



## CERTIFICATE

This is to certify that Mr. **M. Shyam Sundar** has carried out his research work on Ph.D. Thesis entitled “**Synthesis and Study of Novel Atropisomeric Molecules**” under my guidance at Department of Chemistry, Faculty of Science, The Maharaja Sayajirao University of Baroda, Vadodara 390 002. He has eight publications in international journals of repute.

1. Synthesis and structural properties of oxa[5]helicene derivatives  
**M. Shyam Sundar**, Sahoo, S.; Bedekar, A. V. *Tetrahedron: Asymmetry*, 2016, 27, 777–781.
2. Synthesis of enantiomerically pure helicene-like mono 1,3-oxazines from 1,1'-binaphthyl-2,2',7-triol and study of their chiroptical properties  
**M. Shyam Sundar**, Bedekar, A. V. *RSC Adv.* 2016, 6, 46258-46269.
3. Synthesis and Study of 7,12,17-Trioxa[11]helicene  
**M. Shyam Sundar**, Bedekar, A. V. *Synfacts* 2016, 12, 150.
4. Synthesis and Study of 7,12,17-Trioxa[11]helicene  
**M. Shyam Sundar**, Bedekar, A. V. *Org. Lett.* 2015, 17, 5808-5811.
5. Synthesis of Biphenyl-Based Ligand: Application in Copper-Mediated Chemoselective Michael Reaction  
**M. Shyam Sundar**, Bedekar, A. V. *Synth. Commun.* 2014, 4, 3582-3593.
6. Synthesis of enantiomerically pure helicene like bis-oxazines from atropisomeric 7,7'-dihydroxy BINOL: preliminary measurements of the circularly polarized luminescence  
**M. Shyam Sundar**, Talele, H. R.; Mande, H. M.; Bedekar, A. V.; Tovar, C. R.; Muller, G. *Tetrahedron Lett.* 2014, 55, 1760-1764.
7. Expenditious synthesis of fluorinated styrylbenzenes and polyaromatic hydrocarbons  
Bedekar, A. V.; Chaudary, A. R.; **Shyam Sundar, M.**; Murali, R. *Tetrahedron Lett.* 2013, 54, 392-396.
8. An unexpected formation of benzoyl benzoin from benzil during the attempted Knoevenagel type condensation with dimethylmalonate (or malononitrile)  
**M. Shyam Sundar**, Bedekar, A. V. *Tetrahedron Lett.* 2012, 53, 2745-2747.

Prof. Ashutosh V Bedekar  
(Research Guide)  
Department of Chemistry,  
Faculty of Science,  
M. S. University of Baroda  
Vadodara 390 002

Faculty of Science, Vadodara, Gujarat, 390 002

Tel: +91-0265-2795552; Mobile: 9898530266; Email: [avbedekar@yahoo.co.in](mailto:avbedekar@yahoo.co.in); [www.ashutoshbedekar.com](http://www.ashutoshbedekar.com)