**Curriculum Vitae and Bibliography**

Mukesh K. Pandey, Ph.D., M.R.S.C

**PRESENT ACADEMIC RANK AND POSITION**

# Assistant Professor

# Department of Radiology, Dec 2012 to Present Mayo Clinic College of Medicine

# Research Scientist Feb 2014 - Present

# Division of Nuclear Medicine, Department of Radiology

Mayo Clinic, Rochester MN

**EDUCATION**

# University of Delhi, Delhi, India. Ph.D. Chemistry 2005

# University of Delhi, Delhi, India. MPhil Chemistry 2000

# Banaras Hindu University, Varanasi, India. MS Chemistry 1999

# Banaras Hindu University. Varanasi, India. BS Chemistry 1997

**FELLOWSHIP**

# Research Fellow at BWH, June 2009- April 2012

# Harvard Medical School, Boston MA USA

# Postdoctoral Research Associate, Dec 2005- May 2009

# University of Massachusetts at Lowell USA

**HONORS/AWARDS**

Mayo Clinic Radiology Advanced Award 2012 for alternative synthesis of 18F-FLT and 18F-FTHA PET probes for cancer and cardiac imaging respectively.

2011-To present: The designatory title of the “MRSC” was awarded by “*The* *Royal Society of Chemistry London*” as a dignified member of the Royal Society of Chemistry through proper selection.

**PREVIOUS PROFESSIONAL POSITIONS AND MAJOR APPOINTMENTS**

# Assistant Professor Dec 2012 – to Present

Department of Radiology**,**

College of Medicine, Mayo Clinic Rochester MN

#

# Research Scientist Feb 2014 - Present

# Division of Nuclear Medicine, Department of Radiology

Mayo Clinic, Rochester MN

# Research Associate April 2012 - Feb 2014

# Department of Radiology Mayo Clinic Rochester MN

# Research Fellow at BWH, June 2009- April 2012

# Harvard Medical School, Boston MA USA

# Postdoctoral Research Associate, Dec 2005- May 2009

# University of Massachusetts at Lowell USA

**PROFESSIONAL MEMBERSHIPS AND SOCIETIES**

# Society of Nuclear Medicine and Molecular Imaging USA 2009-Present

Member

American Chemical Society USA 2006-Present

Member

Royal Society of Chemistry London 2011-Present

Member

**EDITORIAL RESPONSIBILITIES**

 **EDITORIAL BOARD MEMBER** 2014-Present

Serving on editorial board of the “*American Journal of Nuclear Medicine and Molecular Imaging*” as an “Associate Editorial Board Member”, a peer-reviewed international journal on Nuclear Medicine and Molecular Imaging (ISSN-2160-8404)

**AS A REVIEWER**

Chemistry and Biology Letters 2014-Present

# (I-science Publication)

ACS Applied Materials and Interfaces  2013-Present

# (American Chemical Society Publication, USA)

# Letters in Drug Design and Discovery 2013-Present

# (Bentham Science Publication, UAE)

# Polymer 2013-Present

# (The International Journal for the Science and Technology of

# Polymers, Published by Elsevier)

# Molecule 2012-Present

# (Multidisciplinary Digital Publishing Institute, Switzerland)

# Molecular Pharmaceutics 2010-Present

# (ACS Journal Publication, USA)

# Current Nano-science 2009-Present

# (Bentham Science Publication, UAE)

# Meeting Abstract Reviewer 2010

# Society of Nuclear Medicine and Molecular Imaging, USA

**RESEARCH GRANTS AWARDED**

1. Institutional small Grant from Radiology Research Committee 2013 as a Co-Investigator. Topic: “Radiosynthesis and Preliminary Evaluation of [11C] PBT2: A Potential PET Probe for Alzheimer’s disease”. Duration: Dec 2013 - Dec 2015

2. Institutional Grant from the Mayo Clinic Center for Translational Science Activities (CTSA) 2013as a Co-Investigator. Topic: “Novel PET imaging evaluation of Chylous leaks”. Duration: Dec 2013 - Nov 2014

3. Institutional Grant from Department of Radiology as Part of Radiology Advanced Award 2012 as a Principal Investigator. Topic: “Microwave assisted synthesis of 18F-FLT and 18F-FTHA”. Duration: July 2012 - June 2013

**PUBLISHED RESEARCH PAPERS (PEER-REVIEWED FULL LENGTH)**

1. **Pandey M K**, DeGrado T R, Qian K, Jacobson M S, Clinton H E, Duclos Jr. R I, Gatley S J. Synthesis and Preliminary Evaluation of N-(16-18F-fluorohexadecanoyl)ethanolamide (18F-FHEA) as a PET Probe of N-Acylethanolamine Metabolism in Mouse Brain. ***ACS Chemical Neuroscience*, 2014** (In press, available online, **DOI:** 10.1021/cn400214j)

2. DeGrado TR, **PandeyMK**, Byrne JF, EngelbrechtHP, Jiang H, PackardAB, Thomas K, Jacobson MS, Curran GL, Lowe VJ. Preparation and Preliminary Evaluation of 63Zn Citrate as a Novel PET Imaging Biomarker for Zinc**. *Journal of Nuclear Medicine*, *2014 55(8), 1348-1354***

3. **Pandey M K**, Byrne J F, Jiang H, Packard A B, DeGrado T R. Cyclotron production of 68Ga via the 68Zn(*p,n*)68Ga reaction in aqueous solution. ***American Journal of*** ***Nuclear Medicine and Molecular Imaging 2014,4,303-310* (**as a corresponding author)

4. **Pandey M K**, Engelbrecht H P, Byrne J, Packard A B, DeGrado T R. Production of 89Zr via the 89Y(*p,n*)89Zr reaction in aqueous solution: Effect of solution composition on in-target chemistry, ***Nuclear Medicine and Biology 2014, 41(4)-309-316***. **(**as a corresponding author)

5. **Pandey M K**, Kumar A, Ravichandran S, Parmar V S, Watterson AC, Kumar J. Chemo-enzymatic Synthesis of Polydimethylsiloxane Curcumin Copolymer for Detection of Nitro-aromatics, *Journ*. *of Macr*. *Sci*.,***Pure and applied chemistry******2014, 51(5), 399-404.* (**as a corresponding author)

6. **Pandey M K**, Belanger A P, Wang S, DeGrado T R. Structure Dependence of Long-chain [18F]Fluorothia Fatty Acid as Myocardial Fatty Acid Oxidation Probes, ***Journal of Medicinal Chemistry 2012, 55(23), 10674-10684.(ACS publication)***

7. Kumar S, Reddy L CS, Kumar Y, Kumar A, Singh B K, Kumar V, Malhotra S, **Pandey M K**, Jain R, Thimmulappa R, Sharma S K, Prasad A K, Biswal S, Van der Eycken E, DePass A L, Malhotra S V, Ghosh B, Parmar V S. Arylalkyl ketones, benzophenones, desoxybenzoins and chalcones inhibit TNF-α induced expression of ICAM-1: structure-activity analysis, ***Arch Pharm (Weinheim). 2012, 345(5):368-77*.**

8. **Pandey M K**, Tyagi R, Yang K, Fisher R J, Colton C K, Parmar V S, Kumar J, Aiazian E, Watterson A C, Design and Synthesis of Perfluorinated Amphiphilic Copolymers: Smart Nanomicelles for Theronastic Applications. ***Polymer*** 2011, 52(21), 4727-4735. (as a corresponding author)

9. **Pandey M K**, Bansal A and DeGrado T R, Fluorine-18 labeled Thia Fatty Acids for PET Imaging of Fatty Acid Oxidation in Heart and Cancer. ***Heart and Metabolism 2011***, **51**, **15-19. (A review article)**

10. **Pandey M K**, Kumar S, Thimmulappa R K, Parmar V S, Biswal S and Watterson A C. Design, Synthesis and Evaluation of Novel PEGylated Curcumin as Potent Nrf2 Activators in Human Bronchial Epithelial Cells. ***European Journal of Pharmaceutical Sciences 2011****,* ***43****,* ***16-24***. (as a corresponding author)

11.Belanger A P, **Pandey M K**, and DeGrado T R,Microwave-Assisted Radiosynthesis of [18F] Fluorinated Fatty Acid Analogs. ***Nuclear Medicine and Biology 2011,38, 435-441.***

12. **Pandey M K**, Balwani S, Sharma P K, Parmar V S, Ghosh B and Watterson A C. Design, synthesis and anti-inflammatory evaluation of PEGylated 4-methyl- and 4,8-dimethylcoumarins. ***European Journal of Pharmaceutical Sciences*** *39,* ***2010****, 134-140.*

##### 13. **Pandey M K**, Yang K, Pei C, Sharma P K, Viola J,Stromberg R,Kumar J, Parmar VS, and Watterson AC. Design and Biocatalytic Synthesis of Pluronics based Nanomicellar Self-assembly Systems for Drug Encapsulation Applications. *Journ*. *of Macr*. *Sci*.,***Pure and applied chemistry******2010, 47(8), 788-793.***

##### 14.DeGrado T R, Bhattacharyya F, **Pandey M K**, Belanger A P, Wang S. Synthesis and Preliminary Evaluation of 18-[18F] Fluoro-4-thia-oleic Acid (FTO) as a PET Probe of Fatty Acid Oxidation ***Journal of Nuclear Medicine******2010****,****51(8),1310-1317****.*

15. Kumar A, **Pandey M K**, Anandakathir R, Mosurkal R, Parmar V S, Watterson A C, Kumar J. Sensory response of pegylated and siloxanated 4,8-dimethylcoumarins: A fluorescence quenching study by nitro aromatics. ***Sens. Actuators B: Chem****.* ***2010****,* ***B147(1), 105-110.***

16. Kumar V, Gupta B, Kumar G, **Pandey M K**, Aiazian E, Parmar V S, Kumar J, and Watterson A C, Novel Pegylated Amphiphilic Copolymers. Novel PEGylated Amphiphilic Copolymers as Nanocarriers for Drug Delivery: Synthesis, Characterization and Curcumin Encapsulation. *Journ*. *of Macr*. *Sci*.,***Pure and applied chemistry 2010,* *47(12), 1154-1160.***

17.Gupta S, **Pandey M K**, Levon K, Haag R, Watterson A C, Parmar V S, Sharma S K. Biocatalytic Approach for the Synthesis of Glycerol-Based Macroamphiphiles and their Self-Assembly to Micellar Nanotransporters. ***Macromol. Chem. Phys****.* ***2010, 211, 239–244.***

18.Kancheva V D, Saso L, Boranova P L, Khan A, Saroj M K, **Pandey M K**, Malhotra S, Parmar V Set. al. Structure-activity relationship of dihydroxy-4-methylcoumarins as powerful antioxidants: Correlation between experimental & theoretical data and synergistic effect ***Biochimie***, **2010**, **92(9), 1089-1100**.

19.Tyagi R,Kumar R,**Pandey M K**, Kumar J,Parmar V S, Watterson A C, Amino acid and Poly (ethylene glycol) based Self - Organizing Polymeric Systems: Chemo-enzymatic Synthesis and Characterization, *Journ*. *of Macr*. *Sci*.,***Pure and applied chemistry 2008 45, 958-963.***

20. **Pandey M K**, Tyagi R, Gupta B, Parmar V S, Kumar J, Watterson A C. Synthesis and Characterization of Novel Amphiphilic Polymers as Drug Delivery Nano Carriers**,** *Journ*. *of Macr*. *Sci*.,***Pure and applied chemistry******2008****,* ***45*, *932-938.***

21. **Pandey M K**, Chandekar A,Tyagi R,Parmar V S,Tucci V B, Smith K D, Westmoreland P R,Mosurkal R, Kumar J, Watterson A C, Design and Lipase Catalyzed Synthesis of 4-Methylcoumarin-siloxane Hybrid Copolymers,*Journ*. *of Macr*. *Sci*.,***Pure and applied chemistry******2008****,* ***45, 926-931*.**

22. **Pandey M K**, Tyagi R, Tomar S, Kumar J, Parmar V S, Watterson A C, Design and Synthesis of Novel Pegylated 4-MethylCoumarins *Journ*. *of Macr*. *Sci*.,***Pure and applied chemistry****,* ***2007***, **44, 1293-1298.**

23. Kumar A, Singh B K, Sharma N K, Gyanda K, Jain S K, Tyagi Y K, Baghel A S, **Pandey M K**, Sharma S K, Prasad A K, Jain S C, Rastogi R C, Raj H G, Watterson A C, Parmar V S, Specificities of acetoxy derivatives of coumarins, biscoumarins, chromones, flavones, isoflavones and xanthones for acetoxy drug: protein transacetylase. ***European Journal of Medicinal Chemistry***, **2007**, **42, 447-455.**

24. Tyagi R, **Pandey M K**, Kumar J,Parmar V S, Watterson A C, Synthesis and Characterization of Photoactive Amphiphillic Polymers, ***Journ. of Macr. Sci., Pure and applied chemistry 2007,* 44, 1283-1287.**

25. Jain S C, **Pandey M K,** Upadhyay R K, Kumar R, Hundal G, Hundal M S, Alkaloids from *Toddalia aculeata*, ***Phytochemistry***, **2006, 67, 1005-1010**.  **(*most cited paper in last 5 years in its domain***)

26. Bhagat S, Jain M, **Pandey M K**, Pragati, Saxena A, Jain S C, Synthesis of New Bridgehead Heterocycles: Pyrimido[3′,2′:3,4]-1,2,4-triazino[5,6-b]indoles, ***Heteroatom Chemistry***, **2006**,**17(4), 272-276.**

27.Jain S C, Kumar R, Goswami R, **Pandey M K**, Khurana S, Rohatgi L, Gyanda K, Synthesis of Novel Non-isoprenoid Phenolic Acids and 3-Alkylpyridines, ***Pure and Applied Chemistry***, **2005**, **177, 185-193**.

**PUBLISHED BOOK CHAPTERS**

1. **Pandey** **M K,** Rangarajan S, a chapter written as a review in a book entitled “**Curcumin: Biosynthesis, Medicinal Uses and Health Benefits**” ISBN: 978-1-61942-487-6, on “**PEGylated Curcumin: A Potent Drug Candidate** 2012, 155-176” by Nova Science Publication, New York. (**as a corresponding author**)

## 2. Kumar R, **Pandey M K**,Tyagi R,Parmar V S,Watterson A C, Kumar J, a Chapter written as a review in **ACS symposium series** Book Entitled **“Polymers for Biomedical applications”** Oxford University Press ISBN13:978-0-8412-3966-1 on **“Enzymatically Synthesized Pegylated Polymers as Nano-Miceller Drug Delivery Systems” 2008, 977, 204-224.**

**PUBLISHED ABSTRACTS AND CONFERENCE PROCEEDINGS**

**1. Pandey M K**, Gatley J S, Duclos R, Degrado T R, Design and synthesis of *N*-(16-[18F]fluorohexadecanoyl)ethanolamide (16FEA) as endocannabinoid PET probe in animals and plants. ***J Nucl. Med. 2012; 53******(Supplement 2):1565***

**2. Pandey M K**, Belanger A P, Bhattacharya F, Wang S, DeGrado T R. Radiotracer evaluation of fatty acid oxidation (FAO) in skeletal muscle in rats: effect of muscle stimulation and acute CPT-1 inhibition. Abstract published in ***J Label Comp Radiophram 2011****;* ***54: (S1-S576), S-146***.

**3. Pandey M K**, Belanger A P, Wang S, DeGrado T R. Structure uptake relationship of [18F]-fluoro thia fatty acids as myocardial fatty acid oxidation probes. Abstract published in ***J Label Comp Radiophram 2011; 54: (S1-S576), S-151*.**

**4. Pandey M K**, Bhattacharyya F, Belanger A P, Wang S, DeGrado T R. PET Imaging of Fatty Acid Oxidation and Glucose Uptake in Heart and Skeletal Muscle of Rats: Effects of CPT-1 Inhibition*.* ***Circulation. 2010****;* ***122 (21): A12657*.**

**5. Pandey M K**, Tyagi R, Tucci VB, Kumar V, Gupta B, Sharma S K,­ Kumar J, Parmar V S, Watterson AC , Novel Nanotechnology Platform: Design and Synthesis, ***Polymer Preprints* 2008**, 49(2), 1066-67.

**6. Pandey M K**, Tyagi R, Parmar V S, Tucci V B, Kumar J, Shea T, Watterson A C, Synthesis and Characterization of Nano carrier Containing Antioxidant 4-Methylcoumarin, ***Polymer Preprints* 2007**, **48(2), 958-959.**

**7. Pandey M K**,Tyagi R,Parmar V S, Watterson A C, Kumar J, Design and Synthesis of Novel Amphiphilic Polymers for MRI and Selective Targeting in Cancer Diagnosis/Therapy, ***PMSE Preprints* 2007**, 96, 855-856.

**PRESENTED PAPERS IN NATIONAL AND INTERNATIONAL MEETINGS**

2013 **Pandey M K**,Engelbrecht H P, Byrne J P, Packard A B, Gruetzmacher J A, DeGrado T R. Cyclotron production of 89Zr in a solution target. 245th ACS National Meeting & Exposition, New Orleans, LA, USA, April 7-11, 2013 (2013), NUCL-40 (Formal Lecture)

2012 **Pandey M K**. Molecular Imaging a New Era of Diagnostics. Invited presentation in young investigator meeting MIT campus Boston MA USA. Oct 7th-8th 2012.(Formal Lecture)

2012 **Pandey M K**,Byrne J P, Packard A B, Rangarajan S, DeGrado T R. Electrolysis During Zirconium-89 Productions in a Solution Target Containing Yttrium Salts. 14th International Workshop on Targetry and Target Chemistry (WTTC14) Playa del Carmen, Mexico, August 26-29 2012. (Poster)

2012 **Pandey M K**, Gatley J S, Duclos R, DeGrado T R, Design and synthesis of *N*-(16-[18F]fluorohexadecanoyl)ethanolamide (16FEA) as endocannabinoid PET probe in animals and plants. SNM-National meeting 2012 Miami beach Florida. (Poster)

2010 **Pandey M K**, Belanger A P, Wang S, DeGrado T R. Design, synthesis and structure dependence of 18-[18F] fluorothia-fatty acids as myocardial fatty acid oxidation probes, 240th ACS National Meeting, Boston, MA, USA, August 22-26, 2010. (Formal Lecture)

2010 **Pandey M K,** Belanger A P, Bhattacharya F, Wang S, DeGrado T R, Synthesis and Preliminary Evaluation of 18-[18F]Fluoro-4-thia-oleic Acid (FTO) as a PET Probe of Fatty Acid Oxidation. SNM Annual meeting at Salt Lake City, UT, USA on 5-9 June 2010. (Formal Lecture)

2009 **Pandey M K.** Ammonium-Based Molecules as Multi-modality, Multi-Disease Imaging Probes. Seminars in Nuclear Medicine and Molecular Imaging 2009-2010 at Harvard Medical School, Boston, MA, USA on 17th Dec 2009. (Formal Lecture)

2007 **Pandey M K**. Synthesis and Characterization of Nano carrier Containing Antioxidant 4-Methylcoumarin: 234th ACS National Meeting, Boston, MA, USA On 19 -23rd August 2007. (Formal Lecture)

2007 **Pandey M K**. Design and synthesis of novel amphiphilic polymers for MRI and selective targeting in cancer diagnosis/therapy: 233rd ACS National Meeting Chicago IL USA On 26 -29th March 2007.(Formal Lecture)

2005**Pandey M K**, Kumar R, Jain S C. *Toddalia aculeata*: A potential source for drug discovery, IUPAC Satellite Symposium on Bioresources towards Drug Discovery and Development, University of Mauritius, Reduit, Mauritius (held at Mauritius from Feb. 2004). (Poster)

2005 **Pandey M K**, Goswami R, Saxena A, Kumar R, Jain SC, Parmar V S. Phytochemical studies of *Piper* genus, IUPAC Satellite Symposium on Bioresources towards Drug Discovery and Development, University of Mauritius, Reduit, Mauritius (held at Mauritius from Feb. 3 –4 2004). (Poster)

2004 **Pandey M K**, Kumar R, Bhardvaja A, Jain S C, Synthesis of some phenolic acids derived new pharmacophores, IUPAC International Conference on Biodiversity and Natural Products: Chemistry and Medical Applications, p-269 (held at Delhi from Jan. 26 – 31, 2004), India. (Poster)

2004 **Pandey M K**, Jain S C, Synthesis of new cytotoxic 3-alkyl pyridine alkaloids. IUPAC International Conference on Biodiversity and Natural Products: Chemistry and Medical Applications, p-271 (held at Delhi from Jan. 26 – 31, 2004), India. (Poster)

**MANUSCRIPTS UNDER REVIEW/PREPARATION**

1. **Pandey MK**, DeGrado TR. GSK3 Target Therapy and Imaging. *Journal of Medicinal Chemistry*, 2014 (invited perspective review - under review)
2. **Pandey MK**, ZhangY, Balschi JA, DeGrado TR. Synthesis and Longitudinal Relaxation (T1) Study of 15N Labeled Compounds as Hyperpolarized MR-Probe. *Journal of Magnetic Resonance Imaging*, 2014 (under preparation)

**EDUCATIONAL, TEACHING AND OTHER ACTIVITIES**

# At present, I am formally involved in guidance and training of technical staff, SURF students and fellows in Molecular Imaging Research with in the division of Nuclear Medicine. The role includes familiarization with standard techniques to design and develop various PET tracers for preclinical and clinical studies under directives of Dr Timothy R. DeGrado.

# In the past, I was involved in informal guidance and mentorship of undergraduate and graduate students at Institute of Nano-science and Engineering Technology with in the laboratory of Professor A C Watterson at University of Massachusetts Lowell.

I have been participating in molecular imaging seminars on radiopharmaceutical chemistry.Served as an organizing Member of the Scientific committee of IUPAC International Conference on Biodiversity and Natural Products: Chemistry and Medical Applications held in Delhi dated Jan. 26 – 31, 2004

**MISCELLANEOUS**

**1. Pandey M K, *PhD-Thesis*- Sept 2005**, Synthesis of Some Novel Pyridine Alkaloids And Phenolic Acids & Structure Elucidation of Some Bioactive Components of *Toddalia aculeata.*