

Synthesis and characterization of nanoparticles and nanofluids

Start from: February 2019

Period: 6 months

Internship/part-time job

Who are we?

Synano is a start-up established in Feb 2017 and incubated at YES!Delft. At Synano, we develop nano-coolants for boosting the cooling of high tech equipment and electronics. Efficient cooling is one of the most important technical challenges that many industries face, such as data centers, power electronics, electric vehicles and manufacturing. Current coolants are limited in their capability to cope with the thermal challenges of the future. Therefore, we use 'nanoparticles' to increase the heat transfer performance of current coolants and fulfil the cooling needs of the next generation electronics. As a part of Synano team, you will conduct theoretical research and experiments to synthesize nanoparticles and stable nanofluids for cooling purposes.

We have a multi-cultural, creative and awesome team with expertise in chemistry, engineering, finance and marketing. We are looking for a chemist to join our team. Join us and together we go from cool to super-cool!

Project objective:

Research and develop stable suspensions of nanoparticles in various base fluids (eg. water, water+glycol mixture, etc.) such that nano-suspensions have up to 40% higher thermal conductivity than base fluids.

Project Activities:

Project tasks which will be performed by you include:

- Literature study on basic principles of the nanofluid-based cooling systems and nanofluid chemistry
- Reviewing the effects and inter-relation between type, size, concentration and shape of nanoparticles in combination with the base fluid and its thermal conductivity
- Developing methods for synthesis of stable nanofluids
- Characterizing nanofluid properties such as long-term stability, thermal conductivity, viscosity, density etc.
- Documentation and recommending improvements

'Must have' skills:

- Solid background knowledge on surface chemistry and colloidal science
- Hands-on experience in working with nanoparticles/ nano-suspensions as University assignments/ work experience

SYNANO

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- Research oriented mindset
- Curious and motivated to try out new experiments
- Material characterization techniques: absorption/UV-vis spectroscopy, electron microscopy, rheometry

'Nice to have' Skills:

- Independent working attitude
- Pro-active approach
- Flexible and adaptive

Why should you join us:

- Internship compensation
- We also offer employment opportunity after internship, based on your interest and performance
- Learn and grow with the company so that you are a part of our success story
- You won't just be doing research, but also be a part of decision making and business development of the company
- Experience the dynamic working environment of a startup and grow your network by meeting new people

Please send your CV and motivation letter to info@synano-cooling.com to apply for the vacancy.

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