Curriculum Vitae

Govindarajan T. Ramesh, Ph. D.

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PERSONAL DATA

Business Address: Professor

Department of Biology/Center for Materials Research

College of Science & Technology

Norfolk State University

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Marital Status: Married

Status: Citizen of USA

EDUCATION

Degree Year University Major

Ph. D 1992 University of Madras Biotechnology/Biochemistry

M. S 1987 MS University Biotechnology

B. S 1985 Bharathiar University Biochemistry

CURRENT POSITION & ADDRESS

2010- till date: Professor, Center foe Biotechnology/Center for Materials Research, Department of Biology, College of Science & Technology,

Synthesis, Characterization and Biocompatibility of Nanomaterials for Safe Biomedical Applications”

“Simulated Microgravity and Oxidative Stress”

“Proton Exposure and Brain”

PREVIOUS PROFESSIONAL EXPERIENCE

2018(March)-2020 (Aug): Professor, Molecular Toxicology Laboratory,

Department of Biology, College of Science & Technology,

Director (I), Center for Materials Research, Norfolk State University, Norfolk, VA, USA

“Synthesis, Characterization and Biocompatibility of Nanomaterials for Safe Biomedical Applications”

“Simulated Microgravity and Oxidative Stress”

“Proton Exposure and Brain”

2010(Sep)-2018(Feb): Professor, Molecular Toxicology Laboratory, Department of Biology, College of Science & Technology, Norfolk State University, Norfolk, VA, USA

“Synthesis, Characterization and Biocompatibility of Nanomaterials for Safe Biomedical Applications”

“Simulated Microgravity and Oxidative Stress”

“Proton Exposure and Brain”

2008-2012: Associate Professor, Molecular Toxicology Laboratory, Department of Biology, College of Science & Technology,

Associate Vice President, Office of Research & Economic Development, Norfolk State University, Norfolk, VA, USA

“Molecular Mechanisms of Nanotoxicity”

“Simulated Microgravity and Oxidative Stress”

“Proton Exposure and Brain”

2006-2007: Associate Professor, Molecular Neurotoxicology Laboratory, Department of Biology, College of Science & Technology, Texas Southern University, Houston, TX, USA

Director, Proteomics Core Facility, (RCMI-Core), College of

Pharmacy & Health Science, Texas Southern University, Houston, TX, USA

“Molecular Mechanisms of Metal Toxicity”

“Simu lated Microgravity and Oxidative Stress”

“Global Proteomics Profiling of Hippocampus under Microgravity Environment”

2000-2006: Assistant Professor, Molecular Neurotoxicology Laboratory, Department of Biology, College of Science & Technology, Texas Southern University, Houston, TX, USA

Director, Proteomics Core Facility, (RCMI-Core), College of Pharmacy & Health Science, Texas Southern University, Houston, TX, USA

“Molecular Mechanisms of Metal Toxicity”

“Simulated Microgravity and Oxidative Stress”

“Global Proteomics Profiling of Hippocampus under Microgravity Environment”

1996-2000: Assistant Professor (Research), College of Pharmacy & Health Sciences, Texas Southern University, Houston, TX, USA

“Neurobehavioral Toxicity of Lead”

1994-1996 Research Associate, Neuroscience Laboratory, Department of Psychiatry, The University of Louisville, Louisville, KY, USA

“Molecular Aspects of Myoinositol Monophosphatase”

1992-1994 Post-doctoral Research Associate, Department of Microbiology & Cell Biology, Indian Institute of Sciences, Bangalore, India

“Studies on Fibroin and Fibroin Related Gene Expression”

ADMINISTRATIVE EXPERIANCE

# Dr. Govindarajan Ramesh is a Professor of Biochemistry in the Department of Biology /Center for Materials Research at Norfolk State University. He completed his MS and Ph.D. degrees in Biochemistry/Biotechnology.

March 2018-August 2020: Director (I), Center for Materials Research,

Norfolk State University, Norfolk, VA, USA

2008-2012: Associate Vice President, Office of Research & Economic Development, Norfolk State University, Norfolk, VA, USA

2000-2006: Director, Proteomics Core Facility, College of Pharmacy & Health Science, Texas Southern University, Houston, TX, USA

RESEACH INTEREST

# Dr. Govindarajan Ramesh is a Professor of Biochemistry in the Department of Biology & Center for Materials Research at Norfolk State University. He completed his MS and Ph.D. degrees in Biochemistry/Biotechnology.

# Dr. Ramesh has extensive experience and a continuing interest in investigating the effects of space radiation and microgravity on the central nervous system. His laboratory also conducts research on synthesis, characterization and biocompatibility of nanomaterials and quantammaterials for safe biomedical applications.

# He has mentored more than thirty-five Master’s level graduate students, thirty four Doctoral graduate students and seven Post-doctoral fellows. At present, he is mentoring two Ph. D. students. He has more than 29 years of teaching experience in US University.

# Dr. Ramesh currently has two ongoing research grants funded by NSF. Since 1996, he has secured grant funding as PI, Co-PI and/or Senior Investigator totaling more than $75 million. He is actively serving in grant review panels at the National Science Foundation, Phillip Morris Research Foundation, Texas Emerging Technology Fund, Department of Defense, U.S. Army, Netherland Space Agency, US-Israel Binational Science Foundation and the European Space Agency. He serves on journal review panels for more than ten scientific journals and is a member of the editorial board of the J of Nanoscience & Nanotechnology, Neural Regeneration Research J, American Journal of Molecular and Cellular Biology and ISRN Toxicology. Dr. Ramesh has published more than 96 papers in peer reviewed scientific journals. He has presented his work in more than 100 national and international meetings. Part of his overall goal is also to train undergraduate, graduate and post-doctoral students in nanotechnology and space research.

# EDITORIAL BOARD

# Journal of Nanoscience & Nanotechnology

Neural Regeneration Research Journal

ISRN Toxicology

American Journal of Molecular and Cellular Biology

World Journal of Respirology

European Journal of Toxicological Sciences

Advances in Toxicology

# RESEARCH AWARDS

2013-20 Research Mentor- NSU

2012 Distinguished faculty award for Scholarship

2008-12 Research Mentor- NSU

2006 Faculty Presentation (Research Week- TSU)

2005 Research Mentor of the Year- TSU

2004 Research Mentor of the Year- TSU

2004 Researcher of the Year Award-TSU

1. NBTB-National Biotechnology Award

1991 UGC National Education Test Award SRF.

1989 UGC National Education Test Award JRF.

1989 GATE Graduate Aptitude Test for Engineers.

1. Lady Tata Trust Award.

1985 DBT Award.

## PROFESSIONAL SOCIETY SCIENTIFIC AFFILIATION

Society for Neuroscience, USA; Society of Toxicology, USA

Society for *in vitro* Biology, USA; Radiation Research Society, USA

American Society for Biochemistry and Molecular Biology. USA

Virginia Academy of Science, USA;

##### TEACHING EXPERIENCE

BIO 100-Biological Science; BIO 100L-Biological Science Lab; BI O 132-Biological Science

BIO 143-Survey of Life Sciences; BIO 160-General Zoology; BIO 469-Biochemistry;

BIO 469 L-Biochemistry Labs; BIO 253-Human Physiology;

BIO 497-Intro Research; BIO 502-Modern Biology; BIO 520-Special Problems Biology;

BIO 623-Neurobiology; BIO 364- Seminar/Colloquim;

BIO 725- Biochemical Ecology; BIO 775- Bioorganic Chemistry;

BIO 648- Experimental Biology; BIO 648 L-Experimental Biology Labs;

BIO 861-Research Problems; BIO 520-Special Problems; ES 912- Neurophysiology;

ES 902- Mechanism of Toxicity; PAS 435- Pathophysiology I,

MSE-697 – Research I; MSE 698 – Research II; MSE-699 – Research III;

MSE-897 – Doctoral Research I; MSE-898 – Doctoral Research II;

MSE-899 – Doctoral Research III; MSE-900- Doctoral Dissertation

**REVIEWER OF JOURNALS**

Molecular and Cellular Biochemistry J. of Biological Chemistry

Toxicology Letters Nano Letters

Carcinogenesis Toxicology and Applied Pharmacology

Biochemical Pharmacology Toxicological Sciences

J. Nanoscience and Nanotechnology J. Free Radical Research

In vitro Cell and Developmental Biology Toxicology Mechanisms & Methods

J. Medicinal Chemistry Brest Cancer Research and Treatment

**GRANT REVIEWER**

National Science Foundation Phillip Morris Research Foundation

Texas Emerging Technology Fund Department of Defense, US Army

Netherland Space Agency US-Israel Binational Science Foundation

European Space Agency North Carolina Biotechnology Center

Czech Science Foundation National Institutes of Health

The Austrian Science Fund

NASA

SELECTED PUBLICATIONS (Original Papers)

1. Ramesh, G. T., Parthasarathy, R. and Jayaraman, K. (1989). "Production of Membrane bound Inositol Phospholipids is Augmented during Sporulation in Bacillus Thuringensis var Israelensis". **Biomembranes in Health & Disease,** 1, 23-27.

2. Parthasarathy, L., Ramesh, G. T., Shyamaladevi, C. S. and Parthasarathy, R. (1989). "Specific Staining of Myo-inositol-1phosphatase on Polyacrylamide Gels after Electrophoresis". **J. Biosciences**, 14, 249-253.

**3.** Parthasarathy, R., Parthasarathy, L., Ramesh, G. T., Shyamaladevi, C. S. and Vadnal, R. E. (1992). "The Effects of Lithium Isotopes on the Myo-inositol 1-Phosphatase Reaction in Rat Brain, Liver, and Testes". **Life Sciences**, 50, 1445-1450.

4. Vadnal, R. E., Parthasarathy, R., Parthasarathy, L., Ramesh, G. T. and Shyamaladevi, C. S. (1992). "The Identification of a Membrane-bound Myo-inositol 1-Phosphatase in Rat Brain, Liver, and Testes". **Biochem. Int.**, 26, 935-941.

5. Manjula, T. S., Geetha, A., Ramesh, G. T. and Shyamaladevi, C. S. (1992). "Reversal of Changes of Myocardial Lipids by Chronic Administration of Aspirin in Isoproterenol Induced Myocardial Damage in Rats". **Indian J. Physiol. Pharmacol.**, 36, 47-50.

6. Parthasarathy, L., Vadnal, R. E., Ramesh, G. T., Shyamaladevi, C. S. and Parthasarathy, R. (1993). "Myo-inositol Monophosphatase from Rat Testes: Purification and Properties". **Arch. Biochem. Biophys.**, 304,94-101.

7. Ramesh, G. T., Parthasarathy, L. and Shyamaladevi, C. S. (1994). "Studies on the Effects of Lithium Stable Isotopes on Inositol 1-phosphatase in HypercholesterolemicRats". **Med. Sci. Res.,** 2, 431-434.

8. Ramesh, G. T., Balsubramanian, A., Merline, A. and Gunasekaran, S. (1994). "Molecular Biology and Genetic Upgradation of Azospirillum-Biofertilizer for Rice". **Rice Biotechnol.**, 1, 44-45.

9. Ramesh, G. T., Parthasarathy, L., Parthasarathy, R. and Shyamaladevi, C. S. (1995). "Studies on the Inositol Second Messenger System with Aortic Slices". **Med. Sci. Res.**, 23, 383-385.

10. Vadnal, R. E., Ramesh, G.T., Parthasarathy, L. and Parthasarathy, R. (1996). "Molecular Aspects of Myo- inositol Monophosphatase". **World Congress on Psychiatry**, Madrid, Spain.

11. Jadhav, A. L. and Ramesh, G. T. (1997). " Pb-induced Alterations in Tyrosine Hydroxylase Acitivity in Rat Brain". **Mol. Cell. Biochem.**, 175, 137-141.

12. Ramesh, G. T., and Jadhav, A. L. (1998). "Region Specific Alterations in Tyrosine Hydroxylase Activitiy in Rats Exposed to Lead". **Mol. Cell. Biochem.**,189, 19-24.

13. Ramesh, G. T., Sunil, K. M., Aggarwal, B. B. and Jadhav, A. L. (1999). “Lead activates Nuclear Transcription Factor kappa B, Activator Protein-1 and N-terminal c-Jun Kinase in Pheochromacytoma cells”. **Toxicol. Appl. Pharmacol.**,155(3), 280-286.

14. Ramesh, G. T., Jadhav, A. L. and Palur, G. (2000). “Contribution of PKC and Glutamate in Pb- induced cytotoxicity”. **Tox. Lett.**,115, 89-98.

15. Gedeon, Y., Ramesh, G. T. and Jadhav, A. L. (2001). “Changes in mesocorticolimbic dopamine and D(1)/D(2) receptor levels after low level lead exposure: a time course study”. **Tox. Lett.**,123, 217-226.

16. Ramesh, G. T. and Jadhav, A. L. (2001). "Levels of Protein kinase C and Nitric oxide synthase activity in rats exposed to sub chronic low level lead”. **Mol. Cell. Biochem.,** 121, 27-33.

17. Ramesh, G. T., Sunil, K. M., Aggarwal, B. B. and Jadhav, A. L. (2001). “Lead exposure activates Nuclear Transcription Factor kappa B, Activator Protein-1 and c-Jun N-terminal Kinase and caspase in the rat brain”. **Tox. Lett.**,123, 195-207.

18. Kulkarni, A. D., Yamauchi, K., Hales, N.H., Ramesh, V., Ramesh, G. T., Sundareasan, A., Andrassy, A. and Pellis, N. R. (2002) "Nutrition beyond nutrition: Plausibility of immunotrophic nutrition for space travel". **Clin. Nutr.**, 21, 231- 238.

19. Ramesh, G. T., Ghosh, D. and Gunasekar, P. G. (2002). “Activation of Early Signaling Transcription Factor NF-B following low level manganese exposure”. **Tox. Lett.**,136(2), 155-162.

20. Wise, K., Manna, S., Barr, J. Palur, G. and Ramesh, G. T. (2004). "Activation of Activator Protein 1 DNA Binding Activity Due to Low Level Manganese Exposure in Pheochromocytoma Cells”. **Tox.** **Lett.**,147(3), 237-244.

21. Sarkar A., Sreenivasan, Y., Ramesh, G. T. and Manna, S. K. (2004). “Beta-D-glucoside Suppressed TNF-induced Activation of Nuclear Transcription Factor kappaB But Potentiates Apoptosis”. **J. Biol. Chem.**, 279(32), 33768-33781.

22. Felix, K., Wise, K., Manna, S., Wilson, B. L., Thomas, R., Barr, J., Kulkarni, A., Pellis. N. R. and Ramesh, G. T. (2004). **“**Altered Cytokine Expression in Tissues of Mice Subjected to Simulated Microgravity”. **Mol. Cell. Bio.**,266, 79-85.

23. Manna, S. and Ramesh, G. T. (2005). “Interleukin-8 Induces Nuclear Transcription Factor-kappaB Through a TRAF6-dependent Pathway”. **J. Biol. Chem.**,280(8), 7010-7021.

*24.* Felix, K., Manna, S., Wise, K., Barr, J. and Ramesh, G. T. (2005). “Low Levels of Arsenite Activates Nuclear Factor-kappa B and Activator Protein-1 in Immortalized Mesencephalic Cells”. **J. Mol.Tox.,** 19, 67-77.

25. Wise, K., Manna, S., Yamakuchi, K., Ramesh, V., Wilson, B. L., Thomas, R., Sarkar, S., Kulkarni, A., Pellis. N. R. and Ramesh, G. T. (2005). “Activation of Nuclear Transcription Factor kappa-B in Mouse Brain Induced by A Simulated Microgravity Environment”. **in vitro Cell and Dev. Biol.**, 41, 118-123.

26. Kulkarni, A. D., Yamauchi, K., Sundeaesan, A., Ramesh, G. T. and Pellis, N. R. (2005). “Countermeasure for Space Flight Effects on Immune System: Nutritional Nucleotides”. **Gravit. Space. Biol.**,18(2), 101-102.

27. Manna, S., Sarkar, S., Barr, J., Wise, K., **Barrera, E. V., Jejelowo, O.,** **Rice-Ficht, A.** and Ramesh, G.T. (2005). “**Single Walled Carbon Nanotube Induces Oxidative Stress and Activates Nuclear Factor kappa B in Human Keratinocytes”. Nano Lett.,** 5(9), 1676-1684**.**

28. Poonam, S., Sarkar S., Hayes, B., Ramesh, V., Thomas, R., Wilson, B. L, Kim, H., Barns ,S., Kulkarni, A.,  Pellis, N.  and Ramesh, G. T. (2006). “ Proteomic Analysis of Mice Hippocampus in Simulated Microgravity Environment**”. J of Proteome Res.**,5, 548-553.

29. Wise, K., Manna, S., Thirumalai, S., Biswal, S. and Ramesh, G. T. (2006). “Long Term Cigarette Smoke Activates Nuclear Transcription Factor kappa B and Stress Responsive Kinase in Mouse Brain”. **Biochem. Pharmacol.**,71(11),1602-1609.

30. Wise, K., Manna, S., Yamakuchi, K., Ramesh, V., Wilson, B. L., Thomas, R. Sarkar, S., Kulkarni, A. Pellis. N. R. and Ramesh, G. T. (2006). “Activation of Activator Protein-1 in Mouse Brain Regions Exposed to Simulated Microgravity”. **In** **Vitro Cell. Dev. Biol.-Animal**, 42(3-4), 96-99.

31. Barr, J., Sharma, S. C., Sarkar, S., Wise, K., Dong, L., Periakaruppan, A. and Ramesh, G. T. (2007). “Nicotine Induces Oxidative Stress and Activates Nuclear Transcription Factor kappa B in Rat Mesencephalic Cells”. **Mol. Cell. Bio**., 297, 93-99.

32. Sarkar, S., Sharma, S.C., Yog, R., Periakaruppan, A., Barrera, E. V., Jejelowo, O., Thomas, R. L., Rice-Ficht, A., Wilson, B. L. and Ramesh, G. T. (2007) “Analysis of Stress Responsive Genes Induced By Single Walled Carbon Nanotubes in BJ Foreskin Cells”. **J. Nanosci. Nanotechnol.**, 7, 584–592.

**33.** Taga, M., Yamauchi, K., Odle, J., Furian, L., Sundaresan, A., Ramesh, G. T., Pellis, N. R., Andrassy, R. J and Kulkarni, A. D. (2006). “Melanoma Growth and Tumorigenicity in Models of Microgravity”. **Aviat. Space. Environ. Med.**, 77, 1113-1116.

34. Sharma, S.C., Sarkar, S., Periakaruppan, A., Barr, J., Wise, K., Thomas, R.L., Wilson, B.L. and Ramesh, G. T. (2007). “Single Walled Carbon Nanotubes Induces Oxidative Stress in Rat Lung Epithelial Cells”. **J. Nanosci.Nanotechnol.**,7(7), 2466-2472.

35. Raghavendra, P.B., Sreenivasan, Y., Ramesh, G.T., and Manna, S.K. (2007). ”Cardiac Glycoside Induces Cell Death via FasL by Activating Calcineurin and NF-AT, but Aoptosis Initially Proceeds Through Activation of Caspases”. **Apoptosis**., 12(2),307-18.

36. Periakaruppan, A., Kumar, F., Sarkar, S., Sharma, S.C., and Ramesh, G. T. (2007). “Uranium Induces Oxidative Stress in Lung Epithelial Cells”.  
**Arch. Toxicol.**,81(16): 389-395.

**37.** Manna, S.K., Aggarwal, R.S., Sethi, G., Aggarwal, B.B., and Ramesh, G.T. (2007). “Morin (3,5,7,2',4'-Pentahydroxyflavone) Abolishes Nuclear Factor-{kappa}B Activation Induced by Various Carcinogens and Inflammatory Stimuli, Leading to Suppression of Nuclear Factor-{kappa}B-Regulated Gene Expression and Up-regulation of Apoptosis”. **Clin. Cancer .Res.**, 13(7), 2290-2297.

38. Sharma, S.C., Sarkar, S., Periakaruppan, A., Sadanandan, B., Ravichandran, P.,  Ramesh, V., Thomas, R.L., Hall, J.C., Wilson, B.L.  and Ramesh, G. T. (2008). “Simulated Microgravity Activates Apoptosis and NF [kappa]B in Mice Testis”. **Mol. Cell. Biol**., 313(1-2), 71-78.

39. Poonam, S., Sarkar, S., Ramesh, V., Kim, H., Barns, S., Kulkarni, A.,  Hall, J. C., Thomas, R, Wilson, B. L, Pellis, N. R.,  and Ramesh, G. T (2008).“ Proteomic Analysis of Mouse Hypothalamus under Simulated Microgravity**”. J. Neurochem. Res.**,33(11), 2335-2341.

40. Periyakaruppan, A., Sarkar, S., Ravichandran, P., Sadanandan, B., Sharma, C.S., Ramesh, V., Hall, J.C., Thomas, R., Wilson, B.L. and Ramesh, G.T. (2009). “Uranium induces apoptosis in lung epithelial cells”. **Arch Toxicol.**,83(6), 595-600.

41.  Zhang, K., Holloway, T., Bahoura, M., Pradhan, A.K., RavichandranP., Pradhan,J., Smith, S., Hall,J.C., Ramesh, G.T., Sahu, D.R. and Huang, J.L. (2009). “Synthesis and magnetic characterizations of Eu-doped Gd2O3 and FeCo nanoparticles for biomedical applications”. **Proc. SPIE**, 7291, 729104-729113.

42. RavichandranP., Periyakaruppan,A., Sadanandan, B., Ramesh, V., Hall,J.C., Jejelowo, O. and Ramesh, G.T. (2009). “Induction of Apoptosis in Rat Lung Epithelial Cells by Multiwalled Carbon Nanotubes”. **J Biochem Mol. Toxicol.**, 23 (5), 333-344.

43. Baluchamy, S., Zhang, Y., Ravichandran, P., Ramesh ,V., Sodipe, A., Hall, J.C., Jejelowo, O., Gridley, D.S., Wu, H. and Ramesh, G.T . (2010). “Expression profile of DNA damage signaling genes in 2 Gy proton exposed mouse brain”. **Mol. Cell.Biochem**., 341(1-2), 207-215.

44. Baluchamy, S., Ravichandran, P., Periyakaruppan, A., Ramesh, V., Hall, J.C., Zhang, Y., Jejelowo, O., Gridley, D.S., Wu, H., Ramesh, G.T. (2010). “Induction of cell death through alteration of oxidants and antioxidants in lung epithelial cells exposed to high energy protons”. **J. Biol. Chem.,** 285 (32), 24769-24774.

45. Baluchamy, S., Zhang, Y., Ravichandran, P., Ramesh, V., Sodipe, A., Hall, J.C., Jejelowo ,O., Gridley, D.S., Wu, H. and Ramesh, G.T. (2010). “Differential oxidative stress gene expression profile in mouse brain after proton exposure”. **In Vitro. Cell. Dev. Biol. Anim**., 46, 718–725.

46. Gopikrishnan, R., Zhang, K., Ravichandran, P., Baluchamy, S., Biradar, S., Vani, R., Hall, J.C., Pradhan, A. and Ramesh,G.T.(2010).  **“**Synthesis, Characterization and Biocompatibility Studies of Zinc oxide (ZnO) Nanorods for Biomedical application”. **Nano Micro Lett**., 2 (1), 31-36

47. Ravichandran, P., Baluchamy, S., Sadanandan, B., Gopikrishnan, R., Biradar, S., Ramesh, V., Hall, J.C. and Ramesh, G.T. (2010). “Multiwalled carbon nanotubes activate NF-kappaB and AP-1 signaling pathways to induce apoptosis in rat lung epithelial cells”. **Apoptosis**, 15, 1507–1516.

48. Zhang, K., Holloway, T., Pradhan, J., Bahoura, M., Bah, R., Rakhimov, R., Pradhan, A.K., Ravichandran P.and Ramesh, G.T. (2010). “Synthesis and magnetic characterizations of La1-xSrxMnO3 nanoparticles for biomedical applications”. **J. Nanosci. Nanotechnol.**, 10, 5520-5526.

49. Ravichandran, P, Baluchamy, S., Gopikrishnan, R., Biradar, S., Ramesh, V., Goornavar, V., Thomas, R.L., Wilson, B.L., Hall, J.C., and Ramesh, G.T. (2011). “Pulmonary biocompatibility assessment of inhaled single-wall and multi- wall carbon nanotubes in BALB/C mice”. **J. Biol. Chem.,** 286(34), 29725–29733.

50. Tariq, M.A., Soedipe, A., Ramesh, G.T., Wu, H., Zhang, Y., Shishodia, S., Gridley, D.S., Pourmand, N. and Jejelowo, O. (2011). ”The effect of acute dose charge particle radiation on expression of DNA repair genes in mice”. **Mol Cell Biochem**., 349(1-2), 213-238.

51. Biradar, S., Ravichandran, P., Gopikrishnan, R., Goornavar, V., Hall, J.C., Ramesh, V., Baluchamy, S., Jeffers, R.B. and Ramesh, G.T. (2011). “Calcium Carbonate Nanoparticles: Synthesis, Characterization and Biocompatibility”. **J.Nanosci. Nanotechnol.**, 11(8), 6868-6874.

52. Mangala, L. S., Zhang, Y., He, Z., Emami, K., Ramesh, G. T., Story, M., Rohde L. H. and Wu, H. (2011). “Effects of simulated microgravity on the expression profile of microrna in human lymphoblastoid cells”. **J. Biol. Chem**., 286(37), 32483–32490.

53. Gopikrishnan, R., Zhang, K., Ravichandran, P., Biradar, S., Ramesh, V., Goornavar, V., Jeffers, R.B., Pradhan, A., Hall, J.C., Baluchamy S. and Ramesh, G.T. (2011). “Epitaxial growth of the zinc oxide nanorods, their characterization and in vitro biocompatibility studies”. **J. Mater. Sci. Mater. Med.**, 10, 2301-2309.

54. Baluchamy, S., Ravichandran, P., Ramesh, V., He, Z., Zhang, Y., Hall J.C., Jejelowo, O., Gridley, D.S., Wu, H., Ramesh G.T. (2011). “Reactive oxygen species mediated tissue damage in high energy proton irradiated mouse brain”.**Mol. Cell. Biochem.**, 360(1-2), 189-195.

55. Ramesh, V., Ravichandran, P., Copeland, C.L., Gopikrishnan, R., Biradar, S., Goornavar, V., Ramesh, G.T., Hall, J.C. (2012). “Magnetite induces oxidative stress and apoptosis in lung epithelial cells”. **Mol. Cell. Biochem.**, 363(1-2), 225-234.

56. Mangala LS1, Zhang Y, He Z, Emami K, Ramesh GT, Story M, Rohde LH, Wu H.(2011) “Effects of simulated microgravity on expression profile of microRNA in human lymphoblastoid cells”. **J Biol Chem**. (37) 3248-3290.

57. Biradar, S., Goornavar, V., Periyakaruppan, A., Koehne, J., Jeffers, R., Hall, J.C., Ramesh, V., Meyyappan, M., Ramesh, G.T. (2012). Optimization of process parameters of polymer solution mediated growth of calcium carbonate nanoparticles **Nanotechnology**, 23(37), 375601.

58. Sadanandan B, Varadaraj MC, Ramesh GT, Channarayappa, Lokesh KN (2012).

Reduction of phytate content in unfermented whole grain wheat flour dough using permeabilized phytase active Candida versatilis mutants. J Biochem Tech, 3(5):144-146.

59. Babu RL, Naveen K, Patil RH, Devaraju KS, Ramesh GT, Sharma SC (2013). Effect of estrogen and tamoxifen on the expression pattern of AP-1 factors in MCF-7 cells: role of c-Jun, c-Fos, and Fra-1 in cell cycle regulation; **Mol Cell Biochem** 380(1-2):143-151.

60. Khan SY, Tariq MA, Perrott JP, Brumbaugh CD, Kim HJ, Shabbir MI, Ramesh GT, Pourmand N. (2013). Distinctive microRNA expression signatures in proton-irradiated mice. **Mol Cell Biochem** 382(1-2):225-235.

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62. Peeples, B., Goornavar, V., Peeples, C., Spence, D., Parker, V., Bell, C., Biswal, D., Ramesh, G.T., Pradhan, A., (2014) “Structural, stability, magnetic and toxicity studies of nanocrystalline Iron Oxide and Cobalt Ferrites for biomedical applications”; **J.** **Nanopart. Res**., 16:2290.

63. Ramirez, J., Periakaruppan, A., Sarkar, S., Ramesh, GT and Sharma, S.C. (2014). “Effect of Simulated Microgravity on the Activity of Regulatory Enzymes of Glycolysis and Gluconeogenesis in Mice Liver.”. **Microgravity Sci. Technol.**,25: 303-309.

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### Grantsmanship:

# RESEARCH SUPPORT OF Dr. Ramesh

# Research Grants [Funded]:

Title: ““CREST Center for Research and Education in Quantum Materials and Plasmonic Systems and Devices”.”

Role: Co- PI : % Effort: 10% Amount: $ 5 Million

Grant No./Agency: NSF Duration: 08/1/2020-9/31/2025

Purpose: Research & Education.

Title: CREST-CREAM.

Role: Project Investigator: % Effort: 5% Amount: $ 5 Million

Grant No./Agency: NSF Duration: 10/1/2016-6/31/2022

Purpose: Synthesis new Materials for energy.

# Research Grants [Submitted]:

Title: ““CREST Center for Research and Education in Quantum Materials and Plasmonic Systems and Devices”.”

Role: Co- PI : % Effort: 10% Amount: $ 5 Million

Grant No./Agency: NSF Duration: 08/1/2020-9/31/2025

Purpose: Research & Education.

Title: “Excellence in Research: Single Crystal growth and Investigation of Novel Exotic Fermion Materials.”

Role: Co- PI : % Effort: 10% Amount: $ 999,590

Grant No./Agency: NSF Duration: 08/1/2019-9/31/2021

Purpose: Single Crystal Synthesis.

# Research Grants Completed:

Title: “Acquisition of Transmission Electron Microscope Facility for Nanomaterials and Device Research at Norfolk State University.”

Role: Co- PI : % Effort: 10% Amount: $ 499,900

Grant No./Agency: DoD Duration: 08/1/2017-7/31/2020

Purpose: Equipment Acquisition.

Title: “Excellence in Research: Single Crystal growth and Investigation of Novel Exotic Fermion Materials.”

Role: Co- PI : % Effort: 10% Amount: $ 999,590

Grant No./Agency: NSF Duration: 08/1/2019-9/31/2021

Purpose: Single Crystal Synthesis.

Title: Center for Bio Inspired Materials.

Role: Project Co-PI: % Effort: 20% Amount: $ 5 Million

Grant No./Agency: NSF Duration: 10/1/2010-9/31/2017

Purpose: Synthesis new safe materials for biomedical applications.

Title: Partnership for Research and Education in Materials: Partnership for Advanced Functional Metamaterials (Meta-PREM)

Role: Sub Project -PI: % Effort: 10% Amount: $ 23,000

Grant No./Agency: NSF Duration: 06/1/2016-05/31/2017

Purpose: TiN synthesis and Biocompatability.

Title: Studies with alpha-Tocopherol on Simulated Microgravity-

Role: Project PI: Amount: $ 5 Million

Grant No./Agency: NCC-9-165/NASA-URC Duration: 6/15/2003-6/14/2010

Title: Studies with *in vivo* model of Simulated Microgravity on Calcium Homeostasis and Expression of Immediate Early Response Genes in Mouse Brain

Role: Co PI Amount: $ 750,000

Grant No./Agency: NASA- NAG1414 Duration: 10/11/1999-10/9/2003

Title: Evaluation of Biochemical Effects of Endocrine Disruptors on Dopamine Metabolism in Neuronal cells.

Role: PI Amount: $ 1000000

Grant No./Agency: HRD 041587/NSF Duration: 5/1/2004-4/30/2007

Title: Bionanotechnology in Space

Role: SubProject PI Amount: $ 750,000

Grant No./Agency: NCC-1-02038/NASA-URETI Duration: 10/102002-9/30/2007

Title: Institute for Biomedical and Health Disparities Research

Role: SubProject PI Amount: $ 1.5 Million

Grant No./Agency: RR03045-18/NIH-NCRR-RCMI Duration: 9/1/2004-8/31/2009

Title: Systematic identification of genes and transduction pathways involved in radio-adaptive response.

Role: Project PI: % Effort: 5% Amount: $ 20,000

Duration: 1/1/2011-12/31/2011 Grant No./Agency: NASA

Purpose: Identification of genes in radio-adaptive response.

Title: Center for Bionanotechnology and Environmental Health

Role: Project Co PI: % Effort: 10% Amount: $ 5 Million

Grant No./Agency: NCC-NASA-URC Duration: 10/1/2008-9/30/2013

Purpose: The major goal of this project is to examine the effects of high energy protons on brain.

Title: An attempt to identify biomarkers in mouse lung exposed to single walled carbon nanotubes.

Role: Project PI: % Effort: 10% Amount: $ 220, 000

Grant No./Agency: NASA NSTI Duration: 9/1/2009-7/31/2012

Purpose: The major goal of this project is to identify biomarkers.

Title: Development of an Integrated Microfluidic Ion-specific Carbon Nanofiber Array Electrode Biosensor for Point-of-care Clinical Diagnostics.

Role: Project PI: % Effort: 10% Amount: $ 300,000

Duration: 10/1/2011-9/30/2015 Grant No./Agency: NASA-NSTI

Purpose: Identification of genes in radio-adaptive response

Title: Integrative Graduate Education and Research Traineeship in magnetic and nanostructured materials.

Role: Senior Investigator % Effort: 5% Amount: $ 3.1 Million

Duration: 8/1/2010-7/30/2015 Grant No./Agency: NSF

Purpose: Integrative Graduate Education and Research

Title: Micro RNA Expression Profiles in Cultured Human Fibroblasts in Space.

Role: PI % Effort: 5% Amount: $ 10,000

Duration: 1/1/2015-12/31/2015 Grant No./Agency: NASA

Purpose: Integrative Graduate Education and Research.

Title: Center of Excellence in Advanced Nanomaterials and Devices (CEAND)

Role: Investigator % Effort: 10% Amount: $ 4.7 Million

Duration: 6/15/2011-6/14/2016 Grant No./Agency: DoD

Purpose: The major goal of make advanced materials and devices.