

Editorial

In Memoriam: Professor Reza Fekrazad (1967–2026)— A Life Dedicated to Light, Healing, and Scientific Collaboration

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Citation Shahrezaee M. In Memoriam: Professor Reza Fekrazad (1967–2026)—A Life Dedicated to Light, Healing, and Scientific Collaboration. *Journal of Translational Regenerative Medicine*. 2025; 1:E1. <http://dx.doi.org/10.32598/JTRM.1.1>

doi <http://dx.doi.org/10.32598/JTRM.1.2>

The scientific community was deeply saddened by the passing of Professor Reza Fekrazad on July 20, 2026. He was a distinguished clinician-scientist, an influential academic leader, and an esteemed member of the Editorial Board of the *Journal of Translational and Regenerative Medicine*. His untimely passing represents a profound loss to his family, friends, colleagues, and students, as well as to the international communities of photomedicine, laser dentistry, and regenerative science.

Professor Fekrazad's professional life was characterized by an uncommon combination of scientific curiosity, institutional leadership, international engagement, and a genuine commitment to interdisciplinary collaboration. A periodontist by training, he devoted much of his academic career to investigating how light-based interventions could influence biological processes, control infection, facilitate tissue repair, and improve clinical outcomes. He was among the scholars who helped transform laser dentistry and photobiomodulation in Iran from relatively limited technical practices into established fields of research, education, and evidence-informed clinical care.



Reza Fekrazad (1967–2026)

At *AJA University of Medical Sciences*, Professor Fekrazad played a central role in developing research and academic programs related to laser medicine and radiation sciences. He founded and directed the Radiation Sciences Research Center and contributed substantially to research leadership within the Faculty of Dentistry.

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The academic environment he fostered brought together clinicians, dentists, cellular scientists, engineers, and researchers from related disciplines. In doing so, he contributed not only to scientific publications but also to the establishment of research infrastructure, collaborative networks, and opportunities for younger investigators. Although periodontics was his principal clinical specialty, his scientific output reflected extensive engagement with photobiomodulation, photodynamic therapy, tissue engineering, and regenerative biology.

His influence extended well beyond his home institution. Through sustained involvement in national and international scientific organizations, he became a prominent representative of Iranian laser medicine and dentistry. His leadership activities included service in the [Iranian Medical Laser Association](#), Iran's national laser research community, the [World Association for Photobiomodulation Therapy \(WALT\)](#), and international dental laser organizations. These responsibilities reflected the confidence placed in him not only as a knowledgeable scientist but also as a leader capable of connecting individuals, institutions, and scientific disciplines.

The breadth of Professor Fekrazad's scholarship was remarkable. His work encompassed photobiomodulation, laser-tissue interactions, antimicrobial photodynamic therapy, periodontal and peri-implant therapy, oral surgery, pain and inflammation control, stem cell biology, wound healing, bone regeneration, and tissue engineering. What distinguished his scientific perspective, however, was not merely the range of subjects he addressed, but his ability to recognize the conceptual relationships among them.

For Professor Fekrazad, light was not merely a surgical instrument or technical adjunct; it was a biological stimulus capable of modulating cellular activity, mitochondrial function, inflammatory responses, angiogenesis, microbial viability, and the regenerative microenvironment. This perspective enabled him to view laser-based interventions not as isolated procedures but as potentially integrated components of modern regenerative strategies.

His contributions to photobiomodulation were particularly significant. Together with his collaborators, he examined its applications across periodontology, implant dentistry, endodontics, restorative dentistry, oral medicine, and surgical care. Their research explored the potential of photobiomodulation to reduce pain and inflammation, support tissue repair, improve postoperative recovery, promote bone metabolism, and influence clinical healing. At the same time, his publications repeat-

edly emphasized the importance of wavelength, energy density, exposure parameters, treatment timing, and biological context. He recognized that photobiomodulation was neither a universal intervention nor a treatment that could be separated from rigorous dosimetry and critical evaluation [1-4].

His work at the intersection of photobiomodulation and stem cell science was especially relevant to regenerative medicine. He contributed to research examining how light exposure could influence stem cell proliferation, viability, differentiation, mitochondrial activity, and cellular signaling. His review of the effects of photobiomodulation on mesenchymal stem cells became an important contribution to this field, while subsequent studies involving his research network further explored the responses of dental-derived stem cells and other regenerative cell populations [1, 5].

These studies helped advance the concept that photobiomodulation might serve not only as an adjunctive method for relieving symptoms but also as a means of optimizing the biological environment required for regeneration. In tissue engineering, the traditional triad of cells, scaffolds, and signaling factors may be complemented by carefully delivered physical stimuli. Professor Fekrazad's work encouraged researchers to consider light as one such stimulus: a controllable biological input capable of influencing cellular behavior and tissue responses.

Bone healing and regeneration were also recurring themes in his scholarship. This field provided a natural bridge among dentistry, maxillofacial surgery, orthopedics, and regenerative medicine. His work contributed to the growing body of evidence examining how low-intensity laser therapy and photobiomodulation protocols might affect osteogenic differentiation, bone-forming cells, inflammation, and the molecular mechanisms involved in bone repair [2].

Professor Fekrazad also made substantial contributions to antimicrobial photodynamic therapy. His laboratory and clinical investigations evaluated light-activated antimicrobial approaches against oral pathogens and biofilms in periodontal, endodontic, restorative, and implant-related settings. Together with his colleagues, he helped clarify both the therapeutic promise and the methodological complexities of these interventions [6-8].

This field has gained particular relevance in an era of increasing antimicrobial resistance and growing concern about unnecessary or indiscriminate antibiotic use. By

investigating localized, non-antibiotic strategies for microbial control, Professor Fekrazad contributed to a line of research that was both clinically relevant and globally important. His studies and reviews addressed applications against periodontal pathogens, antibiotic-resistant organisms, cariogenic bacteria, and *Candida* species, while emphasizing that therapeutic efficacy depends on the photosensitizer, wavelength, irradiation parameters, microbial target, and clinical environment.

Yet scientific publications, academic appointments, and organizational titles capture only part of his legacy. Those who knew Professor Fekrazad will also remember his openness to new ideas, his willingness to support younger colleagues, and his ability to create opportunities for collaborative work. When presented with an interdisciplinary proposal, he did not begin by asking why it might fail; more often, he asked how it could be made possible.

I witnessed this quality personally while organizing the first major multidisciplinary panel on regenerative medicine that I chaired at the Annual Congress of the [Iranian Society of Surgeons](#) approximately two years ago. Entitled “Regenerative medicine: A Multidisciplinary Approach,” the panel was designed to bring together experts from diverse clinical and scientific backgrounds in a field that cannot meaningfully progress within the boundaries of any single discipline.

Professor Fekrazad supported this initiative with generosity, enthusiasm, and a sincere belief in its scientific value. His participation strengthened the multidisciplinary character of the program and demonstrated his conviction that advances in regenerative medicine require sustained communication among surgeons, dentists, basic scientists, engineers, and researchers working with emerging technologies. His support during that experience remains one of my most valued professional memories of him.

His association with the [Journal of Translational and Regenerative Medicine](#) carried the same significance. As a member of the Editorial Board, he embodied the qualities that the journal seeks to promote: translational thinking, scientific openness, interdisciplinary dialogue, and the responsible advancement of emerging knowledge from laboratory investigation toward meaningful clinical application.

For a young scientific journal, the participation of established scholars is never merely symbolic. Their involvement helps shape its identity, standards, and in-

tellectual direction. Professor Fekrazad’s willingness to join the Editorial Board was therefore deeply appreciated. His name will remain part of the early history of this journal, and the scientific values he represented should continue to inform its future development.

The passing of a scholar confronts us with a question that extends beyond the number of publications, citations, positions, or awards accumulated during a career: what remains when a life devoted to science is interrupted?

In Professor Fekrazad’s case, much remains. His legacy endures in the research centers and scientific networks he helped establish; in the students and investigators whom he trained, encouraged, or connected; and in the scientific questions he pursued and the methods that future researchers will continue to refine. It is reflected in the growing integration of photobiomodulation with cell therapy, tissue engineering, bone regeneration, infection control, and clinical dentistry. Above all, it lives on in the example of a scientist who understood that progress accelerates when disciplines communicate rather than compete.

The international scientific community has lost a productive investigator and committed academic leader. Our journal has lost a valued member of its Editorial Board. Many of us have lost a respected colleague and friend.

On behalf of the Editorial Board of the Journal of Translational and Regenerative Medicine, I extend my deepest condolences to Professor Fekrazad’s family, colleagues, students, and friends. We honor his scientific accomplishments, institutional contributions, generosity toward colleagues, and enduring commitment to collaboration.

May his memory continue to inspire those who carry forward the work to which he devoted his life: harnessing science, knowledge, and interdisciplinary cooperation to advance healing.

Ethical Considerations

Compliance with ethical guidelines

There were no ethical considerations to be considered in this research.

Funding

No funding was received for the preparation or publication of this editorial.

Conflict of interest

The author declared no conflict of interest.

Acknowledgments

The author gratefully acknowledges Professor Alireza Khoshdel for his thoughtful comments and valuable suggestions during the preparation of this editorial. His constructive review contributed to improving the manuscript's clarity and overall quality.

References

- [1] Fekrazad R, Asefi S, Allahdadi M, Kalhori KAM. Effect of photobiomodulation on mesenchymal stem cells. *Photobiomodulation, Photomedicine, and Laser Surgery*. 2016; 34(11):533-42. [DOI:10.1089/pho.2015.4029] [PMID]
- [2] Hosseinpour S, Fekrazad R, Arany PR, Ye Q. Molecular impacts of photobiomodulation on bone regeneration: a systematic review. *Progress in Biophysics and Molecular Biology*. 2019; 149:147-59. [DOI:10.1016/j.pbiomolbio.2019.04.005] [PMID]
- [3] Gholami L, Asefi S, Hooshyarfard A, Sculean A, Romanos GE, Fekrazad R. Photobiomodulation in periodontology and implant dentistry: Part 1. Photobiomodulation, Photomedicine, and Laser Surgery. 2019; 37(12):739-65. [DOI:10.1089/photob.2019.4710] [PMID]
- [4] Vahdatinia F, Gholami L, Karkehabadi H, Fekrazad R. Photobiomodulation in endodontic, restorative, and prosthetic dentistry: a review of the literature. *Photobiomodulation, Photomedicine, and Laser Surgery*. 2019; 37(12):869-86. [DOI:10.1089/photob.2019.4707] [PMID]
- [5] Khorsandi K, Hosseinzadeh R, Abrahamse H, Fekrazad R. Biological responses of stem cells to photobiomodulation therapy. *Current Stem Cell Research & Therapy*. 2020; 15(5):400-13. [DOI:10.2174/1574888X15666200204123722] [PMID]
- [6] Gholami L, Shahabi S, Jazaeri M, Hadilou M, Fekrazad R. Clinical applications of antimicrobial photodynamic therapy in dentistry. *Frontiers in Microbiology*. 2023; 13:1020995. [DOI:10.3389/fmicb.2022.1020995] [PMID] [PMCID]
- [7] Monzavi A, Chinipardaz Z, Mousavi M, et al. Antimicrobial photodynamic therapy using diode laser-activated indocyanine green as an adjunct in the treatment of chronic periodontitis: a randomized clinical trial. *Frontiers in Microbiology*. 2016; 14:93-7. [DOI:10.1016/j.pdpdt.2016.02.007] [PMID] [PMCID]
- [8] Fekrazad R, Khoei F, Hakimiha N, Bahador A. Photoelimination of *Streptococcus mutans* with two methods of photodynamic and photothermal therapy. *Photodiagnosis and Photodynamic Therapy*. 2013; 10(4):626-31. [DOI:10.1016/j.pdpdt.2013.07.002] [PMID]