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Jeetender Chugh

Personal Details

Born on March 17th, 1980, in New Delhi, India, Indian National, Male, Married to Dr. Shilpy Sharma
Languages known: Hindi and English

Profile

- **Sep2008-till date**
Working as a Post-Doctoral Fellow with Prof. Hashim M. Al-Hashimi at LSA Biophysics, University of Michigan, Ann Arbor, MI, USA
- **Aug 2008-Sep2008**
Worked as a Visiting Fellow with Prof. R. V. Hosur at Department of Chemical Sciences, TIFR.

Education

- **2002-2008 (September 2008)**
Ph.D. (Chemistry) from Department of Chemical Sciences, Tata Institute of Fundamental Research (TIFR), Mumbai, India.

Thesis title : NMR in Proteomics: Investigations on Large Protein Assemblies and Method Developments
Supervisor : Prof. R. V. Hosur, FNA
- **2000-2002 (July 2002)**
M.Sc. (Chemistry) Organic Chemistry as specialization [with 67.1% (Aggregate)] from Hansraj College, University of Delhi, Delhi, India
- **1997-2000 (June 2000)**
B.Sc. (Hons) Chemistry [with 62.67% (Aggregate)] from Hansraj College, University of Delhi, Delhi, India. Subjects: Organic Chemistry, Inorganic Chemistry, Physical Chemistry, Physics, Maths, Environmental Chemistry, Entrepreneurship
- **1996-1997 (June 1997)**
Class XII from CBSE Board with 78.6% (Aggregate) Subjects: Physics, Chemistry, Maths, Biology, English
- **1994-1995 (June 1995)**
Class X from CBSE Board with 81.4% (Aggregate) Subjects: Science, Maths, English, Sanskrit, and Social Science

Publications

†Corresponding Author

Articles In Books

1. **(In Press)** Ramakrishna V Hosur[†] and **Jeetender Chugh** “*NMR of large protein assemblies*” **Future Directions in Nuclear Magnetic Resonance (INSA Platinum Jubilee Volume)**; Springer 2009, edited by C. L. Khetrpal and Anil Kumar

Articles in Journals

17. **(Manuscript Under Preparation)** Jeetender Chugh and Ramakrishna V Hosur[†]

16. **(Submitted)** Xiaoyan Sun*, **Jeetender Chugh*** and Hashim M Al-Hashimi[‡] “*Differential dynamics in apical loop of Kissing and Duplex dimers of SL-1 play important role in structural isomerization*”
15. **(Submitted)** Ramakrishna V Hosur[‡] and **Jeetender Chugh** “*NMR advances towards the structural characterization of large protein assemblies*”
14. **(In Press)** Dinesh Kumar*, **Jeetender Chugh*** and Ramakrishna V Hosur[‡] “*Generation of Ser/Thr check points in HN(C)N spectra*” **Journal of Chemical Sciences (Indian Academy of Sciences)**; 2009
*Authors contributed equally
13. Dinesh Kumar*, Jyoti R Misra*, Ashutosh Kumar, **Jeetender Chugh**, Shilpy Sharma and Ramakrishna V Hosur[‡] “*NMR Derived Solution Structure of SUMO from Drosophila melanogaster (dSmt3)*” **Proteins: Structure, Functions and Bioinformatics**; 2009, 75(4), 1046-1050
*Authors contributed equally
12. Dinesh Kumar, **Jeetender Chugh**, Shilpy Sharma and Ramakrishna V Hosur[‡] “*Conserved structural and dynamics features in the denatured states of drosophila SUMO, human SUMO and Ubiquitin proteins: implications to sequence-folding paradigm*” **Proteins: Structure, Function and Bioinformatics**; 2009, 76(2), 387-402
11. **Jeetender Chugh***, Shilpy Sharma* and Ramakrishna V Hosur[‡] “*Comparison of NMR structural and dynamics featured of urea and guanidine-denatured states of GED*” **Archives of Biochemistry and Biophysics**; 2009, 481(2), 169-176
*Authors contributed equally
10. **Jeetender Chugh***, Shilpy Sharma*, Dinesh Kumar and Ramakrishna V Hosur[‡] “*¹H, ¹⁵N, ¹³C resonance assignment of 9.7 M urea-denatured state of the GTPase effector domain (GED) of dynamin*” **Biomolecular NMR Assignments**; 2009, 3(1), 13-16
*Authors contributed equally
9. **Jeetender Chugh***, Shilpy Sharma* and Ramakrishna V Hosur[‡] “*Equilibrium Refolding Transitions driven by TFE and by Gdn-HCl dilution are similar in GED: Implications to Sequence Self-Association Paradigm*” **Biochemistry**; 2008, 47(49), 12945-12953
*Authors contributed equally
8. **Jeetender Chugh** and Ramakrishna V Hosur[‡] “*Spectroscopic labeling of A, S/T in the ¹H-¹⁵N HSQC spectrum of uniformly (¹⁵N-¹³C) labeled proteins*” **Journal of Magnetic Resonance**; 2008, 194(2), 289-294
7. **Jeetender Chugh***, Shilpy Sharma*, Dinesh Kumar, Jyoti R Misra and Ramakrishna V Hosur[‡] “*Effect of a single point mutation on the stability, residual structure and dynamics in the denatured state of GED: relevance to self-assembly*” **Biophysical Chemistry**; 2008, 137(1), 13-18
*Authors contributed equally
6. **Jeetender Chugh**, Shilpy Sharma and Ramakrishna V Hosur[‡] “*NMR Insights into a megadalton-sized Protein Self-Assembly*” **Protein Science (Accelerated Communication)**; 2008, 17(8), 1319-1325
5. **Jeetender Chugh**, Dinesh Kumar and Ramakrishna V Hosur[‡] “*Tuning the HNN Experiment: Generation of Serine-Threonine check points*” **Journal of Biomolecular NMR**; 2008, 40(2), 145-152
4. Dinesh Kumar, Ashutosh Kumar, Jyoti Ranjan Misra, **Jeetender Chugh**, Shilpy Sharma and Ramakrishna V Hosur[‡] “*¹H, ¹⁵N, ¹³C resonance assignments of folded and 8 M urea-denatured state of SUMO from Drosophila melanogaster*” **Biomolecular NMR Assignments**; 2008, 2(1), 13-15
3. **Jeetender Chugh**, Shilpy Sharma and Ramakrishna V Hosur[‡] “*Pockets of Short Range Transient Order and Topological Heterogeneity in Guanidine-Denatured State Ensemble of GED of Dynamin*” **Biochemistry**; 2007, 46(42), 11819-11832
2. **Jeetender Chugh**, Amarnath Chatterjee, Ashutosh Kumar, Ram K Mishra, Rohit Mittal and Ramakrishna V Hosur[‡] “*Structural Characterization of the Large Soluble Oligomers of the GTPase Effector Domain of Dynamin*” **FEBS Journal**; 2006, 273(2), 388-97
1. Amarnath Chatterjee, Ashutosh Kumar, **Jeetender Chugh**, Sudha Srivastava, Neel S Bhavesh and Ramakrishna V Hosur[‡] “*NMR of unfolded proteins*” **J. Chem. Sci. (Indian Academy of Sciences)**; 2005, 117(1), 3-21

- Well acquainted with BRUKER and VARIAN spectrometer handling and setting up solution-state NMR experiments.
- Pulse programming on BRUKER spectrometer.
- Expertise in NMR data processing using Felix and NMR Pipe, data analysis using Felix and CARA and structure determination software: CYANA.
- Trained in cloning using recombinant DNA technology, point mutations, expression and purification of GST- and His-tagged proteins.
- Trained in various biophysical techniques like Circular Dichroism, Fluorescence measurements, Dynamic Light Scattering, Capillary Electrophoresis, Differential Scanning Calorimetry, Isothermal Calorimetry, Size Exclusion Chromatography etc.
- Operating Systems used: Mac OSX, Windows, UNIX and Linux.

Awards & Recognitions

- Received a **Travel Award of \$300** from 46th ENC committee for attending 46th ENC conference held at Providence, Rhode Island, USA during April 10-15, 2005
- Received **50% Travel Grant** from CSIR for attending 46th ENC conference at Providence, Rhode Island, USA during April 10-15, 2005
- Received **50% Travel Grant** from DST for attending 46th ENC conference held at Providence, Rhode Island, USA during April 10-15, 2005
- Received support from NMRS, India for attending 46th ENC conference held at Providence, Rhode Island, USA during April 10-15, 2005
- Selected for **Travel Award of \$750** from the conference organizers for attending 15th ISMAR conference held at Ponte Vedra Beach, Florida, USA during Oct 24-28, 2004
- Selected for **50% Travel Grant** from CSIR for attending 15th ISMAR conference held at Ponte Vedra Beach, Florida, USA during Oct 24-28, 2004.
- Selected for INSA support for attending 15th ISMAR conference held at Ponte Vedra Beach, Florida, USA during Oct 24-28, 2004
- **Best poster award** at 10th NMRS conference held at Kolkata during Feb 17-20, 2004
- Received fellowship from Department of Atomic Energy, Govt. of India during August 2002 – July 2008 for pursuing PhD
- Received TIFR Alumni Association Scholarship for career development in 2002-03, 2003-04, 2004-05 supported by TIFR endowment fund.
- Qualified Graduate Aptitude Test in Engineering (GATE) 2002 in Chemical Sciences with 98.89 percentile and **All India Rank 29**.
- Qualified Council for Scientific and Industrial Research (CSIR) University Grants Commission (UGC) National Eligibility Test (NET) in Chemical Sciences of Dec 2001. **Ranked in Top 20 %**
- Received Jean and Ashit Ganguly Education Scholarship, University of Delhi, 2001
- Received Science Meritorious Award, University of Delhi, 2001
- Received Merit Scholarship from Ministry of Education during 1995-1996

Conferences and Meetings

- 50th Experimental Nuclear Magnetic Resonance Conference at Asilomer, Pacific Groove, CA during March 29-April 3, 2009. Poster presentation (*Visualizing NC mediated kissing to duplex transition in SL1 using NMR*)
- Special symposium on Advanced MR applications and 14th NMRS meeting held at INMAS, Delhi during January 16-19, 2008. Poster Presentations:
 1. **Dinesh Kumar**, Jeetender Chugh, Shilpy Sharma, Ashutosh Kumar, Jyoti Ranjan Misra, and Ramakrishna V hosur (*NMR investigations of structural and dynamic features of SUMO from Drosophila melanogaster*) (**Awarded Best Poster Prize**)
 2. Jeetender Chugh, Dinesh Kumar, **Shilpy Sharma**, Jyoti Ranjan Misra, and Ramakrishna V hosur (*Dynamics perturbations caused by single point mutations in the GED of Dynamin influence its association characteristics*)
 3. **Jeetender Chugh**, Dinesh Kumar, and Ramakrishna V Hosur (*Tuning the HNN experiment: Generation of Serine-Threonine Check Points*)
 4. **Jeetender Chugh**, Shilpy Sharma, and Ramakrishna V Hosur (*NMR insights into ~5 MDa assembly of GED of Dynamin*)
- Workshop on NMR: Principles and Applications held at TIFR, Mumbai from December 3-7, 2007.
- National Symposium on Biophysics: Trends in Biomedical Research, IBS Meeting held at INSA, New Delhi from February 13-15, 2007. Poster presentation (*NMR view of the topological preferences and fluctuations in the denatured state of the GTPase Effector Domain of Dynamin*)
- Current trends in Solid State NMR Methodology and Practice, 13th NMRS Meeting at NCL, Pune from February 5-8, 2007. Poster presentation (*Structural and dynamic heterogeneities in guanidine denatured state of GED: all beta propensities in an all alpha helical protein*)
- TIFR-Weizmann Interaction Meeting at TIFR, Mumbai from Nov 26-Dec 1, 2006.
- Workshop on Biomolecular NMR at TIFR, Mumbai from Jan 16-20, 2006.
- 12th National Magnetic Resonance Society Meeting (National Symposium on Advances in Magnetic Resonance and its Applications) at Gulmarg, J&K and RRL, Jammu from October 8-11, 2005. Oral presentation (*Structural Characterization of the large Soluble Oligomers of GTPase Effector Domain of Dynamin*)
- 46th Experimental Nuclear Magnetic Resonance Conference at Rhode Island Convention Center, Providence, RI, USA during April 10-15, 2005. Poster presentation (*Structural studies on GTPase Effector Domain of Dynamin*)
- International conference on Magnetic Resonance in Biological Systems at Shilp Kala Vedika, Hyderabad, India during Jan 16-21, 2005. Poster presentation (*GTPase Effector Domain of Dynamin: structure, function, relationships*)
- Abstract accepted for poster presentation at 15th ISMAR conference held at Ponte Vedra Beach, Florida, USA during Oct 24-28, 2004 (NOT ATTENDED)
- Abstract accepted for poster presentation at 45th ENC during April 18-23, 2004, held at Asilomer Conference Centre, Pacific Grove, CA (NOT ATTENDED)
- National symposium on NMR Drug Design and Bioinformatics organized by NMRS during Feb 17-20, 2004 at SINP, Kolkata. Poster presentation (*GTPase Effector Domain of Dynamin forms stable helical structures*), **received the BEST POSTER Award.**
- National symposium on Cellular and Molecular Biophysics organized by IBS during Jan 14-17, 2004 at NIMHANS, Bangalore. Poster presentation (*Biophysical studies on GTPase Effector Domain of Dynamin*)
- Solid state NMR workshop during Dec 22-26, 2003 at TIFR, Mumbai

Memberships

Lifetime membership of National Magnetic Resonance Society of India (NMRS, India)

References

<p>Prof. R. V. Hosur Department of Chemical Sciences Tata Institute of Fundamental Research 1, Homi Bhabha Road, Colaba, Mumbai-5 E-mail: hosur(AT)tifr.res.in Phone: +91-22-22782488 Fax: +91-22-22804610</p>	<p>Dr. P. K. Madhu Department of Chemical Sciences Tata Institute of Fundamental Research 1, Homi Bhabha Road, Colaba, Mumbai-5 E-mail: madhu(AT)tifr.res.in Phone: +91-22-22782874 Fax: +91-22-22804610</p>
<p>Prof. Anil Kumar Department of Physics and NMR Research Centre, Indian Institute of Science, Bangalore, India E-mail: anilnmr(AT)physics.iisc.ernet.in Phone: +91-80-22932724 Fax: +91-80-23602602</p>	<p>Prof. Hashim M Al-Hashimi 4028 Chemistry, 930 N. University, Department of Chemistry and Biophysics University of Michigan, Ann Arbor, USA E-mail: hashimi(AT)umich.edu Phone: 001-734-615-3361 Fax: 001-734-647-4865</p>