

Dr. PRADEEP KUMAR

Associate Professor: Pharmaceutics

Research Affiliation: Wits Advanced Drug Delivery Platform (WADDP)

Department of Pharmacy and Pharmacology

University of the Witwatersrand, Johannesburg, South Africa

Member: Global Young Academy (GYA); SAYAS

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W: <https://www.wits.ac.za/staff/academic-a-z-listing/k/pradeepkumarwitsacza/>

WADDP: <https://www.wits.ac.za/waddp/our-team/>

BIOSKETCH: Dr. Pradeep Kumar (BPharm, MPharm, PhD) is currently an Associate Professor of Pharmaceutics at Wits' Department of Pharmacy and Pharmacology. Dr. Kumar has an experience of over 10 years in academic teaching and research with pharmaceutics as the core subject along with biomaterial design, tissue engineering, and nanomedicine. His PhD thesis was focused on the design and development of Polymer-Engineered Neural Devices for potential application in reducing neurological deficits after spinal cord injuries and was awarded the Wits Faculty of Health Sciences' Most Prestigious PhD Degree Award. In addition, he is interested in the in silico mathematical analysis and programming for performance interpretation of drug eluting assemblies and polymer architectures. He holds a Y1 rating from the NRF. In 2021, Dr. Kumar has been included in the OECD Global Science Forum's Scoping Group on the Research Precariat Project, has joined the Steering Committee of the ASSAf Scientific Advisory Group on Emergencies (SAGE), is appointed as the Research Portfolio Leader in the Gauteng DoH Spinal Cord Injury Work Group, and is co-leading the Scientific Excellence Working Group in the GYA. As an Expert Group Member, he has proudly contributed to the IAP Statement on Regenerative Medicine published in 2021.

Dr. Kumar is a recipient of several prestigious awards including the 2021 Vice-Chancellor's Innovation Award, Wits Health Consortium's Great Leap Forward Entrepreneurial Academic Award (2021), ALBA-FKNE-YIBRO diversity grant (2020), Global Young Academy Membership (2020), INGSA-Africa Science Advice diploma (2020), Wits' Friedel Sellschop Research Award (2019), South African Young Academy of Science Membership (2018), ASRT (Egypt) Young African Researcher Award 2018 (Category: Health and Pharmaceutical Sciences), Mail & Guardian's Top 200 Young South Africans 2018 (Category: Science and Technology), Golden Key International Honours Society Membership (2018), Claude Leon Foundation Merit Award (2018), African-German Network of Excellence in Science (AGNES) Junior Researcher Grant (2018) funded by the Alexander von Humboldt Foundation and the German Ministry of Education and Research, Society of Pharmaceutical Education and Research's Young Scientist Award at PST 2018, Wits Innovators Forum's First-time (2013), Prolific (2014) and International (2016) Inventor Awards, International Society of Developmental Neuroscience Scholarship (2012), and Elsevier's NanoToday PhD Award (2011). Three of his publications have won the best pharmaceutics paper award at PSSA conference (2013, 2014, and 2015) and eight of his presentations have won best oral/poster presentation including three young researcher awards. He was a recipient of the prestigious Prime Minister's Scholarship (Ministry of Defence, Govt. of India) and an AICTE (India) fellowship during his MPharm.

Dr. Kumar's research findings have been published as over 265 publications (H-index: 38), 4 editorials, 3 edited books, and 40 book chapters in the area of biomaterials, pharmaceutics, and molecular modelling. To date he has supervised/co-supervised 14 PhD students to graduation/completion and currently busy with 12 doctoral projects. Dr. Kumar is an inventor on 23 granted patents from 06 patent families. His research has been funded by NRF, SAMRC, Technology Innovation Agency, Claude Leon Foundation, Wits' FRC and URC. Dr. Kumar is on expert reviewer panel of various national and international funding agencies such as National Research Foundation (Singapore), Claude Leon Foundation, EDCTP, Agence Nationale de la Recherche (France), Euregio Science Fund, and the NRF (South Africa). He is on the reviewer panel of over 100 scientific journals with over 700 reviews completed. For his reviewer contributions, Dr. Kumar was placed among Top Reviewers in 4 categories (Publons Global Peer Review Awards 2018 and 2019), is recognized as an Excellent Reviewer on Publons. He is an Assoc Editor of the journal 3 BioTech and for the Special Section: Clinical Diabetes in Frontiers journals. Dr. Kumar, a registered pharmacist in India and South Africa, is a member of several prestigious societies such as CRS, ISN, FENS, ESN, SAYAS, RSSAf, SASCA, TERMIS, ISID, Eur Peptide Soc, Int Chem Biol Soc and the Soc for the Advancement of Sci in Africa.

EDUCATION

Degree	Year	Institution	Title of Research
Doctor of Philosophy (<i>Most Prestigious PhD Degree Award 2017/18</i>)	2017	University of the Witwatersrand, South Africa	Design and development of a bioactive-loaded Polymer-Engineered Neural Device for potential application in reducing neurological deficits after spinal cord injuries and neuro-regeneration
Master of Pharmacy	2008	GJUS&T, Hisar, India	Formulation and optimization of cinnarizine loaded microspheres using central composite design
Bachelor of Pharmacy	2006	Maharshi Dayanand University, Rohtak, India	-

ACADEMIC AND PROFESSIONAL EXPERIENCE

Position held	Year	Institution
Associate Professor	Apr 2019 - current	University of the Witwatersrand, Johannesburg, Department of Pharmacy and Pharmacology (Pharmaceutics)
Assistant Director Researcher	October 2020 - current	Wits Advanced Drug Delivery Platform (WADDP)
Portfolio Leader: Research and Data; <i>Member: Training portfolio; Professional Member</i>	Jan 2021 - current	Spinal Cord Injury (SCI) Work Group Gauteng Province, Department of Health National Department of Health (Republic of South Africa), Pretoria, South Africa
GYA Member (5-Yr appointment)	Jun 2020 - current	Global Young Academy Halle (Saale), Germany
Deputy Chair: Teaching and Learning Committee	Jun 2019 – current	School of Therapeutic Sciences' Teaching and Learning Committee, University of the Witwatersrand, Johannesburg, Department of Pharmacy and Pharmacology (Pharmaceutics)

NRF RATING

Rating	Period	Definition*
Y1	2020-2025	A young researcher (within 5 years from PhD) who is recognised by all reviewers as having the potential (demonstrated by research products) to establish him/herself as a researcher with some of them indicating that he/she has the potential to become a future leader in his/her field.

**Definition as per the NRF Rating Guidelines, 2014*

RECENT AWARDS AND ACCOLADES

1. The **Vice-Chancellor's Innovation Award 2021** for WaferMat™: Wafer Matrix Technology for Ultra-Fast Drug Release (Lead inventor): October 2021.
2. Panellist at the **Kajita-Novoselov-Amano Nobel Laureates Special Session** at the **Tsukuba Conference 2021**: Inclusive Innovation for New Normal: Sep 2021.

3. The Wits Health Consortium's **Great Leap Forward (GLF) Entrepreneurial Academic Award** (02 awards annually) and a Seed Funding for an entrepreneurial, clinically-inspired, academic-led, social-impact project: July 2021.
4. **Appointed** on the Steering Committee of the **Scientific Advisory Group on Emergencies (SAGE)** under the auspices of the Science Granting Councils Initiative in Sub-Saharan Africa (**SGCI**), the National Research Foundation (**NRF**) of South Africa, the Canadian International Development Research Centre (**IDRC**), the Swedish International Development Co-operation Agency (**SIDA**), the United Kingdom (UK) Department for International Development (**DFID**), UK Research and Innovation (**UKRI**) through the Newton Fund, South Africa's Department of Science and Innovation (**DSI**), and Fonds de Recherche du Québec (**FRQ**): June 2021-onwards.
5. **Appointed** on the OECD Global Science Forum (GSF) Scoping Group on "**Training and initiatives to promote alternative and more flexible career paths for scientists**". This is a follow-up to a recently published GSF report on Prearity in research careers. The aim of the Scoping Group is to develop the terms of reference for the project: June 2021-onwards.
6. Represented the Republic as part of a two-member academic delegation at the 44th meeting of the Organisation for Economic Co-operation and Development (OECD) **Global Science Forum** organised by the **OECD's** Committee for Scientific and Technological Policy, Directorate for Science, Technology and Innovation (Theme: Enhancing access to research data during crises). On behalf of the Department of Science and Technology (DST), prepared and presented South Africa's response the Effect of the Covid-19 Pandemic on the Research Workforce and the Research Workforce of the Future: 21-22 April, 2021.
7. **Appointed** as **Research Portfolio Leader** (two-year appointment) on the **Spinal Cord Injury Working Group**, Gauteng Province, Department of Health under the aegis of **National Department of Health** (Republic of South Africa), Pretoria, South Africa: April 2021.
8. Listed in the **Stanford University's** "Ranking of the World Scientists: **World's Top 2% Scientists**" based on standardized information on citations, h-index, co-authorship-adjusted hm-index, citations to papers in different authorship positions, and a composite indicator: October 2020.
9. **Certificate of Recognition** awarded by INGSA for my role as *Global Rapporteur* for the International Network of Government Science Advice Covid-19 Evidence to Policy Tracker '**Citizen-Social-Science**' Project under the aegis of International Science Council (ISC): September 2020.
10. Nominated by the **GYA** (Global Young Academy); invited, and **appointed** by the **IAP** (InterAcademy Partnership) to be part of the **Statement Working Group** (SWG; 20 members globally) on the **IAP Statement on Regenerative Medicine**: August 2020.
11. **ALBA-FKNE-YIBRO grant**: Granted by the ALBA Network, the FENS-Kavli Network of Excellence (FKNE) and the Young IBRO Committee (YIBRO) in partnership with the Federation of European Neuroscience Societies (FENS), International Brain Research Organization (IBRO), the Federación Latinoamericana de Neurociencias y el Caribe (FALAN), the Federation of Asian-Oceanian Neuroscience Societies (FAONS), and the Society of Neuroscientists of Africa (SONA): July 2020.
12. Appointed as a **Judge** under the Chemical & Pharmaceutical Sciences category at **The Global Undergraduate Awards 2020**, Dublin: June-September, 2020.
13. **Accenture Rising Star Awards**: Featured among Top 10 in South Africa under the "*Service: Public & Private*" Category: May-June 2020.
14. Inducted as a member of the **Global Young Academy (GYA)** based on an outstanding track record as a successful scientist and the commitment to applying science for the benefit of society: 2020
15. Winner of the "International Network of Government Science Advice (INGSA)-Africa Science Advice Articles Competition (State of science advice to governments in African countries)" for an article titled "Impact of evidence-based science advice to government: Evidence from the health section in South Africa": 2020
16. Accepted as a **Fellow** of the **Great Leap Forward (GLF) Entrepreneurial Academic Fellowship Programme** offered by the Wits Health Consortium (Pty) Ltd.: 2020
17. Awarded a National Research Foundation (NRF) **Y1 rating**: 2020-2025.

RESEARCH GRANTS/INCENTIVES: *Currently active grants*

1. Wits-TIA Seed Fund Grant for the development and commercialization of a "Nerve Conduit", (Principal Investigator), 500,000.00, 2021.

2. National Intellectual Property Management Office (NIPMO), Department of Science and Innovation funding for the project “Polymer engineered spinomimetic scaffold for acute spinal cord injuries”: R 353,000.00, 2021.
3. Wits Research Incentive (RINC) Funding (FY2019), R 56,600.00, 2021.
4. Wits Biomedical Innovation Research Fund (WBRF) Grant for the project “Polymer engineered spinomimetic scaffold for acute spinal cord injuries” awarded by Wits Faculty of Health Sciences, Wits Commercial Enterprise (Pty) Ltd (“Wits Enterprise”) through the Innovation Support Office (“IS”) of the University of the Witwatersrand, Johannesburg: R 430,000.00, 2020-21.
5. South African Medical Research Council (SAMRC) Self-Initiated Research (SIR) Grant for a project titled “3D-printed, neuromimetic scaffolds for traumatic brain injury intervention and potential neuroregeneration” (Principal Investigator): R446,100.00 (R148,700.00/annum) (2019/20 to 2021/22).
6. Wits’ University Research Committee (URC) Friedel Sellschop Research Grant for the project titled “3D-printed, neuromimetic scaffolds for neuroregeneration and traumatic neural injury intervention”, (Principal Investigator), R435,000.00 (R145,000.00/annum), 2019-2021.
7. NRF Competitive Support for Unrated Researchers (CSUR) grant for the project titled “Extracellular matrix-mimicking, three-dimensional scaffolds for neuronal repair and regeneration”, (Principal Investigator), R1,017,300.00, 2019-2021.
8. BRICS Multilateral Joint Science and Technology Research Collaboration 2018 (BRICS STI) Grant for a project titled “Development of dual inhibitors targeting Wnt signalling as colorectal cancer therapeutics” (NRF, South Africa; DST, India; RFBR, Russia), (South African Principal Investigator), 2019/20-2021/22: R 942,000.00.

POSTGRADUATE SUPERVISION/CO-SUPERVISION

PhD students graduated till date: 14

Current PhD students: 12

EXPERT REVIEWER FOR FUNDING AGENCIES

1. DBT/Wellcome Trust India Alliance (India Alliance)
2. Campus for Research Excellence And Technological Enterprise (CREATE) - National Research Foundation (NRF): Singapore
3. Claude Leon Foundation (CLF), South Africa
4. European & Developing Countries Clinical Trials Partnership (EDCTP)
5. Agence Nationale de la Recherche (a French institution tasked with funding scientific research)
6. Euregio Science Fund - Interregional Project Networks (EGTC-IPN)
7. National Research Foundation (NRF) of South Africa.

MANUSCRIPT REVIEWING

Publons profile: <https://publons.com/author/1309922/pradeep-kumar#profile>

- No. of manuscripts reviewed: 679
- No. of journals reviewed for: 97
- No. of manuscript Edited to completion (3BioTech): >100

PATENTS GRANTED (22)

Patent Family	Inventors	Jurisdiction (date granted, reverse chronological order)
Rapidly dissolving pharmaceutical composition (Applicant: Wits University)	Pradeep Kumar, V. Pillay, Y.E. Choonara	India IP317965 (Aug 2019) Europe EP2895147B1 (Jun 2019) China CN104797239B (Sep 2018) USA US9284341B2 (Mar 2016) RSA ZA201502355B (Jan 2016)
Resorbable wound dressing (Applicant: Wits University)	V. Pillay, Y.E. Choonara, Pradeep Kumar, L.C. du Toit, N. Mayet	China CN107106720B (Jun 2020) Japan JP6506311B2 (Apr 2019) Europe EP3151872B1 (Dec 2018) USA US10080816B2 (Oct 2018)

Biodegradable implant (Peripheral nerve injury) (Applicant: Wits University)	V. Pillay, Y.E. Choonara, Pradeep Kumar, L.C. du Toit, P. Ramburrun	China CN108463256B (April 2021) Europe EP3344301B1 (Sep 2020) RSA ZA201801497B (Sep 2020) USA US10478527B2 (Nov 2019)
Dosage form for the delivery of a peptide and/or protein (Applicant: Wits University)	V. Pillay, L.C. du Toit, Y.E. Choonara, B.F. Choonara, Pradeep Kumar, P.P.D. Kondiah	USA US10973766B2 (April 2021) Europe EP3313379B1 (Feb 2020) RSA ZA201800470B (Dec 2020)
Pharmaceutical dosage form (Applicant: Wits University)	V. Pillay, Y.E. Choonara, Pradeep Kumar, F. Mashingaidze	USA US9439863B2 (Sep 2016) Africa (ARIPO) AP3803A (Aug 2016) China CN104203219B (Mar 2016) RSA ZA201405797B (Aug 2015)
Pharmaceutical composition (Applicant: Wits University)	N. Chirwa, V. Pillay, Y.E. Choonara, Pradeep Kumar, L.C. du Toit	USA US9220773B2 (Dec 2015) RSA ZA201304633B (Mar 2014)

PEER-REVIEWED OUTPUTS

Google scholar: <https://scholar.google.co.za/citations?user=uoBV7t0AAAAJ&hl=en>

Scopus: <https://www.scopus.com/authid/detail.uri?authorId=7403960277>

ORCID: <https://orcid.org/0000-0002-8640-4350>

Publons: <https://publons.com/researcher/1309922/pradeep-kumar/>