**SREENIVAS KUMMARA**

Polymer Engineering & Science Laboraotry,

Metallurgical Engineering & Material Science Department,

Indian Institute of Technology Bombay, Powai. INDIA.

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**PERSONAL PROFILE**

Name : **Kummara Sreenivas**

Sex : Male

Date of Birth : 9th July 1986

Nationality : Indian

**EDUCATION**

**Oct 2012 - Mar 2016** **Doctor of Philosophy (Ph.D.)** **in Engineering,**

Toyota Technological Institute, Nagoya, JAPAN.

(Department of Future Industry-oriented Basic Science and Materials).

**Thesis title**: “Isotope Effect on the Isothermal Crystallization of Polyoxymethylene”.

**Supervisor**: **Professor Dr. Kohji Tashiro**

**Jun 2006 - Oct 2008 Master of Science (M.Sc.) in Polymer Science,**

Sri Krishnadevaraya University, Anantapur, A.P., INDIA **(80%)**

**Jun 2003 - Apr 2006 Bachelor of Science (B.Sc.) in Chemistry, Physics and Mathematics**

Sri Venkateswara University, Tirupati, A.P., INDIA **(67%)**

**PROFESSIOANL EXPERIENCE**

**Apr 2017- Present Post doctoral Fellow** in Metallurgical Engineering & Materials Science Department,

Indian Institute of Technology Bombay,

**Project:** Polyvinyl Alcohol (PVA) - Measoporous SiO2 composites, PVA and PA6 composites with conducting hybrid nanofillers.

**Supervisor:** **Professor Dr. Arup R. Bhattacharyya**

**Jan 2009- Sept 2012 Project Assistant** in Polymer Science and Engineering Division,

CSIR-National Chemical Laboratory, Pune, INDIA, (Project Leader/advisor: **Dr. K. Guruswamy**)

**Reliance funded project**: The influence of 1, 3:2, 4 - Di (3, 4-dimethylbenzylidene) Sorbitol (DMDBS) on the morphology and mechanical properties of polypropylene

**Jan 2008- July 2008 MSc Project;** Polymer Science and Engineering Division,

CSIR-National Chemical Laboratory, Pune, INDIA. (**Supervisor**: **Dr. C. Ramesh**)

**Thesis Title**: “Nanoparticles based nucleating agents for polypropylene: synthesis and characterization of nanosilica particles and their surface functionalization”.

**ACADEMIC HONORS AND FELLOWSHIPS**

* **Institute Postdoctoral Fellowship** by Indian Institute of Technology Bombay (2017-2018).
* **Scholarship for Doctoral Degree** by Toyota School Foundation, Japan (2012-2016).
* **2nd ranker** during M.Sc (2008), Sri Krishnadevaraya University, Andhra Pradesh, INDIA.

**PROFESSIONAL SKILLS**

* Skilled in cationic ring opening polymerization and functional end group transformation reaction of **polyoxymethylene** Deuterated / Hydrogenated random copolymers.
* Skilled in usage of Small Angle X-ray Scattering (X-ray diffractro meter Nanoviewer (Rigaku) and Bruker Nanostar), Wide Angle X-ray diffraction (2D) , powder X-ray diffraction (TTR), vibrational spectroscopy FTIR (including Kinetics), differential scanning calorimeter (DSC), thermo gravimetric analysis (TGA) and polarized optical microscopy (POM), rheology, especially *in-situ* measurements of crystallization behavior using **simultaneous measurements of SAXS/WAXD/FTIR** and synchrotron X-ray measurements.
* Shear induced crystallization and morphological change of semicrystalline polymers and gelation process measurements by using *in-situ* X-ray and rheological techniques.

**RESEACH INTEREST**

* Micro-structural evolution process during the melt and solvent induced crystallization process
* Structure – morphology – property of semicrystalline polymers and polymer/ inorganic hybrid-materials
* Flow induced crystallization
* Block copolymers and their self-assembly

**PROFESSIONAL AFFILIATION**

* Member of Society of Polymer Science, Japan.

**RESEARCH PUBLICATIONS**

1. **Kummara, S.;** Tashiro, K.“[*Isotope effect on the structural evolution process in the isothermal crystallization phenomenon of polyoxymethylene*](https://scholar.google.co.in/citations?view_op=view_citation&hl=en&user=JJepfFlv9uwC&sortby=pubdate&citation_for_view=JJepfFlv9uwC:Y0pCki6q_DkC)”.

***Polymer***, 2016, *90*, 76-88.

1. **.Kummara, S.;** Tashiro, K. “[*Phenomenological study of the isotope effect on the equilibrium melting point of polymer crystal*](https://scholar.google.co.in/citations?view_op=view_citation&hl=en&user=JJepfFlv9uwC&sortby=pubdate&citation_for_view=JJepfFlv9uwC:IjCSPb-OGe4C)”.

***Polymer***, 2015, *80*, 138-145.

1. **Kummara, S.;** Tashiro, K.; Monma, T.; Horita, K. “[*Isotope effect on the melt–isothermal crystallization of polyoxymethylene D/H random copolymers and D/H blend samples*](https://scholar.google.co.in/citations?view_op=view_citation&hl=en&user=JJepfFlv9uwC&sortby=pubdate&citation_for_view=JJepfFlv9uwC:Tyk-4Ss8FVUC)”.

***Macromolecules***, 2015, *48*, 8070-8081.

1. Tashiro, K.; **Kummara, S.;** Yamamoto, H.; Yoshioka, T.; Tahara, D.; Masunaga, H.; Ohta, N. “[*Study of Melt-Isothermal Crystallization Phenomenon of Crystalline Polymers by Utilizing a Simultaneous Measurement System of Synchrotron Wide-Angle and Small-Angle X-ray Scatterings and Transmission FTIR Spectra: Application to the Case of Polyoxymethylene*](https://scholar.google.com/scholar?oi=bibs&cluster=6820136988519276506&btnI=1&hl=en)”.

***SPring-8 Section A: Scientific Research Report,*** 2017*,**2013A1284 / BL40B2.*

1. Basupalli, B.; **Kummara, S.;** Kumaraswamy, G.; and Prasad, B. L. V. “*Ultrathin sheets of metal or metal sulfide from molecularly thin sheets of metal thiolates in solution*”.

***Chem. Mater***., 2014, *26*, 3436-3442.

1. **Sreenivas, K.;** Kumaraswamy, G. “[*Large amplitude oscillatory shear induces crystal chain orientation in velocity gradient direction*](https://scholar.google.co.in/citations?view_op=view_citation&hl=en&user=JJepfFlv9uwC&sortby=pubdate&citation_for_view=JJepfFlv9uwC:u-x6o8ySG0sC)”.

***ACS******Macro Lett***., 2013, *3*, 6-9.

1. Mallick, A.; Schön, E-M.; Panda, T.; **Sreenivas, K.;** Díaz, D. D.; Banerjee. R. “[*Fine-tuning the balance between crystallization and gelation and enhancement of CO2 uptake on functionalized calcium based MOFs and metallogels*](https://scholar.google.co.in/citations?view_op=view_citation&hl=en&user=JJepfFlv9uwC&sortby=pubdate&citation_for_view=JJepfFlv9uwC:qjMakFHDy7sC)”.

***J. Mater. Chem.,*** 2012, *22*, 14951-14963.

1. **Sreenivas, K.;** Kumaraswamy, G.; Basargekar, R. S. “[*Phase separation of DMDBS from iPP, and controlled crystalline orientation*](https://scholar.google.co.in/citations?view_op=view_citation&hl=en&user=JJepfFlv9uwC&sortby=pubdate&citation_for_view=JJepfFlv9uwC:u5HHmVD_uO8C)”.

***APS Meeting Abstract***, 2012, *1*, 49011.

1. **Sreenivas, K.;** Pol, H. V.; Kumaraswamy. G. “*The influence of DMDBS on the morphology and mechanical properties of polypropylene cast films*”. **(Highlighted by Linkam Scientific Instruments TST350, Published on Jan 8, 2013. Published in AZO materials on Jan 9, 2013 and in LabBulletin.)**

***Polym. Eng. Sci.,***2011, *51*, 2013-2023.

1. **Sreenivas, K.;** Basarhekar, R.; Kumaraswamy, G. “*Phase separation of DMDBS from PP: Effect of polymer molecular weight and tacticity*”.

***Macromolecule***s, 2011, *44*, 2358-2364.

1. Tashiro, K.; **Kummara, S.**; Sato, M. “*Isotope effect on the melt-isothermal crystallization process of polyethylene D/H random copolymers*”. **Manuscript in preparation**.

**Google Scholar Page** : <https://scholar.google.com/citations?user=JJepfFlv9uwC&hl=en>

**PUBLISHED CONTRIBUTION TO ACADEMIC CONFERENCES**

1. **Kummara, S**.; Tashiro, K. “*Scalling of melt-isothermal crystallization rate of polyoxymethylene by using a series of D/H random copolymers”.*

***Polymer Preprints****, Japan (SPSJ) 65(1)*, 2016.

1. **Kummara, S.;** Tashiro, K.; Monma, T.; Horita, K. *“Isotope effect on the isothermal crystallization behavior of polyoxymethylene D/H random copolymers”.*

***Polymer Preprints****, Japan (SPSJ) 64(2)*, 2015, 2G01

1. **Kummara, S.;** Tashiro, K.; Monma, T.; Horita, K. “*Vibrational spectra and morphologies of polyoxymethylene D/H random copolymers”.*

***Polymer Preprints,*** *Japan (SPSJ) 64(1)*, 2015.

1. **Kummara, S.;** Tashiro, K. “*Isotope effect on the melt-isothermal crystallization process of polyoxymethylene*”.

***Fiber Symposium of Toka*i**, 2014, *28*, 32-33.

1. **Kummara, S.;** Tashiro, K.; Monma, T.; Horita, K. **“***Hierarchical structural evolution of polyoxymethylene in the isothermal crystallization process from the melt: Study of an isotope effect on the melting and crystallization behaviors*”.

***Polymer* *Preprints****, Japan (SPSJ) 63(2)*, 2014, 5322-5323..

1. **Kummara, S.;** Tashiro, K.“*Hierarchical structural change of polyoxymethylene in the isothermal crystallization process from the melt”.*

***Polymer Preprints****, Japan (SPSJ) 63(1)*, 2014, 1313-1314.

1. **Kummara, S.;** Yoshioka, T.; Tahara, S.; Yamamoto, H.; Tashiro, K.; Ohta, N. “*Isothermal crystallization behavior of polyoxymethylene studied by the time-resolved FTIR, Synchrotron SAXS and WAXD simultaneous measurements*”.

***Fiber Symposium of Tokai***, 2013, *27*, 57-58.

1. Basupalli, B.; **Sreenivas, K**.; Kumaraswamy, G.; Prasad, B. L. V. “*Investigations on the structural details and thermal behaviour of Palladium octanethiolate*”.

***National Science Day Celebrations*** on February 28, 2011, at CSIR- National Chemical Laboratory, INDIA

1. **Sreenivas, K.**; Kumaraswamy, G*.* “*Phase separation of DMDBS from PP: Effect of polymer molecular weight and tacticity”***.**

***Pune-Mumbai Soft Matter IV***- Feb 2011, conducted by IISER, Pune.

1. **Sreenivas, K.;** Kumaraswamy, G. “*Unusual Orientation of PP crystallization under oscillatory shear”.*

***National Science Day celebrations*** on February 28, 2010, at CSIR- National Chemical Laboratory, INDIA.

1. **Sreenivas, K.;** Kumaraswamy, G. *“Orthogonal orientation of PP crystallized with oscillatory shear”.*

***Pune-Mumbai Soft Matter II*** - Dec 2009, conducted by National Chemical Laboratory, Pune.

1. Krishana, K. V.; **Sreenivas, K.;** VIjayamohan.; Ramesh, C. ***“****Synthesis and characterization of organo-functionalization of nanosilica particles”.*

***International Conference on Advances in Polymer Technology***-2008 (APT-2008) conducted by Dept. of PS&RT, CUSAT, INDIA.