NANO PROPELLERS MAY BE TOMORROW’S DRUG DELIVERERS

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Scientists say the propeller opens the possibility of targeting medicines and regularizing their flow into and out of cells.

Washington, July 17 (ANI): Researchers at the University of Illinois at Chicago have created a theoretical blueprint for assembling a nanoscale propeller with molecule-sized blades.

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If the blades have a hydrophobic, or water-repelling nature, they pump a lot of water. But if they are hydrophilic -- water-attracting -- they become clogged with water molecules and pump poorly, the study showed.

"Pumping rates and efficiencies in the hydrophilic and hydrophobic forms can differ by an order of magnitude, which was not expected," said Prof. Král.

They found that at the molecular level the chemistry of the propeller's blades and their sensitivity to water plays a big role in determining whether the propeller pumps efficiently or just spins with little effect.

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The study appears in the July 12 issue of Nature and is scheduled for publication as the June 28 cover story of Physical Review Letters. (ANI)

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