

# PURUSHOTHAMAN NANDAGOPALAN



## PERSONAL DATA

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PLACE AND DATE OF BIRTH: Thanjavur, India | 23-03-1989  
HOME ADDRESS & NATIONALITY: Srinivasapuram, Thanjavur-613009, Tamil Nadu | India  
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## RESEARCH EXPERIENCE

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- MAR 2014- AUG 2018 | KOREA ADVANCED INSTITUTE OF SCIENCE AND TECHNOLOGY (KAIST), Daejeon, Repb. of Korea  
*Graduate research student*  
*Research Area:* Gel simulants and gel fuels synthesis, characterization through rheology and droplet dynamics, Gel Droplet combustion, Hybrid rocket fuels, Hypergolic interactions
- JUL 2012- JAN 2014 | INDIAN INSTITUTE OF SCIENCE (IISc), Bengaluru, India  
*Project Associate*  
*Research Area:* Spray and Droplet Dynamics. Experimental spray diagnosis of the Liquid rocket Injectors (*Govt. Funded Project*), Spray characterization of aviation grade Bio-fuels (*Funded by Pratt and Whitney*)
- FEB 2011- MAY 2012 | LIQUID PROPULSION SYSTEMS CENTRE (LPSC, ISRO), VALIAMALA, INDIA.  
*Graduate research student*  
*Research Area:* Computational studies on thermal and flow-based predictions of the real working model of low thrust liquid rocket engines.  
Real-time experimental analysis of high altitude engines.

## PUBLICATIONS

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### International Journals

- [1. Oscillatory bursting of gel fuel droplets in a reacting environment](#)  
A.Miglani, P.Nandagopalan, J.John, and S.W.Baek  
*Nature Scientific Reports, June 2017*
- [2. Rheology of solid-like ethanol fuel for hybrid rockets: Effect of type and concentration of gellants](#)  
J.John, P.Nandagopalan, S.W.Baek, and A.Miglani  
*Fuel, June 2017*
- [3. Shear-flow rheology and Viscoelastic Instabilities of Ethanol Gel Fuels](#)  
P. Nandagopalan, J. John, S.W.Baek, A. Miglani, and K Ardhianto  
*Experimental Thermal and Fluid Science, December 2018*
- [4. Thermo-reversible gelation and self-assembly behavior of dibenzylidene sorbitol in ternary solvent mixtures](#)  
J. John, P. Nandagopalan, K. Ardhianto and Seung Wook Baek  
*Colloids and Polymer Science- accepted*

## International Conferences and Book Chapters

1. **Rheological Study of Solid Ethanol Using Different Solidifying Agents**  
J. John, P. Nandagopalan, and S. W. Baek  
*Asian Joint Conference on Propulsion and Power (AJCPP 2016), Kagawa, Japan, 2016*
2. **Spreading Dynamics of Shear-Thinning Fluid Drop Impact on Hydrophobic Substrate**  
P. Nandagopalan, J. John, A. Miglani, and S. W. Baek  
*18<sup>th</sup> Annual Conference on Liquid Atomization and Spray Systems (ILASS-Asia 2016)*
3. **Disruptive Combustion Behavior of Gelled Ethanol Fuel Droplets**  
A. Miglani, P. Nandagopalan, J. John, and S. W. Baek  
*18<sup>th</sup> Annual Conference on Liquid Atomization and Spray Systems (ILASS-Asia 2016)*
4. **Effect of Orifice Recess on the Droplet Size Distribution of Sprays Discharging From Gas-Centered Swirl Coaxial Atomizers**  
A. Joseph, P. Nandagopalan, T. J. Tharakan, and S. Deivandren  
*Book Chapter, September 2016,*  
*Proceedings of the 5<sup>th</sup> International and 41<sup>st</sup> National Conference on FMFP, 2014*
5. **Rheological Behavior of DBS-induced Kerosene Gel Propellants**  
K. Ardianto, J. John, P. Nandagopalan, and S. W. Baek  
*12<sup>th</sup> International Conference on Recent Trends in Engineering and Technology (RTET-2018), Bali Indonesia, January 10-11, 2018.*
6. **Self-Assembly Mechanism of 1,3:2,4-dibenzylidene-D-sorbitol in Ethanol Fuel**  
J. John, P. Nandagopalan, and Seung Wook Baek  
*International Conference on Power and Energy Applications (ICPEA), Hong Kong, April 7-9, 2018*

## SCHOLARSHIPS AND AWARDS

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2014-Present	KAIST Scholarship (Ph. D.)
2014-Present	Brain Korea 21 (BK 21) Funding for conferences and publications
2014-Present	National Research Funding (NRF), Republic of Korea Research funding for " <i>Experimental studies of gel and hybrid rocket fuels</i> "
Jan 2018	Best Paper Award Paper title: " <i>Rheological Behavior of DBS-induced Kerosene Gel Propellants</i> " International Conference on Recent Trends in Engineering and Technology (RTET-2018)
Sep 2017	Article covered in Department of Aerospace Newsletter Paper title: " <i>Oscillatory bursting of gel fuel droplets in a reacting environment</i> " <a href="http://aenews.kaist.ac.kr/n26th">http://aenews.kaist.ac.kr/n26th</a>