animal model. *Frontiers in Bioengineering and Biotechnology*, *11*, 1036125.
- Abdalla, H., Moussa, S., Mokhless, N., & ***El Backly, R.*** (2023). Regenerative Endodontic Treatment of Mature Necrotic Permanent Teeth Using Hyaluronic Acid Gel: A Case Report. *Alexandria Dental Journal*, *47*(4), 13-13.
- Abdelnaby, P., Ibrahim, M., & ***El Backly, R***. (2023). EVALUATION OF APICAL DEBRIS EXTRUSION AFTER RETREATMENT USING DIFFERENT ROTARY FILE SYSTEMS (IN VITRO STUDY). *Alexandria Dental Journal*, *47*(4), 17-17.
- Mahmoud, A., Moussa, S., ***El Backly, R.***, & El-Gendy, R. (2022). Investigating the residual effect of silver nanoparticles gel as an intra-canal medicament on dental pulp stromal cells. *BMC Oral Health*, *22*(1), 1-14.
- Sedek, E., Barakat, H., Lotfy, W., Moussa, S., AbouShelib, M., & ***El Backly, R***. (2022). Human Treated Dentin Matrix Hydrogel as a Drug Delivery Scaffold for Regenerative Endodontics. *Iranian Endodontic Journal*, *17*(4).
- Sharaf, P. H., ***El Backly, R.*** M., Sherif, R. A., Zaazou, A. M., & Hafez, S. F. (2022). Microbial identification from traumatized immature permanent teeth with periapical lesions using matrix-assisted laser desorption/ionization time-of-flight mass spectrometry. *BMC Oral Health*, *22*(1), 661.
- ***El Backly, R***., Hamdy, A., El Mahalawy, A., El Ashwah, A., Nouh, S., Saad, M., & Zaky, S. (2022). *POLY (GLYCEROL SEBACATE): AN ELASTOMER FOR*

REGENERATION OF PALATAL DEFECTS IN RABBITS. Paper presented at the TISSUE ENGINEERING PART A.

- Elnawam, H., Abdelmougod, M., Mobarak, A., Hussein, M., Aboualmakarem, H., Girgis, M., & ***El Backly, R***. (2022). Regenerative endodontics and minimally invasive dentistry: intertwining paths crossing over into clinical translation. *Frontiers in Bioengineering and Biotechnology, 10*, 837639.

- Elnaggar, S. E., ***El Backly, R***. M., Zaazou, A. M., Morsy Elshabrawy, S., & Abdallah, A. A. (2021). Effect of different irrigation protocols for applications in regenerative endodontics on mechanical properties of root dentin. *Australian Endodontic Journal, 47*(2), 228-235.

- Hamdy, A., Saad, M., Nouh, S., ElAshwah, A., ElMahallawy, A., Zaky, S., & ***ElBackly, R***. (2022). SURGICAL CREATION OF CLEFT-LIKE PALATAL DEFECTS IN NEW ZEALAND RABBITS (A PILOT STUDY). *Alexandria Dental Journal*(10.21608/ADJALEXU.2021.69140.1174).

- Ayat Hamdy, ***Rania M. El Backly***, Ahmed S. El Mahallawy, Adham A. El Ashwah, Samir R. Nouh, Manal Saad, Samer Zaky. Regeneration of Palatal Cleft-Like Surgical Defects in Rabbits Using a Poly (glycerol sebacate) Elastomer Scaffold. *Poster presented at the BSODR-IADR Congress, 1-3 September, 2021, Birmingham, UK.*

- Ahmed Mahmoud, Sybel Moussa, ***Rania El Backly***, Reem El-Gendy. Biocompatibility of Silver Nanoparticles Gel as an Endodontic Intra-Canal Medicament. *Oral presentation at the BSODR-IADR Congress, 1-3 September, 2021, Birmingham, UK.*

- Elhamouly Y, ***El Backly RM***, Talaat DM, Omar SS, El Tantawi M, Dowidar KM. Tailored 70S30C Bioactive glass induces severe inflammation as pulpotomy agent in primary teeth: an interim analysis of a randomised controlled trial. Clinical Oral Investigations. 2021 Jan 6:1-3.

- Enan HA, Omran EA, ***El Backly RM***, Zaazou A, Ibrahim MM. In Vitro Evaluation Of The Antimicrobial Effect Of Endosequence BC And AH Plus Root Canal Sealers On Enteroccocus Faecalis. Alexandria Dental Journal. 2021 Jan 30.

- Elnaggar SE, ***El Backly RM***, Zaazou AM, Morsy Elshabrawy S, Abdallah AA. Effect of different irrigation protocols for applications in regenerative endodontics

on mechanical properties of root dentin. Australian Endodontic Journal. 2020 Dec 12.

- Nashat AM, Ibrahim MM, ***El Backly RM***. Detection Of Root Canal Anatomical Variations In Mandibular Premolars In An Egyptian Population. Alexandria Dental Journal. 2020 Dec 1;45(3):18-22.

- ***El Backly RM***, Kotry GS, Moussa H. Multidisciplinary management of a fused maxillary incisor: Case report with 5-year follow-up. Clin Case Rep. 2020 Dec 10;9(2):775-786.

- Aly AM, Abdallah AM, ***El Backly RM***. Efficacy Of Three Different Retreatment File Systems For Gutta-Percha Removal Using Cone Beam Computed Tomography. Alexandria Dental Journal. 2020 Dec 1;45(3):23-8.

- El-Kateb NM, ***El-Backly RN***, Amin WM, Abdalla AM. Quantitative Assessment of Intracanal Regenerated Tissues after Regenerative Endodontic Procedures in Mature Teeth Using Magnetic Resonance Imaging: A Randomized Controlled Clinical Trial. J Endod. 2020 Mar 12. ***(Awarded the prize for JOE paper of the year in regenerative endodontics).***
- Eltawila AM, ***El Backly R***. Autologous platelet-rich-fibrin-induced revascularization sequelae: Two case reports. World Journal of Stomatology. 2019 Dec 18;7(3):28-38.
- El Nawam H, ***El Backly R***, Zaky A, Abdallah A. Low-level laser therapy affects dentinogenesis and angiogenesis of in vitro 3D cultures of dentin-pulp complex. Lasers Med Sci. 2019 Oct;34(8):1689-1698.
- Reem Sadek, Sybel Moussa, ***Rania El Backly***, Abdel fattah Hammouda. Evaluation of the efficacy of three antimicrobial agents used for regenerative endodontics (in vitro study). Microbial drug resistance. 2019; 25 (5), 761-771.
- Reem Sadek, Sybel Moussa, ***Rania El Backly***, Abdel fattah Hammouda. Comparison between three novel intracanal medicaments used for regenerative endodontics (in vitro study). E-Poster presented at the 21st Alexandria International dental congress (AIDC), November 6-9, 2018.
- Eman Sedek, ***Rania El Backly***, Moustafa Aboushelib, Sybel Moussa, Walid Lotfy. Alginate/ Human Treated Dentin Matrix Hydrogel as A Drug Delivery System for

Regenerative Dentistry Applications: A Preliminary Study. E-Poster presented at the 21st Alexandria International dental congress (AIDC), November 6-9, 2018.

- ***Rania M. El Backly, Gehan Kotry, Hassan Moussa, Mona Marei*.** Emerging Multidisciplinary Therapeutic Approach For Managing A Fused Maxillary Incisor. International Dental Journal 2018; 68 (Suppl. 2): 42—84.
- Genena, Salma, ***Elbackly Rania***, Zaazou Ashraf and Abdallah Amr. Traumatic Bone Cyst of Mandible; An Unconventional Approach and Case Report. Presented at the 20th world congress on dental traumatology, San Diego, California, USA, August 15-18,2018.
- Noha El Kateb, ***Rania El Backly***, Wessam Amin, Tamer Nassef, Amr Abdallah. Assessment of Tissue Regeneration Following Regenerative Endodontic Procedures Using MRI, J Dent Res, 97, abstract #: 3135, 2018 (www.iadr.org). This poster presentation was awarded 1st prize from the pulp biology and regeneration IADR group.

- Hytham Abdelaziz, ***Rania El Backly***, Amr Abdallah. Effect of Using a Universal Adhesive on Tooth Discoloration After Simulated Regenerative Endodontic Procedures (An in-vitro Study). J Dent Res, 97, abstract #: 1836, 2018 (www.iadr.org). Presented as part of the IADR Hatton competition and winner of the Egyptian IADR section competition.

- Nada O***., El Backly RM***. Stem cells from the apical papilla (SCAP) as a tool for endogenous tissue regeneration. Front Bioeng Biotechnol. 24 July 2018 https://doi.org/10.3389/fbioe.2018.00103. Review.

- Marei MK, ***El Backly RM***. Dental Mesenchymal Stem Cell-Based Translational Regenerative Dentistry: From Artificial to Biological Replacement. Front Bioeng Biotechnol. 2018 May 2;6:49. doi: 10.3389/fbioe.2018.00049. eCollection 2018.Review.

- R Abou Samra, ***R El Backly***, H Aly, Nouh, Samir, S Moussa. Revascularization in Mature Permanent Teeth With Necrotic Pulp And Apical Periodontitis: Case Series. Alexandria Dental Journal 2018; 43 (1), 130.

- Soha F. Massoud, Sybel M. Moussa, Seham A. Hanafy, ***Rania M. El Backly***. Evaluation of the Microhardness of Root Canal Dentin after Different Irrigation Protocols (In Vitro Study). Alexandria Dental Journal; 42, 2017.

- Effect of Platelet-rich Plasma Biomembrane on Enhancing Bone Regeneration Following Endodontic Surgery. S. Genena, ***R. M. El Backly***, A. Zaazou, A. El Hadidi, A. Abdallah. Abstract # 247123. Presented at the American Association of Endodontics 2017 conference, April 26-19, 2017. *JOE* — Volume 43, Number 3, March 2017.

- Asmaa M. Abdel-Aziz, ***Rania M. El Backly***, Nahla A. Taha, Azza El-Maghraby, Sherif H. Kandil. Preparation and Characterization of Carbon Nanofibrous/ Hydroxyapatite Sheets for Bone Tissue Engineering. Materials Science and Engineering C. Volume 76, 1 July 2017, Pages 1188–1195.

- Todeschi MR, ***El Backly RM***, Varghese OP, Hilborn J, Cancedda R, Mastrogiacomo M. Host cell recruitment patterns by bone morphogenetic protein-2 releasing hyaluronic acid hydrogels in a mouse subcutaneous environment. Regen Med. 2017 Jul;12(5):525-539. doi: 10.2217/rme-2017-0023.

- ***Rania M. El Backly*** and Mona K. Marei. Dental Pulp Stem Cells in Tissue Engineering and Regenerative Medicine: Opportunities for Translational Research. In: Advances in Stem Cell Therapy: Bench to Bedside; edited by Nagwa El-Badri, Humana press, Springer, Due: November 7, 2016.

- Recruitment of Circulating CD34+ Stem Cells Following Endodontic Periapical Surgery. S. Genena, ***R. M. El Backly***, A. El Hadidi, A. Zaazou, A. Abdallah, abstract # 2473769. J Dent Res, 95(Special issue B), 2016. (www.iadr.org).

- N. El Shazley, A. Hamdy, H.A. El-Eneen, ***R.M. El Backly***, M.M. Saad, W. Essam, H. Moussa, M. El Tantawi, H. Jain, and M.K. Marei. Bioglass in Alveolar Bone Regeneration in Orthodontic Patients: Randomized Controlled Clinical Trial. JDR Clinical & Translational Research, October 2016; vol. 1, 3: pp. 244-255, first published on August 1, 2016.

- Raouf H. Helmy, Nayera A. Mokhless, ***Rania M. El Backly.*** In Vitro Comparative Efficacy of Two Techniques for Irrigant Delivery in Curved Root Canals**.** ADJ, 2016. [Epub ahead of print].

- Hisham M. Gad, Ashraf M. Zaazou, ***Rania M. El Backly***. Comparison of reciprocating versus rotary motion for gutta-percha removal using cone beam computed tomography (an in vitro study). ADJ. Volume 41. 2016. [Epub ahead of print].

- Todeschi MR, ***El Backly R***, Capelli C, Daga A, Patrone E, Introna M, Cancedda R, Mastrogiacomo M. Transplanted Umbilical Cord Mesenchymal Stem Cells Modify the In Vivo Microenvironment Enhancing Angiogenesis and Leading to Bone Regeneration. Stem Cells Dev. 2015 Jul 1;24(13):1570-81.

- ***El Backly RM***., Chiapale D., Muraglia A., Tromba G., Ottonello C., Santolini F., Cancedda R. and Mastrogiacomo M. A modified Rabbit Ulna Defect Model For Evaluating Periosteal Substitutes In Bone Engineering: A Pilot Study. Front Bioeng Biotechnol. 2015 Jan 6;2:80.
- ***R ElBackly***, MR Todeschi, OP Varghese, J Hilborn, R Cancedda and M Mastrogiacomo. Host cell recruitment patterns by BMP-2 releasing hyaluronic acid gels in a mouse subcutaneous model. J Tissue Eng Regen Med 2014; 8 (Suppl. 1): 65.

- MR Todeschi, ***R El Backly***, A Papait, R Cancedda and M Mastrogiacomo. A PRP based periosteal substitute creates a proinflammatory and angiogenic environment favourable for bone regeneration. J Tissue Eng Regen Med 2014; 8 (Suppl. 1): 271.

- ***RM El Backly***, MM Saad, SR Nouh and MK Marei. Dentin/pulp tissue regeneration using extracellular matrix-derived scaffolds. J Tissue Eng Regen Med 2014; 8 (Suppl. 1): 438.
- Mona K. Marei , Naglaa B. Nagy, Mona M. Saad, Samer H. Zaky, ***Rania M. El backly***, Ahmad M. Eweida, and Mohamed A. Alkhodary. Strategy For A Biomimetic Paradigm In Dental And Craniofacial Tissue Engineering, In: Biomimetics: Advancing Nanobiomaterials and Tissue Engineering. (Book Chapter: 2013)**.**
- ***Rania M. El Backly***, Maddalena Mastrogiacomo and Ranieri Cancedda. Bone Regeneration and Bioengineering. In: Regenerative Medicine Technology as

Applied to Organ Transplantation. Editors: Giuseppe Orlando, Jan Lerut, and Robert J. Stratta. Published by Elsevier, 2014.

- ***RM El Backly***, SH Zaky, B Canciani, MM Saad, AM Eweida, F Brun, G Tromba, VS Komlev, M Mastrogiacomo, MK Marei, and R Cancedda. Platelet Rich Plasma Enhances Osteoconductive Properties of a Hydroxyapatite-β-Tricalcium Phosphate Scaffold (Skelite^{tm}) in Critical Size Rabbit Calvarial Defects. J Craniomaxillofac Surg. 2014 Jul;42(5):e70-9
- Completion of PhD thesis entitled: "Platelet-rich plasma-derived concentrates for regenerative medicine and dental applications: Fine tuning the host response by modulating inflammation, angiogenesis, and bone regeneration", November 20, 2012**.**
- ***El Backly, R.M***., Zaky, S.H., Muraglia, A., Tonachini, L., Brun, F., Canciani, B., Chiapale, D., Santolini, F., Cancedda, R., and Mastrogiacomo, M. A Platelet Rich Plasma (PRP) Based Membrane as a Periosteal Substitute with Enhanced Osteogenic and Angiogenic Properties: a New Concept for Bone Repair. Tissue Eng Part A. 2013 Jan;19(1-2):152-65.
- Marei KM, AlKodary MA, ***El Backly RM***, Zaky SH, Eweida AM,Gad MA,Abdel-Wahed N,Kadah YM : Principles, applications and technology of craniofacial bone tissue engineering. In : Integrated biomaterials for medical application. Edition Ramalingam M, Tiwari A, Ramkrishna S, et al VBRI press 2012 .
- Chen J, Bly RA, ***El-Backly RM***, Saad MM, Alkodary MA,Fata MM, Moore WA, Arnold CB, Marei MK, Soboyejo WO: In-vivo study of adhesion and bone growth around implanted laser groove/RGD-functionalized Ti-6Al-4V pins in rabbit femurs. *Materials science and engineering C. 2011,31: 826-832.*
- ***ElBackly RE***, Ulivi V, Tonachini L, Cancedda R, Descalzi F, Mastrogiacomo M.Platelet lysate induces in vitro wound healing of human keratinocytes associated with a strong proinflammatory response. Tissue Eng Part A. 2011,Jul;17(13-14):1787-800. PMID: 21385008.
- ***ElBackly R***. Co-author in: Regenerative Dentistry, Mona K. Marei, Synthesis Lectures on Tissue Engineering, 2010, Vol. 2, No. 1, Pages 1-178.
- ***ElBackly RM***, Cancedda R. Bone Marrow Stem Cells in Clinical Application: Harnessing Paracrine Roles and Niche Mechanisms. Adv Biochem Eng Biotechnol. 2010 Aug 27. [Epub ahead of print] PubMed PMID: 20803145.

- Marei MK, Saad MM, El-Ashwah AM, ***El-Backly RM***, Al-Khodary MA. Experimental formation of periodontal structure around titanium implants utilizing bone marrow mesenchymal stem cells: a pilot study. J Oral Implantol. 2009;35(3):106-29. PubMed PMID: 19579523.
- ***El-Backly RM***, Massoud AG, El-Badry AM, Sherif RA, Marei MK. Regeneration of dentine/pulp-like tissue using a dental pulp stem cell/poly(lactic-co-glycolic) acid scaffold construct in New Zealand white rabbits. Aust Endod J. 2008 Aug;34(2):52-67. PubMed PMID: 18666990.
- Marei MK., Fata MM., Saad MM., El-Khodary MA., ***El-Backly RN.,*** Nashaat DH., Sakr MR., and Helal SN.: e-book "Topics in Tissue Engineering, Chapter 30: Preservation and Regeneration of alveolar bone by tissue engineering implants". Website: www.tissue-engineering-oc.com.

Theses Supervision:

- Stereomicroscopic evaluation of the amount of voids in mandibular premolars obturated with different techniques using calcium silicate-based sealer (in vitro study). Master thesis in endodontics by Nada Said Elzenaty Ammar, Faculty of Dentistry, Alexandria University; (2021- current time).
- Evaluation of tooth colour change and penetration depth associated with curcumin-mediated photodynamic therapies (in-vitro study). Master thesis in endodontics by Nayrouz Bahaa El-Din Ahmed Soliman Mahmoud, Faculty of Dentistry, Alexandria University; (2022- current time).
- Effect of different regenerative endodontic protocols on eradication of dual species biofilm in a three-dimensionally printed model (in vitro study). Master thesis in endodontics by Elsaeed Mustafa Elsaeed, Faculty of Dentistry, Alexandria University; (2021- current time).
- Regenerative capacity of a novel pulp-derived extracellular matrix/hyaluronic acid scaffold in necrotic mature teeth with apical periodontitis (an experimental animal study in dogs). PhD thesis in Endodontics by Hisham Elnawam, Faculty of dentistry, Alexandria University; (2021- Current time).

- Biochemical Characterization and in vitro bone regeneration activity of Extracellular Matrix Hydrogels Derived from Different Tissues. Master thesis in Biochemistry by Safa Saied, Faculty of Science, Alexandria University; (2020- Current time).

- The Effect Of Silver Nano-Particles For Use As An Intracanal Medicament For Regenerative Endodontics On Viability And Attachment Of Dental Pulp Stem Cells (In Vitro Study). Master thesis in Endodontics by Ahmed Sobhy, Faculty of Dentistry, Alexandria University; (2019- 2023).

- Comparative Study To Evaluate Apical Extrusion Of Debris And Remaining Gutta Percha After Using Different Rotary Files (In Vitro Study). Master thesis in Endodontics by Passent Abdelnaby, Faculty of Dentistry, Alexandria University; (2019- 2023).

- Microbiological Evaluation Of Single Versus Multiple Visits Regeneration using Maldi-Tof Mass Spectrometry (A Randomized Controlled Clinical Trial), Phd Thesis In Endodontics By Pervine Hassan Sharaf, Faculty Of Dentistry, Alexandria University; (2018-2022).

- Effect Of Different Irrigation Protocols Used In Regenerative Endodontics On Mechanical Properties Of Root Dentin (An In Vitro Study) Master thesis in Endodontics by Semha Elsayed Ahmed Faculty of Dentistry, Alexandria University; (2018- 2021).

- Scanning Electron Microscopy Of Surface Changes Of Reciproc And Reciproc Blue Files Before And After Use In Extracted Molars (Invitro Study) Master Thesis In Endodontics By Rania Ahmed Mohamed Balbaa Faculty Of Dentistry, Alexandria University; (2018- Current Time).

- Clinical and Radiographic Outcomes Of Chitosan Scaffold And MTA In Pulpotomy In Mature Permanent Teeth With Irreversible Pulpitis (A Randomized Controlled Trial) - Phd Thesis In Endodontics By Maha Tarek Aboul Kheir, Faculty Of Dentistry, Alexandria University; (2018- 2022).

- Detection Of Root Canal Anatomical Variations In Mandibular Premolars (In vitro Study). Master thesis in Endodontics by Ahmed Mohamed Nashat Salem , Faculty of Dentistry, Alexandria University; (2018- 2019).

- Effect Of Poly (Glycerol Sebacate) Scaffold On Regeneration Of Palatal Defects Created In Rabbits(An Experimental Study). Master Thesis In Oral And Maxillofacial Surgery By Ayat Hamdy Mahmoud , Faculty Of Dentistry, Alexandria University; (2018- Present Time).

- Injectable Human Treated Dentin Matrix Hydrogel as Delivery System for Endodontic Antimicrobial Agents (In-vitro Study). Master thesis in Endodontics by Eman Mohamed Ibrahim Sedek, Faculty of Dentistry, Alexandria University; (2017- 2019).

- Efficacy of Three Different Retreatment File Systems for Gutta-Percha Removal Using Cone Beam Computed Tomography (An in vitro study). Master thesis in Endodontics by Ahmed Mohamed Mahmoud Aly, Faculty of Dentistry, Alexandria University; (2017- 2019).

- Comparison of Tailored Amorphous Multiporous Bioglass and Biodentine as Regenerative Pulp Capping Agents in Primary Teeth: A Randomised Controlled Clinical Trial. PhD thesis in pediatric dentistry by Yasmine Ibrahim Mohamed El-Hamouly; (2017- 2019).

- Magnetic Resonance Imaging Assessment of Pulp Regeneration Following Regenerative Endodontic Procedures with Different Instrumentation Techniques in Mature Teeth – A Randomized Controlled Clinical Trial. PhD thesis in Endodontics by Noha Mohamed El Kateb, Faculty of Dentistry, Alexandria University; (2017- 2019).

- Evaluation of the Efficacy of Three Antimicrobial Agents Used For Regenerative Endodontics (An In Vitro Study). Master thesis in Endodontics by Reem Wael Sadek, Faculty of Dentistry, Alexandria University; (2016- 2018).

- Effects of Low Level Laser Therapy on Dentinogenesis and Angiogenesis of 3D Cultures of the Dentin-Pulp Complex (An in vitro study). Master thesis in Endodontics by Hisham El Nawam, Faculty of Dentistry, Alexandria University; (2015- 2017).

- Characterization of stem cells from the apical papilla of immature premolars for Applications in Regenerative Dentistry (an in vitro study). Master thesis in Oral biology by Ola AbdelMoniem Azab, Faculty of Dentistry, Alexandria University; (2015- 2017).

- Effect of Using a Dentin Bonding Agent on Tooth Discoloration after Simulated Regenerative Endodontic Procedures (An in Vitro study). Master thesis in Endodontics by Hytham Abdelaziz, Faculty of Dentistry, Alexandria University; (2016- 2017).

- Evaluation of the microhardness of root canal dentin after different irrigation protocols (an in vitro study). Master thesis in Endodontics by Soha Fathi Abd El Ghani Massoud, Faculty of Dentistry, Alexandria University; (2015- 2017).

- Surgical endodontics using platelet-rich plasma biomembrane for bone regeneration (a randomized controlled clinical study). PhD thesis by Salma Mohamed Hany Farid Genena in Endodontics, Faculty of Dentistry, Alexandria University; (2014- 2017).

- Clinical and histological evaluation of revascularization in mature permanent teeth. Phd thesis by Rasha Ahmed Abou Samra, in Endodontics, Faculty of Dentistry, Alexandria University; (2014- current time).

- Comparison of reciprocating versus rotary motion for removal of guttapercha using cone beam computed tomography (an in vitro study). Master thesis by Hisham Mohamed Fouad Gad in Endodontics, Faculty of Dentistry, Alexandria University; (2014- 2016).

- Evaluation of irrigant delivery in curved canals using four irrigation techniques (in vitro study). Master thesis by Raouf Hamdy Ahmed Helmy in Endodontics, Faculty of Dentistry, Alexandria University; (2013- 2016).

- Preparation and characterization of carbon nanofiber (cnf) / hydroxyapatite (hap) nanocomposite for biomedical applications. Master Thesis By Asmaa Mahmoud Abd El-Aziz Mohamed, Alexandria University Institute of Graduate Studies &Research Department of Materials Science; (2013- 2016).

Language and technical skills

- Fluent speaker of Arabic, English and Italian
- Excellent computing skills (Microsoft word, excel, endnote, PowerPoint…etc.)

Activities

- Assigned mentor for second year students at the faculty of dentistry, Alexandria University (2014-2015).
- Quality assurance coordinator for the conservative dentistry department, Faculty of dentistry, Alexandria University.
- Faculty of Dentistry coordinator for the center for career development (CDCE) for Alexandria University (2016-2018).
- Research factory project advisor (2016-2018).

- Member of the committee for education development at the faculty of dentistry.
- Member of the faculty ethics committee for two terms; 2022 and 2023.
- Head of endodontics division at the conservative dentistry department; 2023-current time.