

## CURRICULUM VITAE

### Dolly Singg

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**Area of Specialization:** Organic Chemistry

#### Education:

Post-doctorate in Electrosynthesis, University of Alcalá, Alcalá de Henares, Madrid, Spain.  
Ph.D. in Synthetic Organic Chemistry, Guru Nanak Dev University (G.N.D.U.) Amritsar.  
M. Phil in Chemistry (4.17 G.P.A), G.N.D.U. Amritsar.  
M. Sc (Hons.School) Chemistry (4.23 G.P.A.), G.N.D.U. Amritsar.  
B. Sc. (Hons.School) Chemistry (4.23 G.P.A.). G.N.D.U. Amritsar.  
Gradual Aptitude Test for Engineering (G.A.T.E) Scoring 88.47 percentile, IIT, Delhi.

#### Work Experience:

**Present Status:** Lecturer, Department of Chemistry, G.N.D.U. Amritsar, Punjab, India.  
(2004-2005) Lecturer, Department of Food science and Technology, G.N.D.U., Amritsar.  
(2002-2003) Post- doctoral fellow at University of Alcalá, Alcalá de Henares, Madrid, Spain.  
(2001-2002) Lecturer, Department of Food Science and Technology G.N.D.U. Amritsar.  
(2000-2001) Lecturer, S.R. Govt. College Amritsar.  
(1999-2000) Lecturer, Chemistry department, G.N.D.U., Amritsar.  
(Mar1998-Dec1998) Research Assistant, Chemistry Department, G.N.D.U. Amritsar.

**Research Experience:** eight years

**Title of the Ph.D. Thesis:** Studies on nucleophile induced Transformations of Uracil Derivatives.

**Abstract of the Ph.D. Thesis:** Uracil/Thymine are the heterocyclic base constituents of RNA/DNA molecules. The modifications on these molecules at N-1, N-3, C-5 or C-4 positions provide molecules with therapeutic values. The development of synthetic methodology for modified uracil derivative is a key feature in the discovery of new lead molecules. 5-vinyluracil due to their conjugative and increased Michael acceptor abilities are expected to have higher activities. Thus, 5-Bromovinyldeoxyuridine (BVDU) is known to be one of the most active agent against the herpes simplex virus and is in clinical use. During PhD programme various synthetic methods for the synthesis of 5-vinyluracils have been developed. 5-Formyl, 3-dimethyl/1,3,6-trimethyl uracils with enamines derived from secondary amines on refluxing in CH<sub>3</sub>CN-TFA provide acylvinyluracils (50%-65%). Whereas the reactions of 5-formyluracils with enamines derived from primary amines provide annulation products only. By using this approach, 5-acylvinyluracils and active methylene compounds on heating without solvent provide 5(2,2-disubstitutedvinyl) uracil. 5-Formyluracils with carbanions derived from weak carbon acids under strongly basic conditions (LDA etc.) provide 5-substituted vinyluracils.

**Skills:**

- 1 Organic synthesis
- 2 Electrochemical Synthesis

**I have the experience of following Instruments:**

- 1 NMR 200 MHz & 300 MHz
- 2 IR Spectrophotometer
- 3 Gas Chromatography
- 4 Cyclic voltametry
- 5 Polarography
- 6 HPLC

**List of Publications:**

1. Harjit Singh, **Dolly**, Swapandeep Singh Chimni and Subodh Kumar. Acid catalyzed Enamine induced Transformations of 1,3-Dimethyl-5-Formyluracils. A unique Annulation Reaction With Enamines. Tetrahedron, 51,12775 (1995)
2. Harjit Singh, **Dolly**, Swapandeep Singh Chimni and Subodh Kumar. A Facile Single Pot Synthesis of 5-Vinyl-1, 3-dimethyluracil. Indian J. Chem.35B, 1123-24(1996).
3. T.S. Lobana, P.V.K. Bhatia and **Dolly**. Organophosphorus Reagents as Extractants. Part 7. Liquid-liquid extraction of Silver (I) and Mercury (II) using tertiary phosphine chalcogenides. - Indian J. Chem. 158-59(1996).
4. Harjit Singh, **Dolly**, Maninder Singh Hundal, Geeta Hundal, Palwinder Singh, Swapandeep Singh Chimni and Subodh Kumar Acid Catalyzed Reactions of 5-formyluracils With Enamines: A Facile Synthesis of 5-Acylvinyluracils. Tetrahedron, 54,7563-7572. (1998).
5. Harjit Singh, **Dolly**, Swapandeep Singh Chimni and Subodh Kumar Facile synthesis of 5-(substituted Vinyl) Uracil Derivatives through Knoevenagel and Stobbe type condensations of 5-Formyluracils. J.Chem. Res. (s) 1998, 2175-2185.
6. Harjit Singh, **Dolly**, Swapandeep Singh and Subodh Kumar Enamine Induced Ring Transformations of 6-Substituted-5-Formyl-1, 3-DimethylUracils. J.Chem.Res. (S) 352-353 (1998).
7. **Dolly**, B. Batanero, F.Barba. Cathodic Reduction of hydroxy carbonyl compound trichloroacetyl ester. Tetrahedron, 59, 9161-9165. (2003)
8. **Dolly**, B. Batanero, F.Barba. Synthesis of 1,2,3-Triazoles. Heterocycles, 63, 5, 1175-1180 (2004).

## References:

### 1. Dr. Harjit Singh

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Chemistry Department, G.N.D.U.,  
Amritsar-India.

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### 2. Dr. F. Barba

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Madrid-Spain.

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### 3. Dr. Subodh Kumar

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