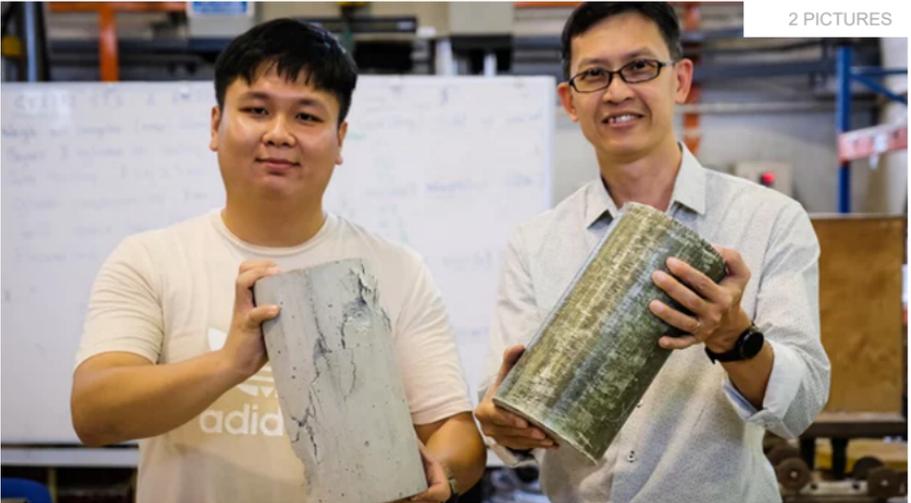


# Light-activated wrap designed to fix concrete structures



Ben Coxworth (<https://newatlas.com/author/ben-coxworth/>) | 7 hours ago



2 PICTURES

A bare cracked concrete pillar (left), and one reinforced with FasRaP (Credit: Nanyang Technological University)

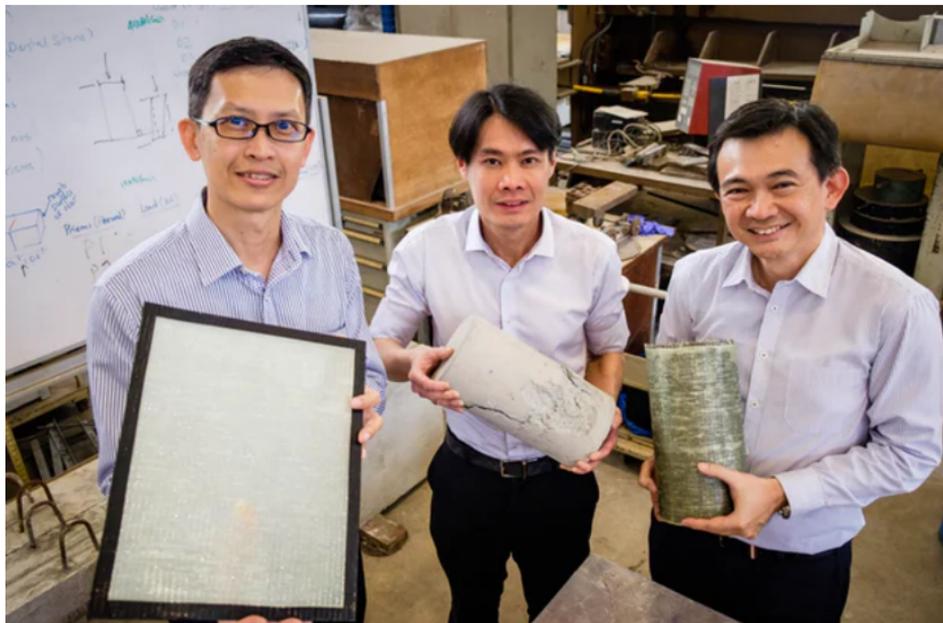
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Utilizing tape to repair or reinforce concrete structures may seem like some hillbilly fix-it joke, but in fact that's just what fiber reinforced polymer (FRP) sheets are used for. Now, scientists have developed what they say is a better FRP, that halves the number of people and amount of time required for application.

Ordinarily, when FRP sheets are applied to cracked or otherwise compromised concrete, a resin has to be applied to the surface first. According to researchers at Singapore's Nanyang Technological University, up to six workers are typically required for the whole job.

With that in mind, they developed what is known as FasRaP - Fast Wrapping Fibre Reinforced Polymer. It consists of a glass fiber-reinforced polymer wrap, which is pre-coated with a proprietary adhesive resin that hardens only when exposed to light. As a result, it can reportedly be applied by just three people, in half as much time as is required for conventional FRPs.

Additionally, because the resin is pre-applied to the wrap under controlled conditions, it is claimed that the quality of repairs/reinforcements should be more consistent and easier to assess.



In industry-standard lab tests, a concrete pillar wrapped with FasRaP was found to be able to withstand an 80-percent higher load than a bare pillar. This is said to be similar to strength figures for traditional FRPs.

"Our invention allows companies to save on manpower costs, increase efficiency and make structural reinforcement much easier to execute," says lead scientist, Assoc. Prof. Ng Kee Woei. "This will help them to meet future building standards and prolong the life of older buildings and structures as Singapore and other urban cities age."

The university is now in the process of commercializing the technology.

Source: [Nanyang Technological University](https://media.ntu.edu.sg/NewsReleases/Pages/newsdetail.aspx?news=92f5a949-8881-4679-8808-db081122dd57)  
(<https://media.ntu.edu.sg/NewsReleases/Pages/newsdetail.aspx?news=92f5a949-8881-4679-8808-db081122dd57>)