



**UNIVERSITY INSTITUTE OF ENGINEERING & TECHNOLOGY**  
**PANJAB UNIVERSITY, CHANDIGARH – 160014**



1. **Name of the Faculty Member:** Dr. Anil Kumar

2. **Designation:** Assistant Professor

3. **Department:** Applied Sciences

4. **Date of Birth:** August 05, 1984

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6. **Specialization:** Organic Chemistry/Synthetic Organic Chemistry/Fluorine Chemistry

7. **Educational background:**

| Degree                | University        | Institute Name  | Year of Passing |
|-----------------------|-------------------|---|-----------------|
| B.Sc.<br>(Medical)    | Panjab University | SCD Govt. College, Ludhiana   | 2005            |
| M. Sc.<br>(Chemistry) | Panjab University | Sanmati Govt. College of Science Education<br>& Research, Jagraon, Ludhiana | 2007            |
| Ph.D.<br>(Chemistry)  | Panjab University | Department of Chemistry, Panjab University,<br>Chandigarh                   | 2015            |

8. **Professional Background**

| Designation            | Institute Name  | Duration                 |
|------------------------|---|--------------------------|
| Assistant<br>Professor | Department of Applied Science, UIET, Panjab<br>University, Chandigarh | Feb, 2013-<br>till date  |
| CSIR-SRF               | Department of Chemistry, Panjab University, Chandigarh                | July 2012-<br>Feb 2013   |
| CSIR-JRF               | Department of Chemistry, Panjab University, Chandigarh                | July 2010 -<br>June 2012 |
| UGC-Project<br>Fellow  | Department of Chemistry, Panjab University, Chandigarh                | Aug 2009 -<br>June 2010  |

9. **Award/Honours/Fellowships etc.**

- Qualified **CSIR/UGC National Eligibility Test (NET-LS)** in **Chemical Sciences** (**December 2008** and **June 2009**).
- Qualified **CSIR/UGC National Eligibility Test** in **Chemical Sciences** for Junior Research fellowship (**CSIR/UGC-JRF**) and Eligibility for Lectureship (**December 2009**).
- Qualified All India Graduate Aptitude Test (**GATE**) in Chemical Sciences (**All India Rank 2200**) in **2010**.
- Awarded with **Rajiv Gandhi National Fellowship** for the year **2010** by **University Grant Commission** (UGC), New Delhi.
- Awarded with **Gold Medal** at the **5<sup>th</sup> Chandigarh Science Congress** in **2011** for best oral presentation.
- **CSIR-SRF** in **July 2012**

10. **List of best publications**

- i. Friedel–Crafts Arylation of  $\alpha$ -Hydroxy Ketones: Synthesis of 1,2,2,2-Tetraarylethanones, **Anil Kumar**, Tej V. Singh, Sajesh P. Thomas and Paloth Venugopalan, *Eur. J. Org. Chem.* **2015**, 1226-1234 (ISSN: 1099-0690, Impact Factor 3.068).
- ii. Indium(III) bromide catalyzed direct azidation of  $\alpha$ -hydroxyketones using  $\text{TMSN}_3$ , **Anil Kumar**, Ramesh K. Sharma, Tej V. Singh, and Paloth Venugopalan, *Tetrahedron*, 69, **2013**, 10724-10732 (ISSN: 0040-4020, Impact Factor 2.803).
- iii. Microwave assisted fluorofunctionalization of phenyl substituted alkenes using selectfluor<sup>TM</sup>, **Anil Kumar**, Tej V. Singh, and Paloth Venugopalan, *Journal of Fluorine Chemistry*, 150, **2013**, 72-77 (ISSN: 0022-1139, Impact Factor 2.033).
- iv. EWG assisted nucleophilic fluorination using PPHF: a strategy for the synthesis of 1,2,2-triaryl-2-fluoroethanones, **Anil Kumar**, Anil K. Pal, Rishi D. Anand, Tej V. Singh, and Paloth Venugopalan, *Tetrahedron*, 67, **2011**, 8308-8313 (ISSN: 0040-4020, Impact Factor 3.219).

## 11. Highlights of Research work:

Research work mainly includes the introduction of fluorine atom into organic substrates by electrophilic ( $F^+$ ) and nucleophilic ( $F^-$ ) fluorination methods. The nucleophilic substitution reactions of  $\alpha$ -hydroxyketones have also been a part of our research work toward the development of newer methods to synthesize  $\alpha$ -functionalized ketones. The nucleophilic substitution of hydroxyl group in  $\alpha$ -hydroxyketones has been achieved by using triethylsilane (TESH), azidotrimethyl silane (TMSN<sub>3</sub>), arenes (Ar) and heteroarenes (HetAr) as nucleophiles. Besides nucleophilic functionalization, we are also aimed toward radical mediated  $\alpha$ -hetero atom functionalization of ketones to synthesize psychoactive drugs such as  $\alpha$ -amino ketones.