### **Curriculum Vitae**

# Dr. A. HARI KRISHNAN

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# **REER OBJECTIVE:**

Previous experience grasped in methodology development, design and synthesis of new drug molecules, provides strong knowledge in organic and medicinal chemistry. I am ready to take any type of project because; I would like to expand my professional horizons by seeking new challenges in Chemistry. In addition to my research skills, I have also developed presentation, team-working and organization skills.

### Laboratory Skills

- ✓ Experience in the handling of sensitive reagents and carryout reaction in inert atmosphere condition.
- ✓ Capability in glove box handling and schlenk line technique.
- ✓ Experience in isolation of compound (mg to gram scale) from mixture of compounds by column chromatography/ Flash chromatography.
- ✓ Structural Identification of complex organic molecules by <sup>1</sup>H, <sup>13</sup>C, <sup>31</sup>P, <sup>19</sup>F, 1D and 2D NMR spectral analysis.
- ✓ Synthesis of nano materials & characterization (DSC, X-ray).
- ✓ During my Doctoral work I had supervised postgraduate students (14 students) in their research projects, under the direction of the course instructor

#### Instrumentation/Software Skills

- ✓ Expertise in handling FT-IR, NMR (400 MHz), HRMS, HPLC (chiral and preparative), Polarimeter, GC-MS and flash chromatography.
- ✓ Experience in Chemdraw, Scifinder, Reaxys and basic computer handling.

#### Educational details

#### Ph.D Chemistry (Mar.2011-Oct.2017)

Pondicherry University, Puducherry, India

Thesis title:

"AlBr<sub>3</sub> Mediated C–C and C–Y (Y = S, O) Bond Forming Reactions: Synthesis of Small Molecules for Anti-Cancer Drug Discovery"

#### M.Phil. Chemistry (June 2009- Mar.2011)

Pondicherry University, Puducherry, India

#### Thesis title:

"C-C bond forming reaction: Addition of  $\pi$ -nucleophiles to pyridine-2- carboxaldehyde through Lewis acid activation"

Percentage of Marks: 82.15 %

# ✤ M.Sc. Chemistry (2007-2009)

Thiruvalluvar University, Muthurangam Govt. Arts College, Vellore, India Percentage of Marks: **76.95** %

## ✤ B.Sc. Chemistry (2003-2006)

Thiruvalluvar University, Muthurangam Govt. Arts College, Vellore, India Percentage of Marks: **84.96**%

### **Research Area Interests:**

- ✤ Synthetic organic chemistry
- Natural product Synthesis
- Medicinal chemistry
- ✤ Material chemistry

#### Research publications in journals

- Friedel-Crafts hydroxyalkylation through activation of carbonyl group using AlBr<sub>3</sub>: An easy access to pyridyl aryl / heteroaryl carbinols, Harikrishnan, A.; Selvakumar, J.; Gnanamani, E.; Suman, B.; Ramanathan, C. R. *New J. Chem.* 2013, *37*, 563-567.
- The cooperative effect of Lewis pairs in the Friedel–Crafts hydroxyalkylation reaction: a simple and effective route for the synthesis of (±)-carbinoxamine, Harikrishnan, A.; Sanjeevi J.; Ramanathan, C. R. Org. Biomol. Chem. 2015, 13, 3633-3647.
- Controlled, sequential approach to synthesize stereogenic methanes *via in situ* generated reactive intermediates, Harikrishnan, A.; Ramachandran G.; Ramanathan, C. R. *Chemistryselect*, 2016, 1, 3022-3027 (One of the top most accessed article in the month of August 2016).
- Purification and identification of 4-allylbenzene-1,2-diol: an antilisterial and biofilm preventing compound from the leaves of Piper betle L. var Pachaikodi" Kavitha S.; Harikrishnan, A.; Jeevaratnam, K. Nat. Prod. Research, (https://doi.org/10.1080/14786419.2017.1419239).
- Therapeutic molecules for fumigating inflammatory tumor environment, Harikrishnan, A.; Veena, V. Current Signal Transduction Therapy (under minor revision, review article).
- 6. Design, synthesis and structure activity relationship studies of pyridylarylcarbinols, **Harikrishnan, A**.; Ramanathan, C. R, Veena, V.; Sakthivel, N. *Manuscript to be submitted*.
- 7. Highly substituted methyl derivatives; A potential anticancer molecules **Harikrishnan, A.**; Ramanathan, C. R, Veena, V.; Sakthivel, N. *Manuscript to be submitted*.

#### Patents:

1. Pyridyl aryl carbinols: Design, synthesis and identification of promising drug leads, Ramanathan, C. R.; Harikrishnan, A.; Sakthivel, N.; Veena, V.; *Patent to be submitted*. 2. Dual, Controlled electrophilic activation of aldehydes and its application in drug design Ramanathan, C. R.; Harikrishnan, A.; Sakthivel, N.; Veena, V.; *Patent to be submitted*.

## Awards and Fellowships

- ✓ Qualified the national level CSIR-UGC-NET December 2009 examination (88<sup>th</sup> Rank) conducted by CSIR, Government of India, New Delhi.
- ✓ Qualified the national level CSIR-UGC-JRF June 2010 examination (316<sup>th</sup> Rank). A prestigious award and recipient of merit scholarship conducted by CSIR.
- ✓ CSIR-UGC Senior Research Fellowship Award (2013-2016). A prestigious award and recipient of merit scholarship through National Eligibility Test, conducted by CSIR, Govt. of India.
- ✓ First Rank in 2009-2010 M.Phil & Ph.D entrance examination conducted by Pondicherry University.
- ✓ **University rank** (10<sup>th</sup>) in B.Sc (Chemistry) at Thiruvalluvar University.
- ✓ Qualified the **JRF-written** examination conducted by IGCAR, Kalpakkam, India.
- ✓ Volunteer In-charge of conferences, seminars (2009-2016) in Department of Chemistry, Pondicherry University, Puducherry.
- Volunteer In-charge for conducting M.Sc-Chemistry practical classes (Integrated & Regular) in Department of Chemistry, Pondicherry University, Puducherry.

# Presentations in Conferences/ Seminars (Selective)

Oral	:	"Wealth from waste" RUSAC at C. Abdul Hakeem College, Vellore In
Presentation		2005.
Poster	:	Addition of $\pi$ -nucleophiles to aldehydes through Lewis acid activation
Presentation		Ramanathan. C. R.; Hari Krishnan, A. CRSI, conducted at Pondicherry
		University, India, Dec. 16-17, 2011
Poster	:	Pyridyl aryl methanols: A potential anti-cancer drug molecules,
presentation		Ramanathan, C. R.; Hari Krishnan, A. NSRAC, conducted at Pondicherry
		University, India, Mar. 22-23, 2013
Oral	:	"Novel approach towards synthesis of carbinols and ethers: Activation of
Presentation		Carbonyl groups (aldehydes and ketones) by simple Lewis acids-its potential
		activity against cancer cells" Ramanathan, C. R.; Hari Krishnan, A.
		CHEMZEAL, conducted at Pondicherry University, India, 18 <sup>th</sup> Feb. 2014.

# **Additional Skills**

National cadet crops (NCC), National service scheme (NSS), Participated and won district & state level essay competition, Poetry writing & awarded "Chenthamilaruvi" by tamilayya kalvikalagam.

# References:

Dr. C. R. Ramanathan Assistant Professor Department of Chemistry Pondicherry University Puducherry 605 014, India Contact. No: +91-94436-36437 E-mail: crrnath.che@pondiuni.edu.in

Dr. Ramasamy Murugan Professor & Head Department of Physics Pondicherry University Puducherry 605 014, India Contact. No: +91-94865-21397 E-mail:moranamurugan.phy@pondiuni.edu.in Dr. M. Bakthadoss Professor Department of Chemistry Pondicherry University Puducherry 605 014, India Contact. No: +91-94430-96180 E-mail: bakthadoss.che@pondiuni.edu.in

Dr. N. Sakthivel Professor Department of Biotechnology Pondicherry University Puducherry 605 014, India Contact. No: +91-94869-72061 E-mail: sakthivel.dbt@pondiuni.edu.in

# **Declaration**

I hereby declare that the information given above is true to the best of my knowledge and belief.

Date :

Place : Vellore

# A. HARI KRISHNAN

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