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PLASMONIC NANOFUID COMPRISING METAL OR METAL-LIKE NANOPARTICLE FOR HIGH PHOTOTHERMAL CONVERSION OF SOLAR ENERGY



▶ MORE INFORMATION

MEGA-TREND

- **Chemicals and Materials**

TECHNOLOGY READINESS LEVEL (TRL)

- **TRL 4**

PATENT/ GRANTED NUMBER

- **UI 2021004258**

▶ TECHNOLOGY OVERVIEW

The present invention discloses a plasmonic nanofluid for solar energy harvesting. The plasmonic nanofluid employs a significantly low mass concentration of about 0.001 wt% of a metal or metal-like nanoparticle having blended, fine-tuned nanomorphologies. The plasmonic nanofluid improves the photothermal energy conversion of a broadband solar spectrum to result in less settlement and sedimentation rates with no significant impact on pumping power. The plasmonic nanofluid selectively shifts a wavelength at a localized surface plasmon resonance between

incident radiation and a collective electron cloud of the said metal or metal-like nanoparticle, causing increased absorption of the broadband solar spectrum at a reduced scattering.

CONTACT US!

Dr. Lee Ching Shya

UMCIE Business Officer

Email: leecs@um.edu.my

Phone: +603 – 7967 7351 / 7352