

Curriculum Vitae

Ravichandran Manisekaran,
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Objectives:

To acquire knowledge about Nanotechnology especially in Nanotherapeutics & Nanomedicine where I can put all my efforts, acquire skills and contribute to the growth of my career and effectively for my Ph.D.

Personal attributes:

- Excellent Leadership Qualities, Consistent performer, Radical Thinker.
- Prefer to be practical rather than being positive.
- Take initiative and work independently or as part of a group
- Good Convincer, Good Mathematical and problem solving ability.
- Highly motivated, dynamic, disciplined, confident and goal oriented.
- Dedicated to quality, continuous improvement and bottom line objectives.

Educational Qualification:

Educational qualification	Year of passing	University/institution	Percentage of marks
Doctor of Philosophy	2013-current	Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional, Mexico city	-
M.Sc Medical Bio Nanotechnology	2008-2010	Chettinad University, kelambakkam, Chennai	8.34 /10(CPGA)
B.Sc Biochemistry	2005-2008	Indo-American college, Cheyyar (affiliated to Tiruvalluvar University)	77.6%
H.S.C	2005	Velammal Matric. Hr. Sec. School, Chennai.	77.25%
S.S.L.C	2003	Velammal Matric. Hr. Sec. School, Chennai	76.6%

Workshops and conferences attended:

1. Awareness programme on current trends in Nanotechnology, Anna University, and Oct.2008.
2. International workshop on advances in Nanoscience and technology, Anna University, Oct 2009.
3. One day aquitance programme on Accelerators based science and technology, VIT, Oct 2009.
4. National level seminar on Biochemistry and Bioinformatics, (Synapse), Valliammal College, Chennai, Jan 2008.
5. Application of Molecular techniques in Clinical diagnosis and Research, CHRI, Dec 2009.
6. National level seminar on Biochemistry, (Biovision), Indo-American College, Nov 2007.
7. One day course on particle characterisation conducted by Malvern Instruments, Apr 2010.
8. XXII International Materials Research Congress, IMRC-2013, August 11 - 15, Cancún, México.
9. XXIII International Materials Research Congress, IMRC-2014, August 17 - 21, Cancún, México.

Oral & Poster Presentation:

- Introduction to Nanotechnology in Biovision-07, Indo-American College, Nov 2007.
- K. K. Jyothi, I.G. Becerril, S.Velumani, M. Sridharan, J. Tapia Ramirez, J. Romero Ibarra, A. Angeles Pascual, **M. R. Chandran**, A. Ramirez, G. Oza, Gold-coated Magnetite Nanoparticles: Synthesis and Characterization, 4th Mexican Workshop on Nanostructured Materials 2013, March 19-22, Benemerita Universidad Autonoma de Puebla, Mexico.
- **Ravichandran Manisekaran**, Goldie Oza, Jose Tapia Ramirez, Velumani Subramaniam, Engineering iron oxide nanoparticles (Fe_3O_4) with cobalt and manganese for efficient enhancement of superparamagnetic behaviour, symposium 7D, Advances In Functional Semiconducting Materials, XXII International Materials Research Congress, IMRC-2013, August 11 - 15, Cancún, México.

- Goldie Oza, **Ravichandran Manisekaran**, Jose Tapia Ramirez, Velumani Subramaniam, Synaptic delivery of Doxorubicin using Au-Fe₃O₄ core-shell as a nano-vehicle for folic acid & cysteamine mediated targeted therapy, symposium 2A, Biomaterials for medical applications, XXII International Materials Research Congress, IMRC-2013, August 11 - 15, Cancún, México.
- Goldie oza, **M. Ravichandran**, S. Velumani, R. Asomoza, Biological synthesis of metal sulfide semi-conducting nanocrystals, symposium 7A, Advances In Functional Semiconducting Materials, XXIII International Materials Research Congress, IMRC-2014, August 17 - 21, Cancún, México.
- **M. Ravichandran**, Goldie Oza, S. Velumani, Jose Tapia, Francisco Sierra-Garcia, Norma Barragan Andrade, R. Asomoza, Biological Synthesis of Semiconductor Zinc Sulfide Nanoparticles, symposium 7A, Advances In Functional Semiconducting Materials, XXIII International Materials Research Congress, IMRC-2014, August 17 - 21, Cancún, México.
- **M. Ravichandran**, Goldie Oza, S. Velumani, Jose Tapia, Francisco Sierra-Garcia, Norma Barragan Andrade, R. Asomoza, Core/Shell Nanoclusters of Doxorubicin Functionalized Au-M (Co, Mn) Fe₂O₄: A Theranostic approach for Cancer Therapeutics, symposium 2C, Biomaterials for medical applications, XXIII International Materials Research Congress, IMRC-2014, August 17 - 21, Cancún, México.
- Goldie oza, **R. Manisekaran**, S. Velumani, Jose Tapia, Francisco Sierra-Garcia, Norma Barragán Andrade, R. Asomoza, Designing a drug-delivery vehicle with Au-Fe₃O₄-Graphene Quantum dots: A Tri-pronged mechanism for Bioimaging, synaptic delivery and apoptosis induction in Cancer cells, symposium 2C, Biomaterials for medical applications, XXIII International Materials Research Congress, IMRC-2014, August 17 - 21, Cancún, México.

Publications:

1. One-dimensional ordered growth of magneto-crystalline and biocompatible cobalt ferrite nano-needles, **M. Ravichandran**, Goldie Oza, S. Velumani, Jose Tapia Ramirez, Francisco Garcia Sierra, Norma Barragán Andrade, Marco A. Garza-Navarro, Domingo I. Garcia-Gutierrez, R. Asomoza – Materials Letters, 135 (2014) 67-70. Doi:10.1016/j.matlet.2014.07.154
2. Cobalt Ferrite Nanowhiskers as T2 MRI Contrast agent, **M. Ravichandran**, Goldie Oza, S. Velumani, Jose Tapia Ramirez, Francisco Garcia-Sierra, Norma

Barragán Andrade, Marco A.Garza-Navarro, Domingo I.Garcia-Gutierrez, Rafael Lara-Estrada, Emilio Sacristán-Rock and Junsin Yi – RSC Adv., 2015, 5, 17223-17227. Doi: 10.1039/C4RA11934G

Areas of Expertise:

- Synthesis of Nanoparticles using green synthesis method
- Synthesis and antibacterial activity of Gold and Silver Nanoparticle
- Synthesis and Antibacterial activity of Titanium dioxide Nanoparticle
- Biomaterial scaffold preparation
- Polymer Encapsulation of Metal Nanoparticle
- Karyotyping basics (MOLECULAR BIOLOGY)
- DNA Isolation and Gel documentation(MOLECULAR BIOLOGY)
- PCR tech & Agarose gel electrophoresis
- PAGE technique
- Colorimetric Assays and some biochemical titrations and assays.
- Cell culture techniques
- Functionalization and characterization of nanoparticles

Instrumentation Handling:

TECAN reader M200 model (UV visible spectroscopy),

Fluorescent Microscope (Olympus),

FTIR spectroscopy,

Lyophiliser, spinwin,

Ultra centrifuge,

Field Emission scanning electron microscopy,

Confocal microscopy,

Zetasizer particle size analyser.

Software Handling:

Origin 8 software,

XRD software (Diamond & Rietveld analysis),

Image tool 3.0 software,

Photoshop CS4.

Details of Project:

M.Sc Project:

I carried out my master project under the guidance of Dr.L.Suguna, Scientist, Department of Biochemistry, C.L.R.I (Central Leather Research Institute) at Adyar in Chennai.

As a Nanotechnology student I have selected Nanosynthesis & Nanotoxicology as the centre of theme for my project. Title of the project is **“GREEN SYNTHESIS AND CHARACTERISATION OF GOLD NANOPARTICLES USING *Hibiscus rosasinesis* AND ASSESSMENT OF TOXICITY IN ZEBRAFISH (*Danio rerio*) EMBRYO MODEL”**.

I synthesized gold Nanoparticle of 27nm which I characterized through UV visible spec, FTIR, DLS and TEM. Then I continued toxicity in zebra fish model.

Ph.D Project:

My work is basically on Iron oxide nanomaterials synthesizing and employing it for various biomedical applications. Title of the project is **“SYNTHESIS, CHARACTERISATION AND DESIGN OF LIPOSOMES FOR ENCAPSULATION OF MONODISPERSED CORE-SHELL TYPE Fe_3O_4 NP'S AND CHEMOTHERAPEUTIC AGENTS FOR MEDICAL APPLICATIONS”** under the guidance of Dr.Velumani Subramaniam, SNI III, Professor in Electrical Engineering, CINVESTAV-IPN, Mexico city.

One of the important application will be for cancer therapy. I would functionalise the nanomaterials with specific drug for particular cancer and introducing into the blood stream which is targeted to cancerous cells then by external magnetic field the particles will be controlled outside the human body and due to applying of alternating magnetic field the heat will be produced to kill only the cancer cells without affecting normal cells. And I also aim to use this nanoparticles for various neurodegenerative disorders like Huntington's disease, Alzheimer's disease too.

Personal Details:

Name : RAVICHANDRAN MANISEKARAN
Father Name : Mr.G.Manisekaran
Mother Name : Mrs.M.Shanthi
Sex : Male
Date of Birth : 14 April 1987
Nationality : Indian
Marital Status : Single
Languages Known : Tamil, English, Spanish (Basic)
Residential Address : 1/268, Sri Lakshmi Nagar,
Thuntharigampattu,
Chetpet Road, Tiruvannamalai District,
Arni-632317, Tamilnadu,
India.

About Myself:

I am a person with strong will power, interpersonal skills and the ability to get along with people. I enjoy challenges and looking for creative solutions to problems. My strength is that I have very strong values and ethics. I believe in strong relationships and have a very supportive family and good friends.

DECLARATION

I hereby declare that above mentioned details are true and correct to the best of my knowledge and belief.

Date: 03.03.2015

Place: Mexico city

RAVICHANDRAN MANISEKARAN