

## CURRICULUM VITAE

### Dr. Sasikumar Ramachandran

---

Studio 812, 180 Avenue Roger Salengro, 69100 Villeurbanne, Lyon, France.

Mobile: +33 783282566

E-mail: [rskmsc@gmail.com](mailto:rskmsc@gmail.com)



Born on 5<sup>th</sup> Jun 1985, Tamil Nadu, India. LinkedIn: <https://www.linkedin.com/in/sasikumar-r-429b88a7/>

---

### Research expertise

- Design, synthesis and characterization of polymers (conjugated polymers, PBz, PU, etc.)
- Polymer nanocomposites/hybrids (epoxy-amine-silica, cyanate ester-silica, etc.)
- Multi-step organic synthesis and organic functionalization of GO, CNT and silica nanoparticles
- Synthesis of catalysts for polymerization
- Polymer ink preparation and printing on chip by inkjet printing

### Postdoctoral experience

- Oct 2018-Apr 2019 *Postdoctoral researcher*, IMP, INSA-Lyon, France, “*Synthesis of fluoro-modified thermoplastic polyurethanes*”, Solvay and Saint-Gobain company’s project, Supervisor: Prof. Etienne Fleury and Dr. Françoise Mechin
- Apr 2016-Jul 2017 *Postdoctoral researcher*, PICM, Ecole Polytechnique and IFSTTAR, Paris, France, “*Synthesis of conjugated polymers and polymer functionalization of CNT for liquid phase sensor applications*”, Supervisor: Dr. Gael Zucchi and Dr. Berengere Lebental

### Education

- Jan 2013-Nov 2015 *Ph.D. in Polymer Chemistry*, Mentor: Prof. M. Alagar, Department of Chemical Engineering, Anna University, Chennai, India, Thesis: “*Studies on dielectric and thermal behaviors of polybenzoxazine based matrices and nanocomposites*”
- Jun 2007-Apr 2009 M.Sc. in Chemistry, MCC, University of Madras, India, First class 68.2%,  
Jun 2002-Apr 2005 B.Sc. in Chemistry, University of Madras, India, First class 74.5%

### Industrial experience

- Jun 2015-Feb 2016 Consultant, Anabond Limited, R&D Center, Chennai, India, “*Design, Synthesis and development of monomers, polymers and polymer composites and catalyst for polymerization*”
- Feb 2010-Dec 2012 Scientist, Connexios Life sciences private Limited, and Syngene International Limited (A Biocon Company), Bangalore, India, “*Multistep Organic synthesis*”

### Knowledge in instrumentations

Handling of NMR (Bruker-400MHz), LC-MS (Agilent’s), SEC, GC, HPLC, FTIR, TGA, DSC, DMA/Melt Rheology, Tensile and Tear strength tester, Vicat softening point tester, Taber tester, Goniometer, UV-Visible and Fluorescence spectroscopies, AAS, XRD, Optical microscope and Inkjet printer. Interpretation of SEM, TEM, XPS, AFM, and BDS analyses data.

## Publications

### Patents

1. Gaël Zucchi, Bérengère Lebental, Loic Loisel, **Sasikumar Ramachandran**, Alfredo Flores Gutierrez, Xin-Yang Wang, Mallesham Godumala, "Chemical sensors based on carbon nanotubes functionalized by conjugated polymers for analysis in aqueous medium", France Patent no. FR 1753131. DOC00029049. 2017, 42p. (Hal-01833998).
2. Alagar Muthukaruppan, **Sasikumar Ramachandran**, Ariraman Mathivathanan, Adhinarayanan Kaliappan, "Process for Simultaneous Production of Bis(Hydroxyphenyl)Methanes and Separation of 4,4'-Bis(Hydroxyphenyl)Methane", India patent application no. 5861/CHE/2015.

### Book Chapters

1. **Sasikumar, R**, Alagar, M, "Hybrid Polybenzoxazine Nanocomposites for Low-k Dielectrics" in "Advanced and Emerging Polybenzoxazine Science and Technology" Ishida, H.; Froimowicz, P. Eds. Elsevier, Amsterdam ISBN: 9780128041703 (2016).
2. **Sasikumar, R**, Alagar, M, "Porous Hybrid Materials with POSS" in "Polymer/POSS Nanocomposites and Hybrid Materials-Preparation, Properties, Applications" Krzysztof Pielichowski; Susheel Kalia Eds. Springer, ISBN 978-3-030-02327-0 (2018).

### Articles

1. **Sasikumar, R**, Ariraman, M & Alagar, M "Design of lamellar structured POSS/BPZ polybenzoxazine nanocomposites as a novel class of ultralow-k dielectric materials", *RSC Advances*, 2014, 4, 19127-19136.
2. Ariraman, M, **Sasikumar, R** & Alagar, M "Studies on FMCM-41 reinforced cyanate ester nanocomposites for low k applications", *RSC Advances*, 2014, 4, 57759-57767.
3. Ariraman, M, **Sasikumar, R** & Alagar, M "Design of Cyanate Ester/Azomethine/ZrO<sub>2</sub> Nanocomposites High-k Dielectric Materials by Single Step Sol-Gel Approach", *Journal of Applied Polymer Science*, 2014, 131, 41097.
4. **Sasikumar, R** & Alagar, M "Dielectric and thermal behaviors of POSS reinforced polyurethane based polybenzoxazine nanocomposites", *RSC Advances*, 2015, 5, 33008-33015.
5. **Sasikumar, R**, Padmanathan, N & Alagar, M "Design of hydrophobic polydimethylsiloxane and polybenzoxazine hybrids for interlayer low k dielectrics", *New Journal of Chemistry*, 2015, 39, 3995-4008.
6. **Sasikumar, R**, Ariraman, M & Alagar, M "Studies on dielectric properties of GO reinforced bisphenol-Z polybenzoxazine hybrids", *RSC Advances*, 2015, 5, 23787-23797.
7. **Sasikumar, R**, Ariraman, M & Alagar, M "Studies on MCM-41/PDMS based hybrid polybenzoxazine nanocomposites for interlayer low k dielectrics", *RSC Advances*, 2015, 5, 40798-40806.
8. Ariraman, M, **Sasikumar, R** & Alagar, M "Hybridization of PDMS based cyanate ester and DGEBA for radiation resistant and microelectronics applications", *RSC Advances*, 2015, 5, 63641-63649.
9. Ariraman, M, **Sasikumar, R** & Alagar, M "Shape memory effect on the formation of oxazoline and triazine rings of BCC/DGEBA copolymer", *RSC Advances*, 2015, 5, 69720-69727.
10. Ariraman, M, **Sasikumar, R** & Alagar, M "Cyanate Ester Tethered POSS/BACY Nano composites for Low-k Dielectrics", *Polymers for Advanced Technologies*, 2015, 27, 597-605.
11. Kurinchyselvan, S, **Sasikumar, R**, Ariraman, M, Gomathipriya, P & Alagar, M "Low dielectric behavior of FMCM-41 reinforced polyimide nanocomposites", *High Performance Polymers*, 2016, 28, 842-853.
12. Alagar, M, Vijayashree, K, Shankar, M, Abilash, M.A, Ariramana, M, & **Sasikumar, R**, "Copolymer of Allyl Terminated GO/ Methyl Methacrylate (MMA) Nanocomposites for Low k Application", *Adv. Cen. Sci.*, 2016, 1, 18-22.
13. Tamilselvi, R, Padmanathan, N, Mani Rahulana, K, Mohana Priya, P, **Sasikumar, R**, & Mandhakini, M, "Reduced Graphene Oxide (rGO)-Supported NiO, Co<sub>3</sub>O<sub>4</sub> and NiCo<sub>2</sub>O<sub>4</sub> Hybrid

Composite on Carbon Cloth (CC): Bi-functional Electrode/Catalyst for Energy Storage and Conversion Devices”, *Journal of Materials Science: Materials in Electronics*, 2018, 29, 4869-4880.

14. Xinyang Wang, Qiqiao Lin, **Sasikumar Ramachandran**, Gaëlle Pembouong, Robert B. Pansu, Bérengère Lebental, & Gaël Zucchi, “Optical chemosensors for transition metal and calcium ions in aqueous medium with polyfluorene derivatives: sensitivity, selectivity and regeneration”, *Sensors and Actuators B: Chemical*, 2019, 286, 521–532.

### Paper/poster presented in national/international symposia

1. **Sasikumar Ramachandran**, Gaël Zucchi, Bérengère Lebental, Laurence Bodelot, “Conjugated polymers for the measurement of water hardness and nitrates”, *PLATINE workshop2017*, Ecole Polytechnique, France.
2. **Sasikumar Ramachandran**, Gaël Zucchi, Bérengère Lebental, “Conjugated polymers for the measurement of water hardness”, *JCC2017*, University Grenoble Alpes, France.
3. Ariraman, M, **Sasikumar, R** & Alagar, M, “An investigation on low k properties of MCM-41 reinforced cyanate ester nanocomposites for electronic applications”, *APM 2015*, IISc, Bangalore, India.
4. **Sasikumar, R**, Ariraman, M & Alagar, M, “Investigation on low dielectric properties of lamellae structured polybenzoxazine hybrids for electronic applications”, *ICPPC2014*, Mahatma Gandhi University, Kottayam, India.
5. **Sasikumar, R**, Ariraman, M & Alagar, M, “Synthesis of BPZ/GO polybenzoxazine nanocomposites for low-k dielectrics”, *ICAN2014*, University of Madras, India.
6. Ariraman, M, **Sasikumar, R** & Alagar, M, “Preparation of nitrogen doped graphene-metal oxide composites for supercapacitor”, *ICAN2014*, University of Madras, India.

### References

Prof. M. Alagar (Rtd),  
Department of Chemical Engineering,  
Anna University,  
Chennai-600025, India.  
Email: [mkalagar@yahoo.com](mailto:mkalagar@yahoo.com)  
Phone: +919444216776

Dr. Françoise MECHIN,  
IMP, INSA-Lyon,  
University of Lyon UMR CNRS 5223,  
69621 Villeurbanne cedex, France.  
Email: [francoise.mechin@insa-lyon.fr](mailto:francoise.mechin@insa-lyon.fr)  
Phone: +33472438548

Prof. Etienne FLEURY,  
IMP, INSA-Lyon,  
University of Lyon UMR CNRS 5223,  
69621 Villeurbanne cedex, France.  
Email: [etienne.fleury@insa-lyon.fr](mailto:etienne.fleury@insa-lyon.fr)  
Phone: +33472436335

Dr. Gaël ZUCCHI,  
Ecole Polytechnique,  
PICM, UMR CNRS,  
91128 Palaiseau, France.  
Email: [gael.zucchi@polytechnique.edu](mailto:gael.zucchi@polytechnique.edu)  
Phone: +33169334386