



گروه مهندسی مکانیک و دیپارتمان نفت و گاز دانشگاه علم و فرهنگ برگزار می‌کند:

کارگاه آموزشی یک روزه با ارایه گواهینامه حضور در دوره

نانوسیالات

Nanofluids

دکتر رضا عزیزیان
محقق دانشگاه MIT (آمریکا)

دکتر محسن شریف پور
عضو هیات علمی و مسئول آزمایشگاه
نانوسیالات دانشگاه پرتوریا (آفریقای جنوبی)
و عضو هیات علمی دانشگاه علم و فرهنگ

۹ دی ماه ۱۳۹۵

مباحث مطرحه:

- جوشش و اثر سطح بر CHF
- خنک کردن قطعات الکترونیکی
- فرصت های تحقیقاتی در زمینه نانوسیالات
- نکاتی کلیدی در تولید مقالات علمی در زمینه نانوسیالات
- پرسش و پاسخ
- آماده سازی و پایداری نانوسیالات
- خصوصیات فیزیکی و پارامترهای موثر بر آنها
- انتقال حرارت با نانوسیالات
- نکاتی در خصوص آزمایش انتقال حرارت طبیعی

جهت کسب اطلاعات بیشتر با شماره تماس ۰۲۱۴۴۲۳۸۱۷۱ (داخلی ۳۷۱) و یا وبسایت www.usc.ac.ir مراجعه نمایید.

برای شرکت کنندگان در کارگاه نانوسیالات گواهی حضور در کارگاه صادر خواهد شد.

هزینه شرکت در کارگاه نانو سیالات 200,000 تومان می باشد.

دانشجویان می توانند با ارسال تصویر کارت دانشجویی از تخفیف 20 درصدی استفاده کنند (160,000 تومان).

پذیرایی شامل میان وعده (Refreshment) و نهار می باشد.

هزینه شرکت در کارگاه باید به شماره حساب 7278647086 بانک ملت شعبه تیراژه به نام دانشگاه علم و فرهنگ واریز گردد.

علاقه مندان برای شرکت در کارگاه نانو سیالات تصویر فیش واریزی را به همراه مشخصات ذکر شده در جدول زیر را به آدرس ایمیل nanofluids.workshop.usc@gmail.com ارسال کنند.

❖ ارائه کارت شناسایی معتبر و اصل فیش پرداختی در روز کارگاه الزامی است.

نام و نام خانوادگی:
تاریخ تولد:
دانشگاه محل تحصیل:
آخرین مقطع تحصیلی / رشته تحصیلی:
محل کار و شغل:
شماره تماس:
ایمیل:
تصویر کارت دانشجویی در صورت استفاده از تخفیف دانشجویی پیوست گردد
تصویر فیش واریزی به شماره حساب <u>7278647086</u> بانک ملت شعبه تیراژه به نام دانشگاه علم و فرهنگ

Program of the workshop

8:30 - 9:00	Registration	
9:00 -9:45	Nanofluid preparation and stability	Dr Sharifpur and Dr Azizian
9:45-10:30	Thermo-physical properties	Dr Sharifpur
10:30-10:45	Refreshment	
10:45-11:30	Nanofluids convective heat transfer	Dr Azizian
11:30-12:15	Nanofluid favorability in a single phase flow	Dr Azizian
12:15 -13:15	Lunch Break	
13:15 -14:00	Cavity flow natural convection of nanofluids and the experimental set-up	Dr Sharifpur
14:00 -14:45	Nanofluid Boiling and surface effect on CHF	Dr Azizian
14:45 -15:00	Refreshment	
15:00 -15:45	Nanofluid in electronic cooling	Dr Azizian
15:45- 16:10	Research opportunity in nanofluids	Dr Sharifpur
16:10- 16:30	Important points on nanofluids publication	Dr Sharifpur
16:30- 17:00	Answer to questions	Dr Sharifpur and Dr Azizian

**The workshop will be presented in Persian language*

Short biography of the presenters

Dr. Mohsen Sharifpur is a senior lecturer in the Department of Mechanical and Aeronautical Engineering at the University of Pretoria and is responsible for the Nanofluids Research Laboratory. He received a BEng (Mechanical Engineering) degree from Shiraz University in Iran. He completed a MEng degree in nuclear engineering (thermal fluid) and received a full scholarship for his PhD study in mechanical engineering (thermal fluid) from the Eastern Mediterranean University. He was the only postgraduate student who received four out of four for the cumulative grade point average (CGPA) when he obtained his PhD. He is also registered as a professional engineer. He is the author and co-author of more than 70 articles and conference papers. His research interests include convective multiphase flow, the thermal fluid behaviour of nanofluids, convection nanofluids, convection in porous media, computational fluid dynamics (CFD) and waste heat to work in thermal systems. He also reviews notable accredited journals.

Some of his recent publications on Nanofluids:

2017

- 1 Mostafa Mahdavi, **M. Sharifpur** and J.P. Meyer, Implementation of diffusion and electrostatic forces to produce a new slip velocity in multiphase approach of nanofluids, Powder Technology, Vol. 307, 1 February 2017, pp. 153-162
- 2 Mostafa Mahdavi, **M. Sharifpur** and J.P. Meyer, A new combination of nanoparticles mass diffusion flux and slip mechanism approaches with electrostatic forces in a natural convective cavity flow, International Journal of Heat and Mass Transfer, Vol. 106, March 2017, pp. 980–988.

Accepted paper

- 3 Mostafa Mahdavi, **M. Sharifpur**, H. Ghodsinezhad and J.P. Meyer, Experimental and numerical investigation on a water-filled cavity natural convection to find proper thermal boundary conditions for simulation, journal of Heat Transfer Engineering, manuscript number: 3516.

2016

- 4 **M Sharifpur**, Saboura Yousefi and Meyer JP, A New Model for Density of Nanofluids Including Nanolayer, International Communications in Heat and Mass Transfer, Vol. 78, 2016, 168-174.
- 5 Josua P Meyer, Saheed A Adio, **M Sharifpur** and Paul N Nwosu, The viscosity of nanofluids: a review of the theoretical, empirical and numerical models, Heat Transfer Engineering, 2016, Vol. 37, Issue 5, pages 387-421, 2016.
- 6 Saheed A Adio, Mehdi Mehrabi, **M Sharifpur** and JP Meyer, Experimental investigation and model development of the effective viscosity of MgO-ethylene glycol nanofluids using dimensional analysis, FCM-ANFIS and GA-PNN techniques, International Communications in Heat and Mass Transfer. Vol. 72, pp. 71–83, 2016.
- 7 Ntumba Tshimanga, **Mohsen Sharifpur**, Josua P. Meyer, Experimental Investigation and Model Development for Thermal Conductivity of Glycerol-MgO Nanofluids, Heat Transfer Engineering, Vol. 37, Issue 12, pp. 1-16, 2016.
- 8 Mostafa Mahdavi, **M. Sharifpur**, H. Ghodsinezhad and J.P. Meyer, Experimental and numerical study on thermal and hydro-dynamic characteristics of laminar natural convective flow inside a rectangular cavity with water, EG-water and air, Experimental Thermal and Fluid Science, Vol. 78, pp. 50–64, 2016.

- 9 SA Adio, **M Sharifpur** and JP Meyer, "Influence of ultrasonication energy on the dispersion consistency of Al₂O₃-glycerol nanofluid based on viscosity data, and model development for the required ultrasonication energy density, Journal of Experimental Nanoscience, Vol. 11, Issue 8, 630-649, 2016.
- 10 Hadi Ghodsinezhad, **M. Sharifpur**, and J.P. Meyer, Experimental Investigation on Cavity Flow Natural Convection of Al₂O₃ – Water Nanofluids, International Communications in Heat and Mass Transfer, Vol. 76, 2016, pp. 316-324.
- 11 Mostafa Mahdavi, **M. Sharifpur**, J.P. Meyer, Simulation study of convective and hydrodynamic turbulent nanofluids by turbulence models, International Journal of Thermal Sciences, Vol. 110, 2016, pp. 36-51.

For more information about his publications, you can take a look at his researchgate account (https://www.researchgate.net/profile/Mohsen_Sharifpur/)

Dr. Reza Azizian is a research scientist at Advanced Thermal Solution (ATS) and a research affiliate at Massachusetts Institute of Technology. Before joining ATS, Dr. Azizian was a postdoctoral associate at the Massachusetts Institute of Technology. His areas of technical expertise are nanofluid technology, nano-engineered surfaces, fluid dynamics, heat transfer and two-phase flow. He received his Ph.D., from the University of Newcastle in Australia in 2013. He is the author and co-author of 20 articles in refereed journals and peer-reviewed conference proceedings. His paper on magnetite nanofluids in IJHMT ranked as the 4th most read article in 2013 in that journal.

Some of his recent publications on Nanofluids:

- 1 M.A. Khairul, E. Doroodchi, **R. Azizian**, B. Moghtaderi, "An experimental study on fundamental mechanisms of ferro-fluidics for an electromagnetic energy harvester", Industrial & Engineering Chemistry Research, Volume 55, Issue 48, pp 12491-12501 (2016).
- 2 M. Tetreault-Friend, **R. Azizian**, M. Bucci, T. McKrell, J. Buongiorno, M. Rubner, R. Cohen, "Critical heat flux maxima resulting from the controlled morphology of nanoporous hydrophilic surface layers", Applied Physics Letters, Volume 108, pp. 243102 (2016).
- 3 M. Mehrali, E. Sadeghinezhad, **R. Azizian**, A.R. Akhiani, S.T. Latibari, M. Mehrali, H.S.C. Metselaar, "Effect of nitrogen-doped graphene nanofluid on the thermal performance of the grooved copper heat pipe", Energy Conversion and Management, Volume 118, pp. 459-473 (2016).
- 4 M.A. Khairul, K. Shah, E. Doroodchi, **R. Azizian**, B. Moghtaderi, "Effects of surfactant on stability and thermos-physical properties of metal oxide nanofluids", International Journal of Heat and Mass Transfer, Volume 98, pp. 778-787 (2016).
- 5 **R. Azizian**, E. Doroodchi, B. Moghtaderi, "Influence of controlled aggregation on thermal conductivity of nanofluids", ASME Journal of Heat Transfer, Volume 138, pp.021301-021306 (2016).