From: Ashutosh Tiwari
Sent: den 6 maj 2014 12:12:40
To: Registrator vid Linköpings universitet
Cc:
Subject: Application for Professor in biomedical engineering, Dnr LiU-2013-01920, dated 2014-03-14

To

The Registrator,

Linköping University, SE-581 83 Linköping

Sub: Application for Professor in biomedical engineering, Dnr LiU-2013-01920, dated 2014-03-14

Dear Madam,

I am here by applying for Professor in biomedical engineering against your advertisement, Dnr LiU-2013-01920, dated 2014-03-14. Please find herewith e-application annexed with all the necessary documents and information. The four printed copies of complete application have already been submitted to your office today at morning.

Looking forward to hearing from you.

With warm regards

Ashutosh Tiwari, PhD, Docent
Associate Professor and Group Leader
Smart Materials and Biodevices
Room M312
Biosensors and Bioelectronics Centre
IFM-Linköpings universitet
581 83 LINKÖPING, Sweden
Tel: (+46) 0700-89 5671
Fax: (+46) 013-13 7568
Web: https://www.ifm.liu.se/applphys/biosensors-and-bioelectro/group-members/ashutosh-tiwari/

International Conference on Smart Materials and Surfaces, Bangkok, Thailand
26-28 August, 2014

URL: http://www.setcor.org/conferences/SMS-Bangkok-2014

Advanced Materials World Congress, Sweden
14-17 September, 2015

EDITOR-IN-CHIEF
Advanced Materials Letters
Advanced Materials Reviews

1.0 Personal information

1.1 Name
Ashutosh Tiwari

1.2 Date of birth
19780415-1251

1.3 Home address and telephone number
124B Rydsvägen, 58431 Linköping
Tel.: 013-4822-758

1.4 Work address and telephone number
Biosensors and Bioelectronics Centre,
Department of Physics, Chemistry and Biology,
IFM-Linköping University, S-58183 Linköping
Tel.: 013-2823-95

1.4.1 E-mail address
ashutosh.tiwari@liu.se

1.5 Present employment with the exact denomination and date of employment. Regarding application for promotion; enclose the Associate Professor/Senior Lecturer/Lecturer/Research Fellow/Assistant Lecturer hiring decision **Suppl. no.** *1*
Linköpings universitet, Universitetslektor from 2013-04-01

1.6 Previous employment. Leaves of absence including type (e.g. parental leave)
1. Linköpings universitet, Forskarassistent (April 2011 - March 2013)

2. National Institute for Materials Science, Japan- Foreign Researcher (September 2009 - March 2011)

3. National Physical Laboratory, India- Young Scientist (June 2006-October 2008)

4. Research fellow/Teaching assistant, University of Allahabad (February 2003-January 2006)

Parental leave: None

1.7 Temporary residence as visiting research fellow/lecturer/postdoctoral research fellow etc.

1. NIMS, Japan- JSPS Bridge Fellow (December 2012 - January 2013).

2. Cranfield University, UK- Marie Curie Fellow (September - November 2010).

3. NIMS, Japan- JSPS Postdoctoral Fellowship (November 20009 - March 2011).

4. University of Wisconsin-Milwaukee, USA- Research Associate (February 2008-August 2009).

5. University of Allahabad, India - Research Associate (February 2006 - May 2006).

1.8 Other information

Honorary Positions

1. Adjunct Professor, DCR University of Science and Technology, India (2012-till today)

2. Foreign Professor/Researcher, World Premier International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science, Japan (2011-till today)

3. Guest Professor, Jinan University, China (2011-till today)

4. Adjunct Professor, Jiangsu University, China (2009-till today)

2.0 Diplomas

2.1 University Diploma including year of degree. Enclose grades

1. Higher education degree(s) (year, subject area)
M.Sc., 1999, Organic Chemistry
B.Sc., 1997, Chemistry, Zoology, Botany

Suppl. no. *2-4*

2. Doctoral degree (year, discipline/subject area, dissertation title, and supervisor)

PhD, 2005, Materials Chemistry, 'Chemical Study of Plants Seed Gums',

Supervisor: Prof. Vandana Singh

2.2 Associate Professor qualification including year. Enclose certificate

Suppl. no. *5*

Associate Professor (Docent) in Applied Physics with the specialization of Biosensors and Bioelectronics qualified on September 9, 2013.

2.3 Other education of relevance to the appointment

1. Research Supervision, 4 ECTS credits
Article title: 'Supervision of doctoral student by public-private sector partnership: A special focus on healthcare nanotechnology'.

Related publication
Supervision of doctoral student by public-private sectors partnership: A special focus on healthcare nanotechnology, Ashutosh Tiwari, Adv. Mat. Lett. 2013, 4(2), 106-107.

2. On 'Polymeric Sensors' at Hindustan College of Science and Technology, Farah, Agara, India in June 2005. Training course focused on the development of multifunctional smart polymers and their emerging roles in sensor technology.

3.0 Scientific merits

3.1 Short description of own research profile (maximum 2 pages) **Suppl. no.** *6*

3.2 Short description of planned research (maximum 2 pages) **Suppl. no.** *7*

3.3 List of publications

3.3.1 Scientific publications in scientific journals. (Mark the publications that are included in the doctoral thesis)

Scientific publications in scientific journals since 2005.
Citation data from Google Scholar 20140505
Publications: 87;
H-index: 27
i10-index: 55
Full publication list see attachment 08

Suppl. no. *8*

3.3.2 Other publications

Books: 19
Book Chapters: 53
Conference papers: 57

Full publication list see attachment 09

Suppl. no. *9*

3.3.3 List of a maximum of 10 scientific pieces of work that are considered to be most meritorious for the appointment. The list shall contain information on publisher and year of publication.

1. MRI-visual order-disorder micellar nanostructures for smart cancer theranostics, H. K. Patra, N. U. Khaliq, T. Romu, E. Wiechec, M. Borga, A. P. F. Turner, Ashutosh Tiwari, Advanced Healthcare Materials, 3, 526-535, 2014. John Wiley & Sons, Inc.*

2. On/off switchable zipper-like bioelectronics on a graphene interface, O. Parlak, A.P.F. Turner, Ashutosh Tiwari, Advanced Materials, 26 (3), 482-486, 2014. John Wiley & Sons, Inc.*

3. Electrochemical evaluation of a protein-imprinted polymer receptor, Najmeh Karimian, Anthony P.F. Turner, Ashutosh Tiwari, Biosensors and Bioelectronics, 59, 160-165, 2014. Elsevier Publication.*

4. Ultrasensitive detection of human liver hepatocellular carci-noma (HepG2) cells using a label-free aptasensor, L. Kashefi-Kheyrabadi, M.A. Mehrgardi, E. Wiechec, A.P.F. Turner, Ashutosh Tiwari, Analytical Chemistry, DOI: 10.1021/ac500375p, 2014. American Chemical Society.*

5. An ultrasensitive molecularly-imprinted human cardiac troponin sensor, Najmeh Karimian, Mikhail Vagin, Mohammad Hossein Arbab Zavar, Mahmoud Chamsaz, Anthony P.F. Turner, Ashutosh Tiwari, Biosensors and Bioelectronics, 50, 492–498, 2013. Elsevier Publication.*

6. Template-directed hierarchical self-assembly of graphene based hybrid structure for electrochemical biosensing, Onur Parlak, Atul Tiwari, Anthony PF Turner, Ashutosh Tiwari, Biosensors and Bioelectronics, 49, 53-62, 2013. Elsevier Publication.*

7. Detection of p53 gene point mutation using sequence-specific molecularly-imprinted PoPD electrode, Ashutosh Tiwari, Swapneel Deshpande, Hisatoshi Kobayashi, Anthony PF Turner, Biosensors and Bioelectronics, 35, 224-229, 2012. Elsevier Publication.*

8. 'On/off'-switchable catalysis by a smart enzyme-like imprinted polymer, Songjun Li, Yi Ge, Ashutosh Tiwari, Shenqi Wang, Anthony P.F. Turner, Sergey A. Piletsky. Journal of Catalysis, 278, 173-180, 2011. Elsevier Publication.

9. A positively temperature-responsive nanoreactor, Songjun Li, Yi Ge, Ashutosh Tiwari, S. Cao, Small, 6, 2453-2459, 2010. John Wiley & Sons, Inc.

10. Biodegradable hydrogels based on novel photopolymerizable guar gum-methacrylate macromonomers for in situ fabrication of tissue engineering scaffolds, Ashutosh Tiwari, Jamison J. Grailer, Srikanth Pilla, Douglas A. Steeber, Shaoqin Gong, Acta Biomaterialia, 5, 3441-3452, 2009. Elsevier Publication.

Scientific merits continued

3.4 Grants. Larger grants that have been received as main applicant or as fellow applicant. (State main applicant and other fellow applicants).

DST, India: “Synthesis of Organic-Inorganic Nanocomposites for Sensor Applications”, 2006-2009. (main-applicant: Ashutosh Tiwari)

3.4.1 Grants from government research funding bodies

1. Swedish Research Council, "Intelligent nanobioreactors for auto-switchable bio-catalysis", 2012-2015. 4 m SEK (main-applicant Anthony P.F. Turner, co-applicant: Ashutosh Tiwari)

2. IGEN grant, "Auto-switchable aptasensors for the early stage diagnosis of liver cancer", 2012-2014. 800 k SEK (main-applicant Anthony P.F. Turner, co-applicant: Ashutosh Tiwari and E. Wiechec)
?
3. LIST grant: "Wearable sensors with nanoengineered smart architecture", 2013. 350 k SEK (Main applicants: Ashutosh Tiwari and Martin Mak)

4. LIST grant: "Ultra-sensitive cardiac troponins immunosensors based on smart auto-switchable nano-architecture for the diagnosis of cardiac injury", 2012. 200 k SEK (main-applicant Ashutosh Tiwari, co-applicant: Anthony P.F. Turner and Ulf Dahlström)

3.4.2 Grants from the EU, foundations and other grants

1. EU : "Stimuli-responsive zipper-like nanobioreactors", 2011-2013. (Coordinator: Anthony P.F. Turner, Applicant Ashutosh Tiwari)

2. COST Action: "DNA aptamers for electrochemical ethanolamine analysis", 2011 (main-applicant: Anthony P.F. Turner, co-applicant: Ashutosh Tiwari)

3. JSPS, Japan : A highly sensitive and reproducible nanobioreactor for the artificial kidney device", 2012. (main-applicant Ashutosh Tiwari, host-applicant: Hisatoshi Kobayashi)
?
4. JSPS, Japan : "Self-assembled zipper nanobioreactors with selective reversed biosensor responses", 2009-2011. (main-applicant Ashutosh Tiwari, host-applicant: Hisatoshi Kobayashi)

5. Swedish Institute (SI): "Biopolymeric metals and functionalized graphene nanocomposites based DNA biosensors for cancer diagnosis", 2009. (main-applicant Ashutosh Tiwari, host-applicant: Bo Mattiasson)

3.5 Active participation in national and international conferences during the past five years. Name the kind of activity, e.g. plenum lectures, invited lectures, chairmanship, session organising etc.

International conferences-

1. Chair and Plenary Speaker, Advanced Materials World Congress (AMWC 2015), Stockholm, Sweden, 23-26 August, 2015.

2. Chair and Invited Speaker, International Conference on Smart Materials and Interfaces, 26-28 August 2014, Bangkok, Thailand.

3. Chair and Plenary Speaker, Indian Materials World Congress (IMC 2014), Allahabad, India, 08-11 December, 2014.

4. Session Chair and Speaker, Biosensors World Congress, Melbourne, Australia, 27-30 May 2014.

5. Member in Scientific Committee, The 2014 International Conference on Chemical Engineering and Materials Science, March 15-17, 2014, Venice, Italy.

6. Member in Conference Committee, MATERIALS '14, January 29-31, 2014, Cambridge, MA, USA

7. Advisory Board Member, International Conference on Structural and Physical Properties of Solids (SPPS 2013)" Focal Theme, "Smart Materials at Nano and Micro Scale", November 18th – 20th, 2013 at Indian School of Mines, Dhanbad, India.

8. Chair and Plenary Speaker, Advanced Materials World Congress (AMWC 2013), Cesme, Turkey, 16-19 September, 2013.

9. SSF Award for Invited Speaker as Swedish biomedical engineering expert in the binational workshop of SSF, Sweden-NRF, Korea, 11-13 June 2013, Korea.

10. Session Chair, Biosensors World Congress, Cancun, Mexico 15-18 May 2012.

11. Co-chair, 1st Taishan Academic Forum in Advanced Materials, University of Jinan (TAF-UJN), Jinan, China, 03-05 March 2012.

12. Chair and Plenary Speaker, 1st International Congress on Advanced Materials, University of Jinan, China, 13-16 May, 2011.

13. Chair and Plenary Speaker, International Conference on Nanoscience and Nanotechnology, University of Delhi, India, 18-21 December, 2011.

14. Chair and Invited Speaker, India-Japan seminar on Nanomaterials for diagnostics and therapeutics, MD University, Rohtak, India, October 2010.

15. Co-chair and Invited Speaker, India-Japan seminar on Nanomaterials for diagnostics and therapeutics, MD University, Rohtak, India, October 2010.

16. Chair and Invited Speaker, India-Japan seminar on higher education in rural India, SDD Degree College University, Meja, India, 25 October 2010.

17. Co-chair and Invited Speaker, Indo-Japan workshop on Nanophosphors in biomedicals, University of Allahabad, Allahabad, India, 23 October 2010.

18. Co-chair and Invited Speaker, Indo-Japan seminar on Nanomaterials for technology developments, Hindustan College of Science and Technology, Mathura, India, 28 October 2010.

19. Chair, Track 3-1: Novel and Safe Biomaterial for Healthcare and Medicine, BIT's Annual World Congress of Industrial Biotechnology (ibio-2010), Dalian, China, 25-27 July, 2010.

20. Co-chair and Invited Speaker, Indo-Japan-South Africa Seminar on Nanomaterials, University of Allahabad, University of Allahabad, Allahabad, India, 16 December 2009.

National conferences-

1. Co-chair and Speaker, Sweden-Japan Seminar on Nanaomaterials and Nanotechnology, Linkoping University, 11-12 September, 2012.

3.5.1 National and international awards

International awards

1. Advanced Materials Medal, Advanced Materials World Congress (AMWC 2013), Cesme, Turkey, 16-19 September, 2013.

2. The Nano Award by Vinova Bhave Research Institute during ICNANO on 19th Dec. 2011.

3. Innovation in Materials Science Award and Medal-2011 during Chemistry for Mankind: Innovative Ideas in Life Sciences, February 9-10, 2011.

3.5.2 Academy memberships etc.

1. Member, Marie Curie Fellows Association, European Union
2. Secretary-General & Life Member, International Association of Advanced Materials
3. Member, COST Action 'Bioinspired nanotechnologies', European Union
4. Member, Institute of Physics, UK
5. Member, FET Graphene Flagship, European Union
6. Member, American Chemical Society, USA.
7. Member, Japanese Society of Polymer, Japan.
8. Life Member, Indian Science Congress Association, India.
9. Founder Member, VBRI, India.
10. Member, American Nano Society, USA.
11. Member, Indian Chemical Society, India.
12. Member, Material Research Society of India, India.
13. Member, Sensor Society of Indian, India.
14. Member, JSPS Alumni Association of Sweden.

3.5.3 Editorial/advisory board scientific journals

1. Editor-In-Chief, Advanced Materials Letters.

2. Editor-In-Chief, Advanced Materials Reviews.

3. Editorial Board Member, Journal of Materials

4. Editorial Board Member, eCanadian Journal of Technology and Scientific Management

3.5.4 Referee assignments for journals. Name the journals and average number of assignments per year

About 100 articles in average review every year, the list of major journals are as follows:

1. Advanced Materials Reviews
2. Review Chemical Society
3. Chemistry of Materials
4. Materials Chemistry Journals
5. Journal of American Chemical Society
6. Biosensors and Bioelectronics
7. Analytica Chimica Acta
8. Analytical Chemistry
9. Analyst
10. RSC Advances,
11. Cancer Chemotherapy and Pharmacology
12. Green Chemistry
13. Applied Organometallic Chemistry
14. Journal of Materials Chemistry B
15. Talanta

16. *Solid State Sciences*
17. *Micron*
18. *Electrochimica Acta*
19. *Polymer*
20. *Nuclear Inst. and Methods in Physics Research, B*
21. *International Journal of Pharmaceutics*
22. *Food Chemistry*
23. *New Journal of Chemistry*
24. *Sensors & Actuators: B. Chemical*
25. *Carbohydrate Polymers*
26. *Materials Research Bulletin*
27. *AIChE Journal*
28. *Journal of Physics and Chemistry of Solids*
29. *Chemistry Letters*
30. *Molecules*
31. *Industrial & Engineering Chemistry Research*
32. *Materials Chemistry and Physics*
33. *Synthetic Metals*
34. *Electroanalysis*
35. *International Journal of Polymer Science*
36. *Journal of Nanostructure in Chemistry*
37. *Journal of Applied Polymer Science*
38. *Journal of Inorganic and Organometallic Polymers and Material*
39. *Journal of Polymer Research*
40. *International Journal of Biological Macromolecules*
41. *Express Polymer Letters*
42. *International Journal of Biomaterials*
43. *Journal of Alloys and Compounds*
44. *Recent Patents on DNA & Gene Sequence*
45. *Biotechnology Advances*
46. *FIZIKA A & B*
47. *Journal of Medicinal Plants Research*
48. *Medical Devices: Evidence and Research*
49. *Journal of Electrical and Electronics Engineering Research*
50. *Toxicology Mechanisms and Methods*
51. *IACQER Journal*
52. *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*
53. *Science and Technology of Advanced Materials*
54. *International Journal of the Physical Sciences*
55. *Advanced Materials Letters*
56. *Sensor*
57. *Australian Journal of Chemistry*
58. *African Journal of Pure and Applied Chemistry*
59. *Journal of Bioinformatics and Sequence Analysis*
60. *Journal of Sulfur Chemistry*
61. *Polymers for Advanced Technologies*
62. *International Journal of Genetics and Molecular Biology*
63. *Process Biochemistry*
64. *Arabian Journal of Chemistry*
65. *Superlattices and Microstructures*
66. *Iranian Polymer Journal*
67. *Journal of Colloidal and Interface Science*
68. *Journal of Thermal Analysis and Calorimetry*
69. *Artificial Cells, Blood Substitutes, and Biotechnology: An International Journal*
70. *Colloids and Surfaces B: Biointerfaces*
71. *Journal of Molecular Structure*
72. *Ceramics International*
73. *Biochemical Engineering Journal*

74. Materials Characterization
75. Gold Bulletin
76. Macromolecular Materials and Engineering
77. Indian Journal of Engineering & Materials Sciences
78. Micro
79. Chemical Engineering Journal
80. Enzyme and Microbial Technology
81. Analytical Methods
82. Nuclear Inst. and Methods in Physics Research B
83. Current Pharmaceutical Analysis
84. Current Medicinal Chemistry
85. Materials Letters
86. Journal of Biomedical Nanotechnology
87. Journal of Nanoscience and Nanotechnology

3.5.5 Assignments as faculty examiner/member of examining committee

External member of the examination committee for

1. Zhao Qian, 24 September 2013, Royal Institute of Technology.
2. Tanveer Hussain, Fisik och Astronomi Doktorsexamen on 28 October 2013, Uppsala University.
3. Ramnath Lakshmanan, Bioteknologi Doktorsexamen on 08 November 2013, Royal Institute of Technology.

PhD thesis examiner-

1. PhD thesis entitled, Synthesis and characterisation of new organotin derivatives, University School of Basic and Applied Sciences, Guru Gobind indraprastha University, Delhi, India

2. PhD thesis entitled, Synthesis and characterisation of new organotin derivatives, University School of Basic and Applied Sciences, Guru Gobind indraprastha University, Delhi, India

3. PhD thesis entitled, Synthesis, characterisation and evaluation of epoxy/guar gum based polymer composites, Department of Applied Chemistry and Polymer Technology, Delhi College of Engineering, University of Delhi, Delhi, India

4. PhD thesis entitled, Phytochemical investigation of some Indian medicinal plants and their possible anti-hepatotoxic activity, Department of Chemistry, Motilal Nehru National Institute of Technology, Allahabad, India.

Master thesis examiner-

1. Master thesis entitled, 'Synthesis, characterization and properties of novel phosphorylated multiwalled carbon nanotubes/polyvinyl chloride nanocomposites, Department of Chemistry, University of Johannesburg, Johannesburg, South Africa

3.5.6 Assignments as external expert

1. European Cooperation in Science and Technology (COST), European Union
2. Heart Research, UK
3. National Science Center, Poland.
5. National Research Foundation (NRF) funding, South Africa.
6. Assessment of research proposal for the Claude Leon Foundation (CLF), South Africa.
7. University Grant Commission, India
8. Drinking Water and Sanitation Department, Govt. of Jharkhand, India

3.5.7 Patents

1. Manufacturing of a rapid glucose-responsive polyelectrolyte electrospun fibers-mat, Hisatoshi Kobayashi, Ashutosh Tiwari, Dohiko Terada, Chiaki Yoshikawa, Japanese patent, Patent number 5403520, Registration date 08 November 2013.

2. Semi-conducting biopolymer hybrid of a polyanionic biopolymer and a polythiazole and process thereof, Anjali M Rahatgaonkar, Ashutosh Tiwari and Ajay M Ghatole, filled patent at the Mumbai PO, India on 10th August, 2010, and application number 2255/MUM/2010.

3.6 Other scientific merits

1. Have been involved as one of founder member of world reputed 'Advanced Materials World Congress' and 'Indian Materials Congress'.

2. Have been invited as an expert, visiting professor and recipients of may fellowships

• Series Editor, Advanced Materials Book Series,John Wiley & Sons, Inc.
• Adjunct Director, Vinoba Bhave Research Institute, India October 2013.
• SSF Award to participate as Swedish biomedical engineering expert in the binational workshop of SSF, Sweden-NRF, Korea, 11-13 June 2013, Korea. (Appl. No.# KB13?0015)
• JSPS Bridge Fellow from Sweden, National Institute for Materials Science, Japan 2012-2013. (ID No. BR120503)
• NIMS guest researcher, National Institute for Materials Science, Japan from 03-28 July 2012.
• Foreign Scientist/Researcher, World Premier International Center for Materials Nanoarchitectonics, National Institute of Materials Science, Japan, 2011.
• Visiting Professor, University of Johannesburg, South Africa, 2011.
• Guest Professor, University of Jinan, China, 2011.
• Secretary-General, International Association of Advanced Materials, 2010 to till today.
• Marie Curie International Fellow, 7th Framework Program of the European Union, Number 254955, 2010.
• JSPS Fellow (ID No. P09607), Japan, 2009.
• Invited Professor, Department of Materials Science and Engineering, Jiangsu University, Zhenjiang, China, 2009.
• NIMS Researcher, National Institute of Materials Science (NIMS), Japan, 2009.
• SI Fellow, Swedish Institute (SI), Lund University, Sweden, 2009.
• Young Scientist, Department of Science and Technology (DST), Govt. of India, 2006.
• Travel Fellowship Award, Indian National Science Academy, 2006.
• Travel Fellowship Award, DST, India, 2006.
• Travel Fellowship Award, Council of Scientific and Industrial Research (CSIR), India, 2006.
• Research Associate CSIR, India, 2006.
• Senior Research Fellowship, India 2005.
• Junior Research Fellowship, India 2003.

3. Broad contacts and collaboration all over the world especially with Indian, Chinese and Japanese academia.

4. Good team-worker:
Collaborate with division leader, Prof. Anthony PF Turner, senior colleague Prof. Ingemar Lundström and other members.

Collaborate with Prof. May Griffith and Dr. Emilia Wiechec, Department of Clinical and Experimental Medicine at ITN, LiU.
Collaborate with Prof. R. Yakimova and Dr. M. Syväjarvi, Semiconductor Materials Division at IFM, LiU.
Collaborate with Prof. M. Borga, Centre for Medical Image Science and Visualization (CMIV), Department of Biomedical Engineering (IMT), LiU.

5. National scientific collaborations:
Luleå University of Technology
Karolinska Institutet
Uppsala University, Sweden
Royal Institute of Technology (KTH)

6. International scientific collaborations
National Institute for Materials Science, Japan
Potsdam Fraunhofer Institute of Biomedical Engineering, Gemany
Helmholtz-Centre for Environmental Research–UFZ, Germany
Department of Mechanical Engineering, University of Hawaii at Manoa, USA
DCR University of Science and Technology, India
University of Delhi, India
Institute of Science, India
Universite de Strasbourg (UdS), France
Indian Institute of Technology, Kanpur, India
Cedars-Sinai Medical Center, USA
Laboratori misti IEOS CNR/ Fondazione SDN, Italy.
Spanish Cancer Research Centre, Spain
Institut National de la Santé et de la Recherche Médicale, France
University of Kiel, Germany
IUAC, Delhi, India

4.0 Pedagogical merits

4.1 Description of own pedagogical work on the levels bachelor/master/doctor.
If the work has been extensive please limit the documentation to the most recent five years. Name:

- **University/ /higher education institution**
- **Scope and level of teaching**
- **Different forms and methods of teaching/examination**
- **Experience of IT-supported teaching**
- **International teaching experience/teaching in English**
- **Course coordinator/examiner**
- **Supervision of essays/doctoral theses**
  - **Name the main and associate supervisor, the name of the student, the title of the work, level, credits and year of degree**

Supervised one master thesis

Teaching and supervision at IFM, Linköping University

PhD course/education
1. Course coordinator and examiner of PhD Course (TFKE48), Bioengineered Nanomaterials: 7.5 Credits
URL: http://www.ifm.liu.se/edu/graduate/courses/Bioengineered-Nanomaterials.pdf

2. Course coordinator and examiner of PhD Course, Integrated Biomaterials for Medical Devices: 7.5 Credits

URL: https://www.ifm.liu.se/edu/graduate/courses/

Master education
3. Master Course, Biosensor Technology (TFTB34): 6 Credits
URL: http://www.ifm.liu.se/edu/coursescms/tftb34/index.xml

Undergraduate education
4. Teaching on the Nanomaterials for biosensors technology in the Undergraduate course, Introduktion till biosensorteknik: 6 Credits

Supervise/supervised student(s):
Supervising postdoc, visiting professors and scientists

1. Prof. Anis N. Nordin, 2013-till today
2. Dr. Hirak Patra, 2012-till today
3. Selva Kumar Subramanian, 2013--till today
4. Prof. Mohammad Kamyabi, 2011
5. Prof. Masoud Mehgardi, 2011 and 2012
6. Dr. Christine Reinemann, 2011
7. Dr. Aysu Yarman, 2011
8. Vishnu Revuri, 2013
9. Dr. Kiran Kumar Kovi, 2013
10. Preethi Seshadri, 2013
11. Dr. Suryyani Deb, 2012-2013
12. Dr. Yashpal Sharma, 2011

PhD students
Onur Parlak, 2012-till today
Shweta Thakur, 2013-till today

Supervised exchange PhD students
Leila Kashefi-Kheyrabadi, 2012-2013
Najmeh Karimian, 2012-2013
Roghayed Imani, 2012-2013
Sudheesh Shukla, 2011-2012

Post-graduate students
Yugal Agrawal, 2013-till today
Amineh Ghaderi, 2014-till today
Suresh Babu Kollipara, 2014-till today
Swapneel Ravindra Deshpande, 2011-2012
Nisar Ul Khaliq, 2011-2012
Aswathi Anto Antony, 2011-2012
Shalini Naidoo, 2011-2012

4.2 Pedagogical leadership

- **Leader assignments (e.g. director of studies etc.)**
- **Development/design of courses/programmes**
- **Evaluation assignments/steering committees/committee work linked to educational matters**

Design of PhD courses PhD

1. Bioengineered Nanomaterials: 7.5 Credits
URL: http://www.ifm.liu.se/edu/graduate/courses/Bioengineered-Nanomaterials.pdf

2. Integrated Biomaterials for Medical Devices: 7.5 Credits
URL: https://www.ifm.liu.se/edu/graduate/courses/

4.3 Pedagogical education and competence development

- **Teaching and learning in higher education (enclose copy of course certificate)**
- **Other pedagogical/didactic education on academic level**
- **Other education of relevance to the appointment**

Research Supervision, 4 ECTS credits

4.4 Pedagogical development work

- **Pedagogical/didactic conferences, seminars, publications in pedagogical journals etc**
- **Grants for pedagogical development work**

Pedagogical article published:
1. Supervision of doctoral student by public-private sectors partnership: A special focus on healthcare nanotechnology, Ashutosh Tiwari, Adv. Mat. Lett. 2013, 4(2), 106-107.

4.5 Production of study material for teaching

- **Production of books, compendia, laboratory guides, films etc.**
- **Production of IT-based material**

1. Series Editor of Advanced Materials, WILEY-Scrivener, USA, since 2013-14. URL: http://www.scrivenerpublishing.com/series.php?id=Advance%20Materials%20Series

2. Advanced Carbon Materials and Technology, Ashutosh Tiwari, S.K. Shukla (Eds.), WILEY-Scrivener Publishing LLC, USA, ISBN: 978-1-118-68623-2, 2014.

3. Advanced Energy Materials, Ed. Ashutosh Tiwari, WILEY-Scrivener Publishing LLC, USA, ISBN: 978-1-118-68629-4, 2014.

4. Advanced Sensor Materials, Ed. Ashutosh Tiwari, WILEY-Scrivener Publishing LLC, USA, ISBN: 978-1-118-77348-2, 2014.

5. Advanced Healthcare materials, Ed. Ashutosh Tiwari, WILEY-Scrivener Publishing LLC, USA, ISBN: 978-1-118-77359-8, 2014.

6. Biosensors Nanotechnology, Ed. Ashutosh Tiwari, WILEY-Scrivener Publishing LLC, USA, 2014.

7. Advanced Biomaterials and Biodevices, Ed. Ashutosh Tiwari, WILEY-Scrivener Publishing LLC, USA, 2014.

8. Biomaterials in Biosensors and Bioelectronics, Eds. Ashutosh Tiwari, Atul Tiwari, Smithers Rapra Technical Publications, UK, 2014.

9. Advanced Materials for Agriculture, Food and Environmental Safety, Ed. Ashutosh Tiwari, WILEY-Scrivener Publishing LLC, USA, ISBN: 978-1-118-77343-7, 2014.

10. Nanomaterials in Drug Delivery, Imaging and Tissue Engineering, Eds. Ashutosh Tiwari, Atul Tiwari, WILEY-Scrivener Publishing LLC, USA, ISBN 978-1-1182-9032-3, 2013.

11. Bioengineered Nanomaterials, Eds. Ashutosh Tiwari, Atul Tiwari, CRC Press, USA, ISBN 978-1-4665-8595-9, 2013.

12. Responsive Material Methods and Applications, Ed. Ashutosh Tiwari, WILEY-Scrivener Publishing LLC, USA, ISBN 978-1-1186-8622-5, 2013.

13. Intelligent Nanomaterials, Eds. Ashutosh Tiwari, Ajay K. Mishra, Hisatoshi Kobayashi, Anthony PF Turner, WILEY-Scrivener Publishing LLC, USA, ISBN 978-04-709387-99, 2012.

14. Biomedical Materials and Diagnostic Devices, Eds. Ashutosh Tiwari, Murugan Ramalingam, Hisatoshi Kobayashi, Anthony PF Turner, WILEY-Scrivener Publishing LLC, USA, ISBN 978-11-180301-41, 2012.

15. Integrated Biomaterials for Biomedical Technology, Eds. Murugan Ramalingam, Ashutosh Tiwari, Seeram Ramakrishna, and Hisatoshi Kobayashi, WILEY-Scrivener, USA, ISBN 978-1-1184-2385-1, 2012.

16. Integrated Biomaterials, Eds. Murugan Ramalingam, Ashutosh Tiwari, Seeram Ramakrishna, and Hisatoshi Kobayashi, VBRI Press, India, ISBN 978-81-920068-18, 2011.

17. Nanomaterials and Nanotechnology, Eds. Ashutosh Tiwari, P.D. Sahare, VBRI Press, India, ISBN 978-81-920068-33, 2011.

18. Smart polymeric materials for biomedical applications, Eds. Songjun Li, Ashutosh Tiwari, Mani Prabaharan, Nova Science Publishers, Inc., New York, USA, ISBN: 978-1-60876-192-0, 2010.

19. Polysaccharides: development, properties and applications, Ed. Ashutosh Tiwari, Nova Science Publishers, Inc., New York, USA, ISBN: 978-1-60876-544-7, 2010.

20. Recent Developments in Bio- Nanocomposites for Biomedical Applications, Ed. Ashutosh Tiwari, Nova Science Publishers, Inc., New York, USA, ISBN: 978-1-61761-008-0, 2010.

21. Smart Biomolecules in Medicine, Eds. Ajay K. Mishra, Ashutosh Tiwari, S.B. Mishra, Hisatoshi Kobayashi, VBRI Press, India, ISBN 978-81-920068-08, 2010.

4.6 Popular scientific production

1. Deoxyribonucleic acid imprinted biosensor technology, Ashutosh Tiwari, Songjun Li, Adv. Mat. Lett. 2010, 1(2), 85-85.
2. Molecularly imprinted sensors, Ashutosh Tiwari, Songjun Li, Adv. Mat. Lett. 2010, 1(3), 178-178.
3. Nanomedicine – bridging the gap between nanotechnology and medicine, Yi Ge, Ashutosh Tiwari, Songjun Li, Adv. Mat. Lett. 2011, 2(1), 1-2.
4. Frontiers in bio-nanocomposites, Ashutosh Tiwari, Adv. Mat. Lett. 2011, 2(6), 377-377.
5. Intelligent nanomaterials for prospective nanotechnology, Ashutosh Tiwari, Adv. Mat. Lett. 2012, 3(1), 1-1.
6. State-of-the-art of stimuli-responsive materials, Ashutosh Tiwari, Adv. Mat. Lett. 2013, 4(7), 507-507.

4.9 Other pedagogical merits, e.g.

- **In-job training**
- **Speeches at conferences**
- **Project management**
- **Personnel training**
- **Other merits**

In-job training:

Participated following courses and series seminars:

Presentation technique in English
English course for University teachers
Research and creativity
Patenting and licensing
series seminars for Junior Faculty
series seminars on supervision "After Work for supervisors at IFM spring 2013"
workshop "Science Writing and Publishing with Impact"

Speeches at International conferences:
1. COST Action Thematic Workshop, Scuola Superiore di Catania, Catania, Italy, April 28-30, 2014.
2. Advanced Materials Workshop, University of Delhi, India, 11-12 January 2014.
3. COST Thematic Workshop, Helmholtz Centre for Environmental Research – UFZ, Leipzig, Germany, 8-9, October 2013.
4. IIT Kanpur, India, 27 September 2013.
5. Advanced Materials World Congress, Cesme, Turkey, 16-19 September 2013.
6. CBMN - CNRS/Univ Bdx1, France, 11 July 2013.
7. COST Thematic Workshop, Comenius University Congress Center Druzba, Bratislava, Slovakia, 08-10 April 2013.
8. National Cardio Vascular Institute, Osaka, Japan, 19 December 2012.
9. 4th Potsdam Colloquium on Bioanalytics, IBMT, Potsdam, Germany, 07-08 November 2012.
10. Label-Free Technologies: Advances and Applications, Amsterdam, Netherland, 01-03 November 2012.
11. Sweden-India Nobel week, Sweden embassy, New Delhi, India 29 October 2012.
12. College of Pharmacy, Korea University, Korea, 18 October 2012.
13. BIOTRONICS2012 (International Conference on Biosensors, Biochips, and Bioelectronic Devices), GIST, Gwangju, South Korea, 17 October 2012.
14. Sweden-Japan Seminar on Nanomaterials and Nanotechnology (SJS-Nano), 10-11 September 2012, Linkoping University
15. Integrative Regenerative Medicine Center, Linkoping University, 10 January, 2012.
16. University of Johannesburg, South Africa, 25 Oct. 2011.
17. 1st International conference on Advanced Materials, 13-16 May 2011, Jinan, China.
18. DCR University of Science and Technology, Murthal, Hariyana, India, 31 March 2011.
19. International Conference on Chemistry for Mankind: Innovative Ideas in Life Sciences, Nagpur, India, 9-10 February 2011.
20. Delhi Technological University, Delhi, India, 8 Feb 2011.
21. Department of Polymer Science, Bhaskarachrya College of Applied Sciences, University of Delhi, Delhi, India, 1 Nov. 2010.
22. India-Japan seminar on Nanomaterials for diagnostics and therapeutics, Department of Biochemistry, MD University, Rohtak, India, 30 Oct. 2010.
23. Indo-Japan seminar on Nanomaterials for technology developments, Hindustan college of science and technology, Farah, India, 28 Oct. 2010.
24. NAC, University of Allahabad, Allahabad, India, 22 Oct. 2010.
25. BIT's Annual World Congress of Industrial Biotechnology (ibio-2010), Dalian, China, 25 July 2010.
26. Biosensors 2010: 20th Anniversary World Congress on Biosensors, Glasgow, UK, 26 May 2010.
27. Synergy of Nanomaterials for Newcomer Technology seminar at Nanophosphor center, University of Allahabad, Allahabad, India on Dec. 24th, 2009.
28. School of Materials Science and Engineering, Jiangsu University, Zhenjiang, China in 2nd Dec. 2009.
29. MANA special seminar at International Center for Materials Nanoarchitectonics, NIMS, Tsukuba, Japan on Nov. 2009.
30. DST Sponsored National Workshop on Enzyme immobilized Technology for Biosensors held at M.D. University Rohtak, Haryana, India on Sept. 2007.

Project management:
1. Have managed and are managing more than 6 projects.
2. Chair and Co-chair, National and International conferences.
3. Editor-in-chief of two international journals and book series editor on Advanced Materials.
4. Made Swedish and EU consortium on cancer theranostics nanomedicine.
5. Lead Smart materials and biodevices group at BBC, LiU & organize project meetings once a week.
6. Compose project reports.
Personnel training:
Participate International Scientific Clubs to improve public speech and leadership competence.

4.10 Own reflections regarding own pedagogical activities in short Use the factual basis stated above, and supplements if any, in a short reflection in a pedagogical context. The reflection shall contain a description of the applicant's perception of knowledge and basic pedagogical view, with concrete examples of how these have been practiced in the own pedagogical work, as well as examples of how the applicant's knowledge and the students' knowledge acquirement has developed.

Suppl. no. *13*

5.0 Other skills

6.0 Administrative merits and academic leadership

6.1 Administrative assignments

6.1.1 Leading of work and staff
1. Leading 6 projects.
2. Supervise two PhD students and two postdocs.
3. Chair weekly project meetings.
4. Chair division meetings when the division leader travels.
5. Chair and Co-chair, AMWC international conferences.
6. Editor-in-chief of two international journals; and book series editor on Advanced Materials, Wiley, USA.
7. Chair/Coordinator, Swedish and EU consortium on cancer theranostics nanomedicine.

6.1.3 Member of academic boards/committees
Member in PhD defense committee
Zhao Qian, 24 September 2013, Royal Institute of Technology; Tanveer Hussain, Fisik och Astronomi Doktorsexamen on 28 October 2013, Uppsala University; and Ramnath Lakshmanan, Bioteknologi Doktorsexamen on 08 November 2013, Royal Institute of Technology.

6.2.3 Other evaluations of Swedish and foreign research applications (number per year the most recent five years)
1. European Cooperation in Science and Technology (COST), European Union
2. Heart Research, UK
3. National Science Center, Poland.
4. National Research Foundation (NRF) funding, South Africa.
5. Claude Leon Foundation (CLF), South Africa.
6. University Grant Commission, India
7. Drinking Water and Sanitation Department, Govt. of Jharkhand, India

7.0 Merits from third stream activities and information about research

and development work

7.1 External contacts and external work

Jiangsu University, Zhenjiang, China
National Institute for Materials Science, Japan
Indian Institute of Technology, Kanpur, India
University of Jinan, China

7.1.1 Collaboration with commerce and industry

Graphensic AB

7.1.2 Other merits within the third stream mission

Popular science seminars:
National Cardio Vascular Institute, Osaka, Japan.
Korea University, Korea.
University of Johannesburg, South Africa.
Jinan University, China.
DCR University of Science and Technology, India.
University of Delhi, India.
Jiangsu University, Zhenjiang, China.
National Institute for Materials Science, Japan
Potsdam Fraunhofer Institute of Biomedical Engineering, Gemany
Helmholtz-Centre for Environmental Research–UFZ, Germany
Institute of Science, India
Indian Institute of Technology, Kanpur, India
IUAC, Delhi, India

1. MRI-visual order-disorder micellar nanostructures for smart cancer theranostics, **H.** K. Patra, N. U. Khaliq, T. Romu, E. Wiechec, M. Borga, A. P. F. Turner, **Ashutosh Tiwari*,** Advanced Healthcare Materials, 3, 526-535, **2014.** John Wiley & Sons, Inc.
2. On/off switchable zipper-like bioelectronics on a graphene interface, O. Parlak, A.P.F. Turner, **Ashutosh Tiwari*,** Advanced Materials, 26 (3), 482-486, **2014**. John Wiley & Sons, Inc.
3. Electrochemical evaluation of a protein-imprinted polymer receptor, Najmeh Karimian, Anthony P.F. Turner, **Ashutosh Tiwari***, Biosensors and Bioelectronics, 59, 160-165, **2014**. Elsevier Publication.
4. Ultrasensitive detection of human liver hepatocellular carci-noma (HepG2) cells using a label-free aptasensor, L. Kashefi-Kheyrabadi, M.A. Mehrgardi, E. Wiechec, A.P.F. Turner, **Ashutosh Tiwari***, Analytical Chemistry, DOI: 10.1021/ac500375p, **2014**. American Chemical Society.
5. An ultrasensitive molecularly-imprinted human cardiac troponin sensor, Najmeh Karimian, Mikhail Vagin, Mohammad Hossein Arbab Zavar, Mahmoud Chamsaz, Anthony P.F. Turner, **Ashutosh Tiwari*,** Biosensors and Bioelectronics, 50, 492–498, **2013**. Elsevier Publication.
6. Template-directed hierarchical self-assembly of graphene based hybrid structure for electrochemical biosensing, Onur Parlak, Atul Tiwari, Anthony PF Turner, **Ashutosh Tiwari***, Biosensors and Bioelectronics, 49, 53-62, **2013**. Elsevier Publication.
7. Detection of p53 gene point mutation using sequence-specific molecularly-imprinted PoPD electrode, **Ashutosh Tiwari***, Swapneel Deshpande, Hisatoshi Kobayashi, Anthony PF Turner, **Biosensors and Bioelectronics**, 35, 224-229, **2012**. Elsevier Publication.
8. 'On/off'-switchable catalysis by a smart enzyme-like imprinted polymer, Songjun Li, Yi Ge, **Ashutosh Tiwari**, Shenqi Wang, Anthony P.F. Turner, Sergey A. Piletsky. **Journal of Catalysis**, 278, 173-180, **2011**. Elsevier Publication.
9. A positively temperature-responsive nanoreactor, Songjun Li, Yi Ge, **Ashutosh Tiwari**, S. Cao, **Small**, 6, 2453-2459, **2010**. John Wiley & Sons, Inc.
10. Biodegradable hydrogels based on novel photopolymerizable guar gum-methacrylate macromonomers for *in situ* fabrication of tissue engineering scaffolds, **Ashutosh Tiwari,** Jamison J. Grailer, Srikanth Pilla, Douglas A. Steeber, Shaoqin Gong, **Acta Biomaterialia,** 5, 3441-3452, **2009.** Elsevier Publication.

聘　书

兹聘请 Dr. Ashutosh Tiwari 先生为我校客座教授，聘期三年。

THIS IS TO CERTIFY THAT DR. ASHUTOSH TIWARI HAS BEEN AWARDED HONORARY GUEST PROFESSOR OF UNIVERSITY OF JINAN , THE ENGAGEMENT PERIOD WILL BE 3 YEARS.

济南大学

UNIVERSITY OF JINAN

校长

PRESIDENT: CHENG XIN

二〇一一年四月十二日 (Apr.20,2011)

（济南大学聘字总第二三一号，No.234）

LINKÖPINGS UNIVERSITET

Förordnande och anställningsbevis

Dnr

Ashutosh Tiwari
Rydsvägen 124 B Lgh 1001
584 31 LINKÖPING

Institution/enhet **Institutionen för fysik, kemi och biologi**	
Personnummer **780415-1251**	Namn **Ashutosh Tiwari**
Gatuadress **Rydsvägen 124 B Lgh 1001**	Postadress **584 31 LINKÖPING**

Anställning som	**Universitetslektor**		Anst.omf. 100,00
Vid Linköpings universitet meddelas att gälla fr o m	**2014-04-01**	tillsvidare dock längst t o m **2015-03-31**	Tj titel (kod) UNLEKT
Månadslön (heltid)	**36800**		

Grund för tidsbegränsning **LAS 5§ 1p ALVA**
Anställningsvillkor **Anställningsvillkoren regleras i Villkorsavtal-T (avtal mellan Arbetsgivarverket och SACO) samt Villkorsavtal/Villkorsavtal-T för Linköpings universitet (lokalt avtal för Linköpings universitet).**
Övrigt **Förlängning av nuvrande anställning**

2014-03-24
På rektors vägnar

Randi Hellgren
HR-Direktör

Linköpings universitet SE-581 83 LINKÖPING Tel +46 13 281000	Original 2014-03-24	**O**

LINKÖPINGS UNIVERSITET

Förordnande och anställningsbevis

Dnr

Ashutosh Tiwari
Rydsvägen 124 B Lgh 1001
584 31 LINKÖPING

Institution/enhet **Institutionen för fysik, kemi och biologi**	
Personnummer **780415-1251**	Namn **Ashutosh Tiwari**
Gatuadress **Rydsvägen 124 B Lgh 1001**	Postadress **584 31 LINKÖPING**

Anställning som	**Universitetslektor**		Anst.omf. 100,00
Vid Linköpings universitet meddelas att gälla fr o m	**2013-04-01**	tillsvidare dock längst t o m **2014-03-31**	Tj titel (kod) UNLEKT
Månadslön (heltid)	**35800**		

Grund för tidsbegränsning **LAS 5§ 1p ALVA**
Anställningsvillkor **Anställningsvillkoren regleras i gällande ALFA-T avtal (Allmänt löne- och förmånsavtal mellan Arbetsgivarverket och SACO) samt LiU-ALFA (lokalt avtal för Linköpings universitet).**
Övrigt

2013-02-04
På rektors vägnar

Randi Hellgren
Personaldirektör

UNIVERSITY OF ALLAHABAD

Bachelor of Science

Enrolment No. M9410069 Roll No. 7165

This is to certify that Ashutosh Tiwari

Son/~~Daughter~~ of Sri/Smt. G.P. Tiwari

of Chaudhary Mahadeo Prasad Degree College

obtained the degree of Bachelor of Science in this University in the Examination of 1997; and that he/~~she~~ was placed in the First class.

The subjects in which he/~~she~~ was examined were:

B. Sc. Part I and B. Sc. Part II

1. Botany
2. Chemistry
3. Zoology

B. Sc. Part III

1. Botany
2. Chemistry

Vice-Chancellor.

University of Allahabad:

The 23rd May; 2000.

The 21st Feb; 2004

UNIVERSITY OF ALLAHABAD

Master of Science

Enrolment No. M9410069 Roll No. 576

This is to certify that Ashutosh Tiwari

Son/~~Daughter~~ of Sri Ganesh Prasad Tiwari

obtained the degree of Master of Science in this University in the Examination of 1999; in Chemistry (Organic); and that ~~he/she~~ was placed in the First class.

University of Allahabad:
The 4th May; ~~19~~2002
~~The~~ 17th Oct; 2003

Vice-Chancellor

UNIVERSITY OF ALLAHABAD

Doctor of Philosophy in Science

Enrolment No. M9420069.

This is to certify that Ashutosh Tewari

has been admitted to the degree of Doctor of Philosophy in Science in this University at the Convocation of 2005.

University of Allahabad:
The 18th Oct; 2006.
The 13th Nov; 2007.

Vice-Chancellor

LINKÖPINGS UNIVERSITET
TEKNISKA HÖGSKOLAN

Docentbevis

Tekniska högskolan vid Linköpings universitet
har beslutat att anta PhD

Ashutosh Tiwari

till docent i ämnet

tillämpad fysik

med inriktning mot biosensorer och bioelektronik

The Institute of Technology at Linköping University
has decided to award PhD Ashutosh Tiwari
the academic qualification of Docent in Applied Physics
with specialization in Biosensors and Bioelectronics

Linköping den 18 september 2013

Dekan

Docent är en akademisk utnämning som, utöver doktorsexamen, kräver dokumenterad självständig forskning, dokumenterad erfarenhet från undervisning på avancerad nivå och forskarnivå, samt handledning av studerande på forskarnivå.

Tekniska högskolans policy för antagning till docent återges i en handling med dnr LiU-2012-01651.

The Swedish academic qualification "Docent" requires, in addition to a PhD degree, a documented ability to conduct independent scientific work and a documented pedagogical competence in teaching at advanced and third level, and experience from supervising PhD students.

The policy of "Docent" at the Institute of Technology at Linköping University is stated in the document Dnr LiU-2012-01651 (in Swedish).

Beslut i ärendet (Dnr LiU-2013-00338):
Anställningsnämndens protokoll TAN 2013-11.

Linköpings universitet, Tekniska högskolan – Tekniska fakultetskansliet, S-581 83 Linköping, Sweden

<www.liu.se>

My mission is to harness the fundamental research activities and innovation at LiU to facilitate the creation of the next generation of biosensors, nanomedicine, theragnostic research, point-of-care devices and to support the national and worldwide development of the field of smart healthcare materials and diagnostic tools. The specific objectives of my research are:

Nanomedicine for 'smart' cancer theragnostics

The emerging field of cell-systematic evolution of ligands by exponential enrichment (cell-SELEX) technology using DNA or RNA oligonucleotide-based synthetic receptors offers a unique platform for imaging and selective targeting of aggressive cancers. In the line of research, we have recently developed label-free aptasensor for ultrasensitive detection of human liver hepatocellular carcinoma (HepG2) cells and likewise, pH-responsive order-disorder theragnostic nanoarchitectures, which transduces pH input signal via tumour microenvironment into structural changes of the MRI-enabled core-shell networks, resulting in the triggered drug delivery and relative changes in MRI contrast. Further, we aim to functionalise these intelligent theranostic nanostructures with cell targeted-SELEX (i.e., aptamers) to various cancer for improved molecular and cellular targeting, and hence, enhanced specificity, efficacy, pharmacokinetics and safety. The creation of such order-disorder transition causes a *programmable* swelling/shrinking *core-shell network*, which is comparable to create a nano- zip and/or switch for accessing the core and shell, depending on the stimuli, i.e., pH, inflammation, etc. of tumour microenvironment. The physiological changes are capable of subverting the core-shell interactions in the nanomedicine; the cells can be freely accessible to such zipper-like assembly with aptamer as a recognition element. This combination enables a *"smart" cancer theragnostic nanomedicine.*

Stimuli-responsive biosensors and bioreactors

This research accelerates advancement of bioreactors and stimuli-responsive, intelligent nano-carriers for bioelectronics, drug delivery, imaging and tissue engineering. Integrated nanobiosytems are one of the emerging frontiers in materials science and biomedical studies. This area deals with induced conformational changes in biological structures at nano dimensions. Temperature, pH, magneto and photo switchable nanobioreactors are used to construct and evaluate a new generation of nanobioreactors. These find application in the fabrication of high-order diagnostic devices with switchable nano-bioelectronics and modulated biochemical processing within nano-systems. *Intelligent Nanobioreactors for Auto-switchable Bio-catalysis. Swedish Research (VR) Council (2012-16), 4m SEK* This project won in 2011, involves the design of novel auto-switchable nanobioreactors for the production of positively responding nano-surfaces by creating unique "zipper" nanoarchitectures. Model reactions, with applications in both analysis (e.g. biosensors) and energy harvesting for *in vivo* biosensors are used as proof-of-principle platforms in the areas of bioanalysis and biocatalysis. The fundamental design behind the present strategy could make significant contributions to the advancement of both bio-catalysis and material science, leading to self-switching bio-catalysis utilising reusable, cost-effective and simply made materials.

Architectures for triggered biodevices

Over the past two years, we have focused on the development of on/off-bioreactors, which switch their physicochemical properties in response to external stimuli. Switching of a reactor can be triggered by a slight induction of stimulus due to changes in pH, ionic

strength, temperature and light. A model triggered point-of-care biodevice has been developed using thermo-sensitive polymers, which undergo a phase transition at the lower critical solution temperature (LCST), where their behavior switches between hydrophobic and hydrophilic. LCST modulation can be achieved by receptor polymerisation with acceptor polymeric chains in order to produce a LCST close to physiological temperature. The reactors can also be programmed to absorb or release biofeeds with response to chemical or physical stimulus and applications in controllable *in vitro* and *in vivo* biomedical applications.

Artificial receptors and MIP sensors

The design and synthesis of artificial receptors, i.e. molecularly-imprinted receptors that are able to recognise and bind different target molecules with high affinity and specificity comparable to their biological counterparts, offers a number of advantages; notably greater long-term storage stability, potential re-usability, resistance to microbial spoilage and custom synthesis of selective receptors without the need to inoculate laboratory animals as well as facile integration with transducers. The design and synthesis of an artificial macromolecular receptor of troponin based on molecularly imprinting was achieved by electropolymerisation of the functional monomers in the presence of protein as target molecule. Electrochemical methods showed that this troponin receptor possesses remarkable recognition properties with affinities and specificities comparable with the natural receptor.

Designing of materials for biomedical applications: scaffold engineering

Hydrogels are appealing scaffold materials because they are structurally similar to the extracellular matrix of many tissues, can often be processed under relatively mild conditions, and may be delivered in a minimally invasive manner. The polymer scaffolds have many different functions in the field of biomedical. They are applied as space filling agents, as delivery vehicles for bioactive molecules, and as three-dimensional structures that organize cells and present stimuli to direct the formation of a desired tissue. My research success in scaffolds is devoted in the development of suitable materials that can address the critical physical, mass transport, and biological design variables inherent to this application.

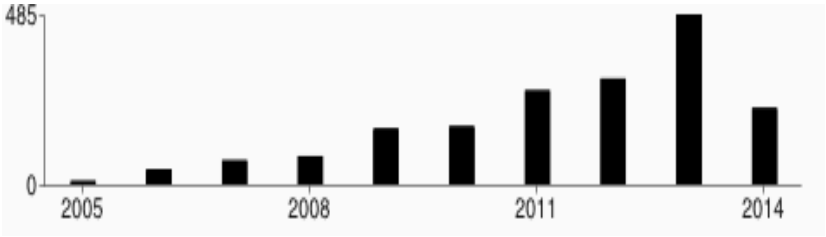
I am a goal oriented researcher in the area of next generation of biosensors, nanomedicine, theragnostic research, point-of-care devices and to support the national and worldwide development of the field of smart healthcare materials and diagnostic tools from 12-years. I am independent in developing ideas and writing projects, preparation of research and grant proposals. I am oriented with strong interpersonal, leadership, mentoring and organizational skills. I am a self-motivated person and display usually a willingness to involve in multi-disciplinary fields, and be able to work co-operatively in a team. I have strong interpersonal skills and ability to work effectively in a multi-cultural environment. In all my activities, I will be strived to foster an environment in which my colleagues within department and division as well as in LiU would be exchanged expertise or skills, and their use in the development of innovative new products, processes/services and implementation of industrial purposes. Since my present research focus is a multi-disciplinary one, good collaborations and team-working skills will be imperative. Therefore, I will continue my well established within LiU as well as national and international collaborators in the smart healthcare materials and their biomedical applications.

I am working on the intelligent nanobioreactors for auto-switchable bio-catalysis financed by Swedish Research Council in the collaboration with Prof. Anthony P.F. Turner. This project will be finished at the end in 2015. Whereas projects on level free sensors for the early stage diagnosis of diseases, wearable sensors with nanoengineered smart architecture, biological sensing to understand living systems, but also finds practical application in medicine, drug discovery, process control, real-time disease monitoring, defence and personal security will be perused. Moreover, a deeper understanding of the bio/electronic interface leads us towards new horizons in areas such as bionics, *in vivo* power generation and biocomputing. Advances in telecommunications, expert systems and distributed diagnostics prompt us to question the current ways, I will further target to deliver new paradigms of healthcare in R&D and production of robust biosensors. Personalisation of everything from medicine to environmental control gives new impetus to consumer choice and ownership of information, and will inevitably generate new payment structures and business models. Wearable, mobile and integrated sensors are becoming common place, but most current products have taken the easy path of incorporating physical biosensors for parameters such as temperature, pressure, orientation or position. There is a glaring absence of suitably robust and convenient sensors for body chemistries and herein lies the real opportunities for progress. This study orientation will examine some of the emerging technologies that are fuelling scientific discovery and underpinning new products to enhance the length and quality of our lives.

A new emerging field that combines nanoscale materials and biosensor technology is receiving recently increased attentions. Nanostructures have been used to achieve direct wiring of biosensing elements to electrode surfaces, to promote bio-reactions, to impose nanobarcodes on biomaterials, and to amplify the signal from bio-recognition events. Nanomaterials based biosensors have found wide spread applications in the environmental and medical applications for their sensitivity, specificity, rapidity, simplicity, and cost-effectiveness. My research objectives will keep the orientation of the most focus aspects of environmental friendly nanomaterials and nanotechnology for example, stimuli-responsive nano-systems engineering to industries and end users,

particularly those involved in the material and bio-catalysis sectors for solving real practical environmental problems connecting the development of innovative bioanalytical methods, as support tool to the interpretation of processes. Further, my research will be targeted particularly challenges posed to modern society by key emerging medical issues so-called trace and/or new emergent medical diagnostic tools. These objectives will also be included the development, testing and validation of advanced methodologies and biomedical indicators related to research needs arising from recent and envisaged medical devices. Again, focus will be extended with smart nanometer-scale biological integration systems, viz. drug delivery and imaging applications, cf., establish mechanisms of nanostructure assembly to build-up sustainable devices for biomedical, environmental risk assessment, designing of ultra-sensitive sensors, tools and systems for the analysis. I am interested in studying also on these topics if I will have enough manpower. At the end, my mission is to harness the fundamental research activities and innovation at LiU to facilitate the creation of the next generation of biosensors, nanomedicine, theragnostic research, point-of-care devices and to support the national and worldwide development of the field of smart healthcare materials and diagnostic tools.

Database used for citation data = Google Scholar
h-index = 27, i10-index = 55



*Article published from PhD thesis.

PEER-REVIEWED RESEARCH ARTICLES

1. On/off switchable zipper-like bioelectronics on a graphene interface, O. Parlak, A.P.F. Turner, **Ashutosh Tiwari,** *Advanced Materials*, 26(3), 482-486, **2014**.
   Number of citations: 4

2. Electrochemical evaluation of a protein-imprinted polymer receptor, Najmeh Karimian, Anthony P.F. Turner and **Ashutosh Tiwari**, *Biosensors and Bioelectronics*, 59, 160-165, **2014**.
   Number of citations: 0

3. Two-dimensional gold-tungsten disulphide bio-interface for high-throughput electrocatalytic nanoreactors, Onur Parlak, Prethi Seshadri, Ingemar Lundström, Anthony P.F. Turner and **Ashutosh Tiwari**, *Advanced Materials Interfaces*, Accepted, **2014**.
   Number of citations: 0

4. Self-reporting micellar polymer nanostructures for optical urea biosensing, Sudheesh K. Shukla, Onur Parlak, Saroj. K. Shukla, Sachin Mishra, Anthony P. F. Turner, Ashutosh Tiwari, *Industrial and Engineering Chemistry Research***,** DOI: 10.1021/ie5012799, **2014.**
   Number of citations: 0

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   Number of citations: 0

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38. Novel biocompatible nano size ZnO encapsulated chitosan- polyvinyl alcohol nanocomposite for glucose sensing, S. K. Shukla, S. K. Shukla, **Ashutosh Tiwari**, Biosensors 2010: 20th Anniversary World Congress on Biosensors, 26-28 May **2010**, Glasgow, UK.

39. Fabrication of a dual mode actuation based on Chitosan/SiO_2/SWCNTs nanocomposite, S. Li, Y. Ge, A. P. F. Turner, **Ashutosh Tiwari**, Biosensors 2010: 20th Anniversary World Congress on Biosensors, 26-28 May **2010**, Glasgow, UK.

40. Synthesis of Chitosan-Quinoline Biocomposites for Solvent Extraction Applications, Mahesh K. Gaidhane, Anjali M. Rahatgaonkar, **Ashutosh Tiwari**, Rashmi Batra, presented in 2010 SAE World Congress held at Stanford University, CA, USA on 10th April **2010**.

41. Amperometric nitrate biosensor based on chitosan-*co*-polyaniline/SnO_2 nanocomposite electrode, **Ashutosh Tiwari,** Biosensors Congress at Shanghai International Convention Centre, Shanghai, China, **2008.**

42. Synthesis and electrical characterization of chitosan/SiO_2/multi-wall carbon nanotubes nanocomposite for dual mode actuation, **Ashutosh Tiwari,** Sanjay R. Dhakate and A. P. Mishra, Composites-2008, Gordon Research Conferences, USA, **2008**.

43. Actuation study in electroactive Biopolymer-*co*-poly(polythiazole)/multiwalled carbon nanotube composite thin film, **Ashutosh Tiwari**, Biopolymers: Gordon Research Conferences, , Salve Regina University, Newport-RI, United States, 6-13 August **2008**.

44. Electrical conducting surface modification of anionic biopolymer: redox polyionic materials for electrochemical sensors, **Ashutosh Tiwari,** 2nd International IUPAC Conference on Green Chemistry, Moscow-St. Petersburg, Russia, 14-20 September **2008**.

45. Synthesis and electrical characterization of thiazole based biopolymer hybrids, A. Rahatgaonkar, **Ashutosh Tiwari,** A. Ghatole, ICMAT 2007 Conference, Materials Research Society of Singapore, **Singapore**, July 1-6, **2007**.

46. Baker's yeast catalysed stereoselective reduction of γ-diketones in water-organic solvent system, A. Rahatgaonkar, N. Pathan, **Ashutosh Tiwari,** ICMAT 2007 Conference, Materials Research Society of Singapore, **Singapore**, July 1-6, **2007**.

47. Chitosan-*co*-polyaniline/$WO_3.nH_2O$ nanocomposites: green co-polymer composite for sensor applications, **Ashutosh Tiwari,** S. P. Singh, Conference on Biodegradable Polymers, Astria, **2007.**

48. Study on Electrical conducting biopolymer-poly(thiazole) copolymers, **Ashutosh Tiwari,** A. P. Mishra, Conference on Biodegradable Polymers, Astria, **2007.**

49. Microwave promoted hydrolysis of plant seed gums on Alumina support, V. Singh, **A. Tiwari,** P. Kumari, S. Tiwari, 1st International IUPAC Conference on Green-Sustainable Chemistry, Dresden, **Germany, 2006.**

50. Synthesis of water soluble biopolymer-WO_3 nanocomposites for sensor applications, **Ashutosh Tiwari,** S. P. Singh, 1st European Chemistry Congress, Budapest, **Hungary, 2006.**

51. Synthesis of biodegradable, water-soluble conducting biopolymers for sensor applications; **Ashutosh Tiwari,** S. P. Singh, Polymers for Advanced Applications, Stellenbosch, **South Africa, 20-23 Nov. 2006.**

52. Synthesis and electrical properties of chitosan-*g*-poly(aniline)/Fe_2O_3 nanocomposite, **Ashutosh Tiwari,** S. P. Singh, SPIE Smart Materials, Nano and Micro-Smart Systems, University of Adelaide, Adelaide, **Australia, 10-13 December 2006.**

53. *Cassia abreviata* poly(acrylamide) grafted seed gum for the Industries, V. Singh, **A. Tiwari,** Proc. 93rd Ind. Sc. Cong. Ass. Part III, pp 63, Hyderabad, **2006.**

54. Synthesis and Characterization of pyridine functionalized TbF_3 nanoparticles, A. A. Ansari, J. Kumar, N. Singh, **Ashutosh Tiwari,** A. F. Khan, S. P. singh, P77, National Seminar on Multifunctional Nanomaterials, Nanostructures and Applications, Delhi**, India, 2006.**

56. Synthesis and Characterization of Novel Saponified Guar-Graft-Poly(acrylonitrile)/Silica Nanocomposite Materials, V. Singh, **A. Tiwari,** S.

Pandey, S.K. Singh, R. Sanghi, P4, **National Seminar on Multifunctional Nanomaterials, Nanostructures and Applications, Delhi, India 2006.**

57. Polianiline-ZnO nanocomposite thin film for sensing applications, Ajeet Kausik, Jitendra Kumar, **Ashutosh Tiwari,** Sharif Ahmad, Vinay Gupta, S. P. Singh, P80, National Seminar on Multifunctional Nanomaterials, Nanostructures and Applications, Delhi, India **2006.**

独立行政法人 日本学術振興会

JAPAN SOCIETY FOR THE PROMOTION OF SCIENCE

8, Ichibancho, Chiyoda-ku, Tokyo 102-8472

(Award Letter)

JSPS / FF4 / 1
15 May 2012
ID No. BR120503

Dr. Ashutosh Tiwari

Biosensors and Bioelectronics Centre
IFM-Linkoping Universitet
581 83 LINKOPING, Sweden

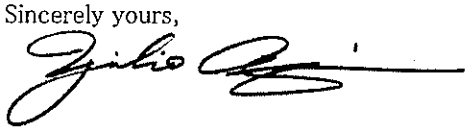
Dear Dr. Ashutosh Tiwari,

It is my pleasure to inform you that the Japan Society for the Promotion of Science (JSPS) has decided to award you a fellowship under the "JSPS BRIDGE Fellowship Program for FY2012 " to create, maintain and/or strengthen the researchers' network between your country and Japan for a period of 45 consecutive days together with Group Leader Hisatoshi Kobayashi, National Institute for Materials Science. Regarding the terms of fellowship, please see the attached "Certificate of Financial Support."

For this fellowship award to be valid, you must start your fellowship in Japan within the period of 1 July 2012 through 31 March 2013.

Please sign the "Notice of Acceptance" enclosed and send it to JSPS within 1 month of the date this letter was issued or 40 days prior to your departure, whichever comes first. After signing it, please submit its copy to your host researcher as soon as possible so that he/she can submit the "Itinerary" to JSPS accordingly.
In future correspondence with JSPS, please use your above-indicated ID number.

Sincerely yours,



Prof. Yuichiro Anzai
President

Enclose:
1. "Certificate of Financial Support"
2. Air Ticket Application Information
3. A Guide to the insurance Policy
4. An Extract from the JSPS Law
5. Notice of Acceptance (Form A)
6. Itinerary (Form 1)
7. Program Guidelines FY2012

cc: Group Leader Hisatoshi Kobayashi, National Institute for Materials Science
Prof. Dr. Jan Sedzik, Chair, JSPS Alumni Club in Sweden
Prof. Dr. Yoshiaki Fujii, Director, JSPS Stockholm Office

Research Executive Agency
Marie Curie Actions – International Fellowships
Acting Head of Unit

Brussels, 26 MAR 2010
REA P2/FM/BF/VW D(2010) 5954

TO WHOM IT MAY CONCERN

Subject: **Marie Curie Fellowship N° 254955 under the 7th Framework Programme of the European Community for research, technological development and demonstration activities (2007-2013)**

This is to certify that the European Union[1] intends to award *Dr. Ashutosh Tiwari* a Marie Curie International Incoming Fellowship under the 7th Framework Programme of the European Union with the following acronym *Smart* and number *254955*.

Subject to the end of internal procedures and to the signature of the grant agreement, the Research Executive Agency[2], acting under powers delegated by the Commission of the European Union, will grant CRANFIELD UNIVERSITY a financial contribution of € 181.103,20 for the researcher's living, mobility, travel, research activities for the whole period. This fellowship will take place at CRANFIELD UNIVERSITY premises in Cranfield, Bedfordshire, in the United Kingdom, for a period of 24 months starting from 3rd May 2010.

As a consequence, CRANFIELD UNIVERSITY will recruit *Dr. Ashutosh Tiwari* under an employment contract or a fixed amount fellowship in accordance with the provisions of the grant agreement between CRANFIELD UNIVERSITY and the Research Executive Agency.

Therefore, the European Union supports the visa procedure filed by *Dr. Ashutosh Tiwari*. It would be highly appreciated if you would please grant the appropriate work permit to *Dr. Ashutosh Tiwari* for the whole period of the fellowship, in view of starting his fellowship on 3rd May 2010.

Yours sincerely,

Frank MARX

Research Executive Agency REA

[1] By the Lisbon Treaty, the Member States establish among themselves a EUROPEAN UNION, on which the Member States confer competences to attain objectives they have in common. In this sense the Treaty states that *"the Union shall replace and succeed the European Community"*.

[2] As per Commission Decisions of 14 December 2007 n°2008/46 and of 31 July 2008 the Research Executive Agency acts under power delegated by the Commission.

Agence exécutive pour la recherche, B-1049 Bruxelles / Uitvoerend Agentschap Onderzoek, B-1049 Brussel – Belgium.
Telephone: +32 22991111.
Office : COV2 19/70 Tel. Direct line : +32 22992388
Contact person : Brito.Ferreira@ec.europa.eu

独立行政法人 日本学術振興会

JAPAN SOCIETY FOR THE PROMOTION OF SCIENCE

6, Ichibancho, Chiyoda-ku, Tokyo 102-8471

(Award Letter)

JSPS/FF1/68
August 6, 2009
ID No.P 09607

Dr. Ashutosh TIWARI

3582 N Oakland Ave. Apt# 4
Shorewood, WI 53211
U.S.A.

RE: FY2009 JSPS Postdoctoral Fellowship for Foreign Researchers
Dear Dr. TIWARI:

I am pleased to inform you that the Japan Society for the Promotion of Science (JSPS) has decided to approve the application of Group Leader Hisatoshi KOBAYASHI, National Institute for Materials Science, and to award you a fellowship under the "FY2009 JSPS Postdoctoral Fellowship for Foreign Researchers" to conduct research in Japan under the leadership of your host researcher for a period of 24 consecutive months. Regarding the terms of the fellowship, please see the attached "Certificate of Financial Support."

For this Fellowship award to be valid, you must start your fellowship in Japan within the period of September 1, 2009 through November 30, 2009.

Please note that this award is valid only if you obtain your Ph.D. degree before your Fellowship commences. Following the guidance on the page E10 in the enclosed booklet "JSPS Program Guidelines", please send us a copy of your doctorate certificate by the mentioned deadline. Otherwise, your Fellowship will become invalid.

After reading the "Guidelines," if you agree to all of the conditions stipulated therein and decide to accept the Fellowship, please sign the "Notice of Agreement" and "Notice of Acceptance" [FormA-1, A-2] enclosed within the "Guidelines" and send it to JSPS via your host researcher.

In future correspondence with JSPS, please use your above-indicated ID number.

Sincerely yours,

Motoyuki Ono

Prof. Motoyuki Ono
President

Enclosures:
1. Certificate of Financial Support
2. *Program Guidelines (FY2009)*
3. Air Ticket Application Information
4. A Guide to the Insurance Policy
5. An Extract from the JSPS Law

cc: Group Leader Hisatoshi KOBAYASHI, National Institute for Materials Science

Stockholm June 3, 2009
00259/2009
210

Ashutosh Tiwari
3582N Oakland Ave, Apt# 4
53211 SHOREWOOD
USA

SWEDISH INSTITUTE SCHOLARSHIP

Dear Ashutosh Tiwari,

The Swedish Institute is pleased to inform you that you have been awarded a scholarship within the **Guest Scholarship Program** for a period of **18** month(s) (**September 1, 2009 - February 28, 2011**). You have been awarded the scholarship for studies/research work at **Lund University, Department of Biotechnology** Professor **Bo Mattiasson** as your supervisor/contact person.

Mailing address: SE-221 00 Box 124 221 00 Lund
Phone: +46 , E-mail: Bo.Mattiasson@biotek.lu.se

The scholarship offer is conditional upon return of the signed "Acceptance of scholarship" to si@si.se or fax number + 46 8 20 72 48 no later than June 15, 2009.

The scholarship will amount to **SEK 15 000** per month and one travel grant of SEK 10 000. If you terminate/interrupt your stay in Sweden, your scholarship payments will be cancelled accordingly.

The Swedish Institute provides all scholarship holders with the Swedish State Group Insurance and Personal Insurance (GIF) through Kammarkollegiet (Swedish Legal, Financial and Administrative Services Agency). The terms of the insurance are different depending on your citizenship.

Regarding the conditions and regulations governing the scholarship and the insurance, please see the enclosed "Regulations and practical advice".

We wish you welcome to Sweden!

Yours sincerely,

Niklas Dahlberg
Senior Program Officer
Department for Intercultural Relations
E-mail: niklas.dahlberg@si.se

Encls: 1. Acceptance of scholarship & Insurance Certificate
2. Regulations and practical advice
cc Professor Bo Mattiasson

Si.
Svenska institutet Swedish Institute Institut suédois Schwedisches Institut Instituto sueco
Slottsbacken 10, Box 7434, SE-103 91 Stockholm, Sweden Phone: +46 (0)8 453 78 00 Fax: +46 (0)8 20 72 48
e-mail: si@si.se www.si.se Postal Account: 955739-8 Bank Account: 5210-3892 VAT: SE202100496101

Innovation in Materials Science Award and Medal-2011 during International Conference on Chemistry for Mankind: Innovative Ideas in Life Sciences, February 9-10, 2011 under the auspices of Indian Society of Chemists & Biologists, American Chemical Society, Royal Society of Chemistry, IUPAC, European Federation of Medicinal Chemistry.

Ashutosh Tiwari is recipient of The Nano Award during VBRI annual award assembly on 19 December 2011 at Vice Regal Lodge, University of Delhi, India.

URL: http://link.springer.com/article/10.1007%2Fs13404-012-0047-8

Ashutosh Tiwari, Editor-in-Chief has been honoured with Advanced Materials Medal for his excellent contribution in the promotion of Advanced Materials Science and Technology on 19 September 2013.

Form 5-2

Official No.:
26人（受）第667号
2014/03/04

Approval of (Extension)・Shortening

To:
IFM-Linkopings universitet
Head,Biosensors and Bioelectronics Center
Professor Anthony FP Turner

The President of
National Institute for Materials Science

This is to approve the (extension)・shortening according to the application.

NOTES

1. Name: Ashutosh Tiwari ID = 7307

2. Accepting Group (NIMS): Biofunctional Materials group, Biofunctional material unit,
Nano-Life field, WPI Research center MANA
Hisatoshi KOBAYASHI 小林 尚俊

3. Research Theme: Study on advanced sensing technology targeted toward biological moieties

4. The new term: from 2014/04/01 to 2015/03/31
(The old tem: from 2013/04/01 to 2014/03/31)

UNIVERSITY OF SCIENCE

DEENBANDHU CHHOTU RAM

AND TECHNOLOGY, MURTHAL

2006

This is to certify that Dr. Ashutosh Tiwari of Linkoping University, Sweden has been designated as Honorary Guest Professor in the Department of Materials Science & Nanotechnology of Deenbandhu Chhotu Ram University of Science & Technology, Murthal — 131039 (Haryana, India).

REGISTRAR

VICE CHANCELLOR 31/12/12

DEENBANDHU CHHOTU RAM UNIVERSITY OF SCIENCE & TECHNOLOGY, MURTHAL – 131039 (HARYANA, INDIA)

聘书

兹聘请 Dr. Ashutosh Tiwari 先生为我校客座教授，聘期三年。

THIS IS TO CERTIFY THAT DR. ASHUTOSH TIWARI HAS BEEN AWARDED HONORARY GUEST PROFESSOR OF UNIVERSITY OF JINAN , THE ENGAGEMENT PERIOD WILL BE 3 YEARS.

济南大学

UNIVERSITY OF JINAN

校长

PRESIDENT: CHENG XIN

二〇一一年四月十二日 (Apr.20,2011)

（济南大学聘字总第二三一号，No.234）

聘书

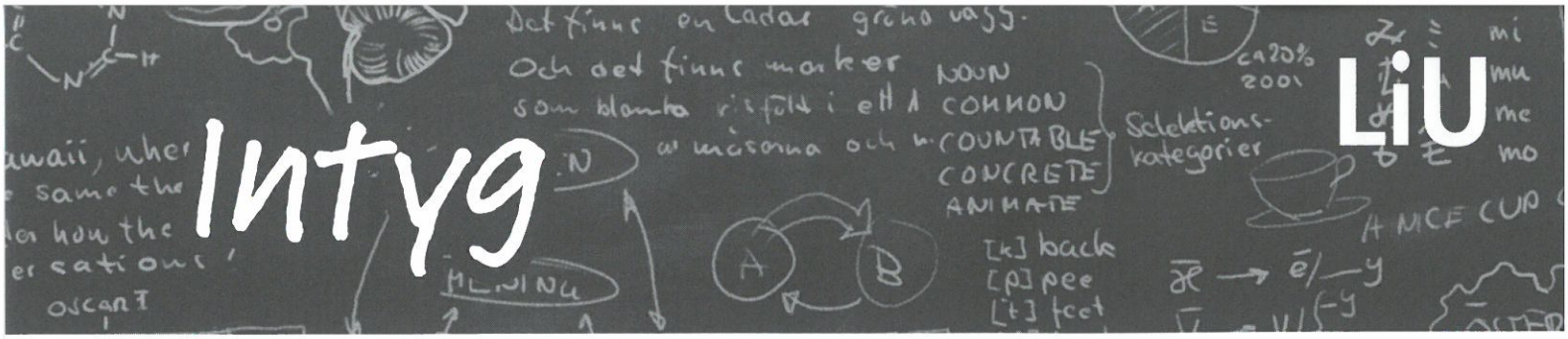
兹聘任 Dr. Ashutosh TIWARI

为江苏大学兼职教授。

校　　长：

二〇〇九年十二月一日

聘　　字：2009049



This is to certify that

Ashutosh Tiwari 780415-1251

has completed, with satisfactory results, the course Research Supervision, 4 ECTS credits.

The course Research supervision is part of a comprehensive course structure in three steps. Step 1, Learning, teaching and knowledge (LUK), is targeting junior faculty and comprises a focus on teaching and learning. Step 2, Design evaluation and organising for learning, is targeting course convenors with responsibility for course assessment. Step 3 a is targeting faculty with responsibility for research supervision, as a main supervisor or co-supervisor. This course is mandatory to be promoted as Associate Professor at all four faculties with Linköping University; The Institute of Technology, The Faculty of Arts and Sciences, The Faculty of Educational Sciences and the Faculty of Health Sciences. The course encompasses one part common for all faculties (2,5 ECTS credits) and one part that is specific for each faculty (1,5 ECTS credits).

The general aim of the common part of the course is collegial development of knowledge within the field research supervision. The point of departure is the experiential knowledge base of the individual participant. The experiential knowledge base is confronted with knowledge about research supervision based on research and development within the field. A more specific aim is to reflect on what is represented by good supervision; conditions for research supervision; the legitimacy of different knowledge bases; how the roles as supervisor and PhD candidate are construed; and how aspects of intersectionality and ethics are acknowledged.

The Institute of Technology, specific part: The local regulations for PhD-education, as well as the local values and cultures within the Faculty are presented. In the first part, the Higher Education Ordinance is studied, the work of the committee for postgraduate education and the docent committee and praxis within the Institute of Technology regarding PhD-education. In the second part, the participants identify the cultures, values and the modes of enacting the PhD-education within the faculty, with particular emphasis on the participants' own departments.

Requirements for passing the course are mandatory participation in all activities of the course, including a written reflection in the form of an essay on the topic of research supervision.

Linköpings universitet 14 March 2013

Anna Bjuremark
Courseleader

.....

I enjoy teaching integrated biomaterials, medical devices such as biosensors technology, bioengineered nanomaterials, nanomedicine, theragnostics, etc. tremendously and am committed to striving for excellence in all my teaching endeavors. My teaching experience can be traced back to when I was doing Master of Science in Organic Chemistry at the University of Allahabad, during which I worked as an under-graduate teacher instructing biomaterials to B.Sc. first year students. During my PhD at the University of Allahabad, I taught natural polymers to graduate students. After finishing PhD in chemistry, I worked as a temporary Lecturer at the same University for about a year.

From the very beginning of my teaching, I believed that good planning leads to good teaching. As a teacher, you must have a clear understanding of the topics you are teaching; you must have a clear idea on how to deliver the topics to the students. Only when you know the topic well, you will be able to explain it to students properly. While I was teaching, besides preparing for the class carefully, I also tried to be well organized in classes, both in verbal communication and in blackboard writing; this would certainly help the students to understand the material. My well-organized teaching style enabled me to become a good teacher in the university campus that was a great encouragement.

As a student and a teacher, I clearly understood that the teacher should be accessible to all students. No matter when I was holding practical classes or when I was teaching, I constantly reminded myself that the students are at different levels, so it is very important to make sure everyone follows the classes. This means, sometimes, I had to explain the same concept several times. I frequently told the students not be afraid of asking questions whenever they had one and once a while during my teaching, I stopped to ask for questions as I understood that not every student was bold enough to call them out. Besides holding regular office hours, I also allowed students to make individual appointments; this ensured that they could seek for help whenever they needed. Frequently, I received appreciative comments from my students about my teaching as well as my accessibility.

Looking forward, I would be interested in teaching the following graduate and postgraduate courses; healthcare materials, biomedical nanotechnology, biomedical smart devices and disease theragnostics. I would also enjoy teaching postgraduate courses in

biosensors technology and bioengineered nanomaterials and processes in therapy and diagnosis. Given my extensive research experience in the field of smart materials for point-of-care applications, I will be eager to integrate my research experience into the teaching whenever possible; this approach would update the current scientific knowledge of the students.

Here I provide brief descriptions of the new courses that would be useful for biomedical engineering students.

1. Healthcare materials: This course provides an overview of basic principles of biomaterials and the latest developments. Recently, introduced smart materials (functional blockcopolymers, biomedical, conductive, nanocomposites, electrooptical, non-linear optical polymers) and prospective applications in functional coatings, artificial implants, microelectronics, nanodevices, bio-mimetic technology, chemo/bio-sensors, nanomedicine, theragnostics and optical computing is a major area of my research.

2. Biomaterials: Presentation of the basic chemical and physical properties of biomaterials, including metals, ceramics, and polymers, as they are related to their manipulation by the engineer for incorporation into living systems. The role of microstructure properties is in the choice of biomaterials and design of artificial organs, implants, and prostheses.

3. Biomedical Nanotechnology: In this course, the integration of nanotechnology with biomedical research will be discussed. The course is broken up into four sections: (1) properties of materials in the nanometer-scale and their integration with biological systems, (2) fundamental mechanisms of nanostructure assembly for the build-up of biomedical devices, (3) tools and systems for the analysis and characterization of nanoscale materials, and (4) current biomedical applications of nanomaterials.