

SACHIN KAROL

Scientific Editor and Technical Writer

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PROFESSIONAL SUMMARY

Professional experience combines 13+ years of scientific editing with training and research in bioengineering. That work has included evaluating the accuracy, logic, clarity, evidentiary support, internal consistency, and terminology of more than 2,400 research manuscripts across materials science, nanotechnology, engineering, and the biomedical sciences. Academic credentials include an MS in Bioengineering, five peer-reviewed journal articles, and four conference abstracts as author or co-author. This combination of subject-matter expertise, editorial judgment, and experience providing clear written feedback supports substantive editing of research manuscripts across the physical and life sciences.

CORE SKILLS

Editing: substantive editing, copyediting, technical review, manuscript restructuring, author queries, and compliance with journal style guides and author guidelines

Subjects: materials science, nanotechnology, nanomaterials, engineering, physics, chemistry, biomedical engineering, and the physical and life sciences

Documentation: end-user guides, API references, task-based procedures, and technical field references

Tools: Microsoft Word (Track Changes), Adobe Acrobat, EndNote, Zotero, and Markdown

PROFESSIONAL EXPERIENCE

Self-employed | Freelance Scientific Editor & Technical Writer

Toronto, Ontario | 2025-Present

- Edit research manuscripts and other technical documents for individual authors, focusing on scientific logic and coherence, organisation, terminology, clarity, and compliance with journal-specific style and submission requirements.
- Created and published four before-and-after scientific editing samples on sachinkarol.com. Each sample presents tracked changes and explains the editorial decisions behind them. Topics include neural-network prediction of brachytherapy outcomes in cervical cancer, machine-learning prediction of cracking in recycled-aggregate concrete, a bioceramic used in hip implants, and carbon nanotubes that support nerve-cell growth.
- Produced a step-by-step user guide for a Salesforce setup, showing non-technical staff how to create accounts, contacts, cases, and Chatter posts. The guide includes screenshots and task-based instructions.
- Produced a field reference on metallic corrosion for project engineers. It covers six forms of corrosion, how to identify them, where they commonly occur, and the appropriate response to each. It also includes a comparison table for quick reference.

Cactus Communications | Freelance Academic Editor, Physical Sciences and Engineering

Canada/India | 2011-2024

- Edited more than 2,400 research manuscripts, totalling over 6 million words, for submission to journals including Nature, Science, Nano Letters, and Advanced Materials.
- Specialised in materials science, particularly nanotechnology and nanomaterials, while also editing manuscripts across engineering, physics, chemistry, and related physical and life sciences.
- Evaluated scientific arguments for clarity, coherence, and evidentiary support. Reorganised manuscripts where the reasoning was difficult to follow and queried authors when claims extended beyond the available data.
- Checked consistency among methods, results, tables, figures, and conclusions. Corrected field-specific terminology and edited figure captions, reference lists, and other manuscript elements.
- Applied journal-specific style and submission requirements while preserving authors' intended meaning. Many of these authors wrote in English as an additional language.
- Received repeat assignments from authors who requested me by name.

- Consistently ranked among the top editors in the company's Physical Sciences and Engineering vertical, based on internal quality assessments. Met all assigned deadlines across a 13-year freelance engagement.

University of Illinois at Chicago | Research Specialist, Department of Restorative Dentistry

Chicago, Illinois | 2007-2011

- Promoted from Research Assistant to Research Specialist.
- Characterised the mechanical properties of dental composites, dentin-resin bonded interfaces, and nanostructured carbide-derived carbon using nanoindentation.
- Investigated the degradation of dental composites by oral bacterial biofilms and the short- and long-term effects of collagen cross-linkers on bonded interfaces.
- Co-authored the resulting publications with collaborators across restorative dentistry, bioengineering, and materials science.

EDUCATION

Ryerson University (now Toronto Metropolitan University) | Toronto, Ontario, Canada

- Certificate in Data Analytics, Big Data, and Predictive Analytics (2018)

University of Illinois at Chicago | Chicago, Illinois, USA

- Master of Science in Bioengineering (2011)

Bangalore University | Bangalore, Karnataka, India

- Bachelor of Engineering in Instrumentation and Electronics (1999)

ABSTRACTS AND PUBLICATIONS

- Bedran-Russo, A.K., Karol, S., Pashley, D.H., & Viana, G. (2013). Site-specific properties of carious dentin matrices biomodified with collagen cross-linkers. *American Journal of Dentistry*, 26(5), 244-248.
- Ravindran, S., Gao, Q., Kotecha, M., Magin, R. L., Karol, S., Bedran-Russo, A., et al. (2012). Biomimetic extracellular matrix-incorporated scaffold induces osteogenic gene expression in human marrow stromal cells. *Tissue Engineering Part A*, 18(3-4), 295-309.
- Castellan, C.S., Bedran-Russo, A.K., Karol, S., & Pereira, P.N. (2011). Long-term stability of dentin matrix following treatment with various natural collagen cross-linkers. *Journal of the Mechanical Behavior of Biomedical Materials*, 4(7), 1343-1350.
- dos Santos, P.H., Karol, S., & Bedran-Russo, A.K. (2011). Long-term nanomechanical properties of biomodified dentin-resin interface components. *Journal of Biomechanics*, 44(9), 1691-1694.
- dos Santos, P.H., Karol, S., & Bedran-Russo, A.K. (2011). Nanomechanical properties of biochemically modified dentin bonded interfaces. *Journal of Oral Rehabilitation*, 38(7), 541-546.
- Karol, S., Bedran-Russo, A.K. Nanomechanical characterization of cross-linked demineralized carious dentin. IADR/AADR/CADR 89th General Session and Exhibition, San Diego, California, 2011.
- Karol, S., Bedran-Russo, A.K. Nanomechanical properties of demineralized dentin treated with collagen-cross linkers. Academy of Dental Materials Meeting, Portland, Oregon, 2009.
- Karol, S., dos Santos, P.H., Bedran-Russo, A.K. Nanomechanical properties of intertubular dentin treated with collagen cross-linkers. American Association for Dental Research Symposium: Nanotechnology in the Health Sciences, Ann Arbor, Michigan, 2008.
- dos Santos, P.H., Karol, S., Bedran-Russo, A.K. Nanomechanical properties of biochemically modified dentin bonded interfaces. American Association for Dental Research Symposium: Nanotechnology in the Health Sciences, Ann Arbor, Michigan, 2008.

Google Scholar: scholar.google.com/citations?user=szmWle4AAAAJ