



Dr. Ankireddy Seshadri Reddy

Chief Technical Officer

CONTACT

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PERSONAL INFORMATION

Date of Birth : 06th April 1983
Place of Birth : India
Nationality : Indian
Marital Status : Married

PERSONAL STRENGTHS

- Ability to learn new things
- Sincere and hardworking
- Creative thinking
- Discipline and trustworthiness
- Dedication and determination in research
- Possess good analytical and problem solving skills

REFERENCES

Prof. Kim Jongsung
Dept. of Chemical & Biological Engineering
Gachon University, South Korea
Email: jongkim@gachon.ac.kr

Prof. Sangwha Lee
Dept. of Chemical & Biological Engineering
Gachon University, South Korea
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PROFILE & RESEARCH SUMMARY

I am Dr. Seshadri Reddy Ankireddy currently working as a Chief Technical Officer for the research wing, and research director in the Dept. of Chemical & Biological Sciences, at **Armor Shield Healthcare Innovations Ptv. Ltd. Vanur, Tamil Nadu**. In 2017, I have completed my Ph.D. and doctoral thesis work on "**Synthesis and Characterization of Fluorescent Quantum dots (QDs) and their Potential Applications in Detection of Biomolecules, Metal Ions, and Neurotransmitters**" under the supervision of **Prof. Kim Jongsung, Dept. of Chemical & Biological Engineering, Gachon University, Seoul, South Korea**. Since after inception of my research career, I have been involved in various research fields like sensor technology, organic catalysis, anti-cancer, novel therapeutic targeted drug delivery, water purification technology, energy, and environmental applications using different kinds of environmentally benign organic molecules and nanomaterials mediated approaches.

WORK HISTORY

June 2024-Jan 2025 **Chief Technical Officer (CTO) at Armor Shield Healthcare Innovations Ptv. Ltd. Vanur, Tamil Nadu.**

During this tenure, I have been involved in the synthesis of divergent Biofunctionalized TiO₂ Nanoparticles for the fabrication of medical textiles and the prevention of fungus cultures on leather samples.

Feb 2021-May 2024 **Scientist-D & Research Coordinator in Dr. Buddolla's Educational Society Dept. of Chemical & Biological Sciences, Tirupati**

Herein worked as a research coordinator & Scientist-D in Dept. of Chemical & Biological Sciences. The main research areas are including nanomaterials, probiotics, and natural products chemistry with biological, and catalytic applications.

Feb 2020-Feb 2021 **Assistant Professor in Eternal University Dept. of Chemistry, Himachal Pradesh**

Understanding of analytical techniques and reaction mechanisms for an excellent scientific insight with critical analyzes the concepts more details in nanoparticle and MOFs mediated drug delivery, catalytic and energy applications.

Apr 2017-2020 **Postdoctoral Scientist in Gachon University**

Dept. of Chemical & Biological Engineering, South Korea
During this tenure I've been involved in synthesis and characterization of different nanomaterials like CDs, g-C₃N₄, CdS, Fe₃O₄, core/shell liposome nanoparticles and MOF type nanoparticles for sensing, energy, bio-imaging, and drug delivery applications.

EDUCATION

Sep 2013-Feb 2017 **Ph.D. from Dept. of Chemical & Biological Engineering Gachon University, Seoul South Korea.**

Thesis Title : Synthesis and Characterization of Fluorescent Quantum Dots and their potential applications in Detection of Biomolecules, Metal ions, and Neurotransmitters

Supervisor : Prof. Jongsung Kim

Aug 2007-Oct 2009 **M.Sc. from Dept. of Medicinal Chemistry**

Sri Ramachandra University, Porur, Chennai, India

Thesis Title: Isolation and Synthesis of α -Mangostin and their cyclized Products for Evaluation of Anti-oxidant properties

Supervisor : Prof. G. N. Krishna Kumari

RESEARCH INTERESTS

- Synthesis and characterization of nanomaterials, organic and inorganic complexes, and MOFs
- Sensing, bioimaging, and drug delivery applications using nanomaterials
- Nanomaterials and organic & Inorganic complexes mediated Energy and catalytic applications
- Investigation of molecular mechanisms in antimicrobial, anticancer, anti-oxidation, antidiabetic agents using animal models.

TECHNICAL SKILLS

- Synthesis and characterization of nanoparticles, MOFs, organic, inorganic complexes and nanoclusters
- Morphological examinations of nanoparticles, micro and macro polymer materials using AFM, SEM, TEM and EDX
- Surface functionalization (silanization, cross linking, and plasma treatment) of NPs, QDs, micro-bead, optical fiber, glass, etc.
- Sensing of biomolecules, metal ions, enzymes, proteins etc., using UV-vis, PL spectrometers
- Natural organic molecules from plants and isomers of organic molecule separation by using Column chromatography, thin layer chromatography (TLC), High performance liquid chromatography (HPLC), gas chromatography (GC), NMR.
- Polymer bound metal complexes, and organic and inorganic complexes analysis using TGA-DTG, CHN analyzer.
- In vitro experience, drug delivery, bio-imaging.
- Molecular biology techniques, animal models handling for the investigation of antidiabetic, anticancer agents.

PUBLICATIONS

1. Chappidi S, **Ankireddy SR**, Sree CG, Rayalcheruvu U, Buddolla V. Enhancing diabetic rat wound healing through chitosan-mediated nano-scaffolds loaded with quercetin-silver complex. *Materials Letters*. 2024 Feb 16:136167.
2. Kusuma Kandati, **Ankireddy Seshadri Reddy**, John Sushma Nannepaga, Buddolla Viswanath, The Influence of Probiotics in Reducing Cisplatin-Induced Toxicity in Zebrafish (*Danio rerio*), *Current Microbiology*, 80, (4)109, 2023.
3. Sindhuspoorthy Chappidi, Viswanath Buddolla, Seshadri Reddy Ankireddy, Buddolla Anantha Lakshmi*, Young-Joon Kim**, Recent trends in diabetic wound healing with nanofibrous scaffolds, *European Journal of Pharmacology*, Just Accepted (2023).
4. Balathoti Sunitha Devi, Bugude Laxmi, Ch. Linga Raju, Gorrepati Rosaiah*, Ankireddy Seshadri Reddy*, Colorimetric detection of silver ions in different pH conditions using *Pongamia pinnata* leaf extract derived carbon dots, *Materials Letters*, 336 (2023) 133872.
5. Naveen Thanjavur, Roopkumar Sangubotla, Buddolla Anantha Lakshmi, Ramesh Rayi, Charitha Devi Mekala*, Ankireddy Seshadri Reddy**, Buddolla Viswanath*, Evaluating the antimicrobial and apoptogenic properties of bacteriocin (nisin) produced by *Lactococcus lactis*, *Process Biochemistry* 122 (2022) 76–86.
6. Gayathri Chellasamy, Seshadri Reddy Ankireddy, Kook-Nyung Lee, Saravanan Govindaraju, Kyusik Yun, Smartphone-integrated colorimetric sensor array-based reader system and fluorometric detection of dopamine in male and female geriatric plasma by bluish-green fluorescent carbon quantum dots, *Materials Today Bio*, 12 (2021) 100168.
7. Sharma N, Reddy AS, Yun K. Electrochemical detection of hydrocortisone using green-synthesized cobalt oxide nanoparticles with nafion-modified glassy carbon electrode. *Chemosphere* 282, 131029, 2021.
8. Lakshmi BA[§], Reddy AS[§], Sangubotla R, Hong JW, Kim S. Ruthenium (II)-curcumin liposome nanoparticles: Synthesis, characterization, and their effects against cervical cancer. *Colloids and Surfaces B: Biointerfaces* 204, 111773, 2021. (§ these authors were contributed equally to this work)
9. Thuy Nguyen Thi Daoa[#], Ankireddy Seshadri Reddy[#], Zhao Fei[#], Huifang Liu, Bonhan Koo, Jongsung Kim*, Yong Shin*, Green synthesis based magnetic diatom for biological application, *ACS Sustainable Chem. Eng.* 2021, 9, 9, 3439–3451. (# these authors were contributed equally to this work)
10. Ankireddy Seshadri Reddy, Van Gia Vo, Seong Soo A An, Jongsung Kim, *ACS Applied Bio Materials*, 2020, 3, 8, 4873–4882.
11. Sada Venkateswarly[†], Ankireddy Seshadri Reddy[†], Atanu Panda, Debraj Sarkar, Younghu Son, and Minyoung Yoon, *ACS Applied Nanomaterials & Interfaces*, 2020, 3, 4, 3684–3692. †Both authors were contributed equally to this work.
12. **Ankireddy Seshadri Reddy**, and Jongsung Kim* *Appl. Surf. Sci.* 2020, 513, 145836.
13. Govindaraju S[§], Ankireddy Seshadri Reddy[§], Kim J, Yun K. *Appl. Surf. Sci.* 2019, 31, 143837. (§ Both authors were contributed equally)
14. **Ankireddy Seshadri Reddy**, Buddolla Anantha Lakshmi, Sanghyo Kim, Jongsung Kima* *Eur. J. Pharm. Biopharm.* 2019, 142, 518-530.
15. Manthrapudi Venu, Sada Venkateswarlu, Yenugu Veera Manohara Reddy, **Ankireddy Seshadri Reddy**, Vinod Kumar Gupta, Minyoung Yoon, and Gajulapalli Madhavi, *ACS Omega*, 2018, 3 (11), pp 14597–14605.

16. **Ankireddy Seshadri Reddy**, Jongsung Kim*, Status and recent developments in analytical methods for the detection of foodborne microorganism, *Recent Developments in Applied Microbiology and Biochemistry (Elsevier)*. <https://doi.org/10.1016/B978-0-12-816328-3.00023-4>
17. Atanu Panda, **Ankireddy Seshadri Reddy**, Sada Venkateswarlu and Minyoung Yoon*, *Nanoscale*, 10, 16268-16277, 2018.
18. Atanu Panda, Sada Venkateswarlu, **Ankireddy Seshadri Reddy**, Minyoung Yoon*, *Dyes Pigm.* 156, 199-205, 2018.
19. Sada Venkateswarlu, Buddolla Viswanath, **Ankireddy Seshadri Reddy** *, Minyoung Yoon*, *Sens. Actuator B-Chem.* 258, 172-183, 2018.
20. **Ankireddy Seshadri Reddy**, Jongsung Kim*, *Sens. Actuator B-Chem.* 255, 3425-3433, 2018.
21. Saravanan Govindaraju\$, **Ankireddy Seshadri Reddy** \$, Buddolla Viswanath, Jongsung Kim, Kyusik Yun*, *Sci. Rep.* 7, 40298, 2017. (DOI: 10.1038/srep40298). (§ Both authors were contributed equally).
22. **Ankireddy Seshadri Reddy** and Jongsung Kim*, *J. Nanosci. Nanotechnol.* 17, 2720-2723, 2017.
23. **Ankireddy Seshadri Reddy** and Jongsung Kim*, *J. Nanosci. Nanotechnol.* 16, 2897-2899, 2016.
24. **Ankireddy Seshadri Reddy** and Jongsung Kim*, *Int. J. Nanomedicine*, 10, 121-128, 2015.
25. **Ankireddy Seshadri Reddy** and Jongsung Kim*, *Int. J. Nanomedicine*, 10, 113-119, 2015.
26. **Ankireddy Seshadri Reddy** and Jongsung Kim*, *J. Nanosci. Nanotechnol.* 15, 7918–7921, 2015
27. **Ankireddy Seshadri Reddy** and Jongsung Kim*, *Sci. Adv. Mater.* 9, 179-183, 2017.
28. **Ankireddy Seshadri Reddy** and Jongsung Kim*, *Sci. Adv. Mater.* 6, 1-4, 2014.
29. Ankita Misra, Smriti Srivastava, **Ankireddy Seshadri Reddy**, Nashreen S. Islam, Tulika Chandra, Ashutosh Kumar, Manoj Kumar Barthwal, Madhu Dikshit, *Redox Rep.* 18, 174-185, 2013.
30. Jeena Jyoti Boruah, Siva Prasad Das, **Ankireddy Seshadri Reddy**, Sandhya Rani Gogoi and Nashreen S. Islam*, *Green Chem.* 15, 2944-2959, 2013.
31. Siva Prasad Das, **Ankireddy Seshadri Reddy**, Jeena Jyoti Boruah and Nashreen S. Islam*, *RSC Adv.* 2, 7248-7261, 2012.

POTENTIAL REVIEWER FOR FOLLOWING JOURNALS

- ▶ International Journal of Hydrogen Energy - Elsevier
- ▶ Materials Research Express -Springer
- ▶ EPE Environment Protection Engineering
- ▶ Fuel - Elsevier
- ▶ Zeitschrift für anorganische und allgemeine Chemie - Wiley
- ▶ Frontiers in Chemistry

LIST OF PATENTS

1. Method for the preparation of L-Cysteine capped InP/ZnS QDs using Microwave Irradiation Treatment, Inventors: Ankireddy Seshadri Reddy and Kim Jongsung*, **Korea patent** C09K 11/02 | B82Y 20/00 | B82Y 40/00 | C09K 11/08, Application No: 1020150098348.
2. Method for the preparation EDTA Mediated Carbon Dots for the Detection of Ca²⁺ Ions in Human Serum, Inventors: Ankireddy Seshadri Reddy and Kim Jongsung*, **Korea patent** C09K 11/00 | B01J 6/00 | G01N 21/63 | G01N 21/64 | G01N 33/58 | G01N 33/84, Application No: 1020170172860.
3. Synthesis and Characterization of Quantum Dot-Loaded Poly (lactic-co-glycolic) Acid Nanocomposite Fibers by an Electrospinning Process, Ankireddy Seshadri Reddy, Jongsung Kim, **Korean Patent**, A61L 27/18 | A61L 27/02 | A61L 27/38 | A61L 27/50 | D01D 5/00 | D04H 1/728, 1020160067549.
4. Methods for the synthesis and Characterization of Acetyl Curcumin loaded PLGA polymer Core/Shell Liposome nanoparticles for Bio-imaging, Drug delivery and Theranostic Applications, Inventors: Ankireddy Seshadri Reddy, Buddolla Ananthalakshmi, Sanghyo Kim, and Jonusung Kim*, **Korea Patent**, 10-2020-0025094.

LANGUAGE SKILLS

Ability to speak and write fluently

- English, Hindi, and Telugu

Ability to understand and speak

- Tamil, Assamese, Oriya, Bengali

List of Book Chapters

1. **Ankireddy Seshadri Reddy**, Jongsung Kim*, Status and recent developments in analytical methods for the detection of foodborne microorganism, Recent Developments in Applied Microbiology and Biochemistry (Elsevier). <https://doi.org/10.1016/B978-0-12-816328-3.00023-4>

2. **Ravi Kumar Katikala, Manpreet Singh, Ramesh Atmakuru, Vikrant Tyagi, and Ankireddy Seshadri Reddy***, Recent trends in bacterial enzymes responsible for organophosphorus compound degradation and toxicity assessments, Recent Developments in Applied Microbiology and Biochemistry (<https://doi.org/10.1016/B978-0-12-821406-0.00021-7>).

3. Manpreet Singh, Kamal Kishore, and **Seshadri Reddy Ankireddy***, Recent developments in the diagnosis of COVID-19 with Micro- and nanosystems, Pandemic Outbreaks in the Twenty-First Century, Just accepted in Academic Press, Elsevier.

LIST OF TEXT BOOKS EDITED

RECENT DEVELOPMENTS IN NANOMATERIAL-BASED SENSING OF HUMAN PATHOGENS- Ankireddy SR, Buddolla V, editors. Recent Developments in Nanomaterial-based Sensing of Human Pathogens. **Editors: Dr. Ankireddy Seshadri Reddy, & Dr. Buddolla Viswanath.** eBook ISBN: 9780443185755.

DECLARATION

I hereby declare that all the information stated above is true to my knowledge.

Date: January 06, 2025

Ankireddy Seshadri Reddy