

Governor Inslee visits UW Materials Science & Engineering

By Theresa Gabrielli
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UW MSE received a visit on Feb. 20 from Gov. Jay Inslee. MSE professor Dwayne Arola and his partners at Zeolite Composites presented their current project – using zeolite minerals in place of traditional cement in the production of concrete – then gave the governor a tour of their lab and testing facilities, which includes collaborations with Civil & Environmental Engineering.



MSE master's students Kunthea Deng and Renjie Song show Gov. Jay Inslee and his wife, Trudi, how samples of zeolite concrete fractured in compression tests.

Current concrete manufacturing produces large amounts of greenhouse gases. By some metrics, concrete alone is responsible for as much as eight percent of all global emissions of carbon dioxide, and the source of those emissions is largely due to the production of cement.



Inslee and the research team in front of CEE lab equipment that can test zeolite concrete under as much as 2.4 million pounds of force.

Arola and his team are fabricating samples of concrete made instead with zeolites. Zeolites are a group of natural minerals abundantly found on the surface

of the earth. When combined with calcium and moisture, Arola's team found that some zeolite concrete formulations can be both stronger and more reliable than cement-only versions currently on the market.

Replacing the cement in standard concrete recipes with zeolites could have far-reaching implications for the entire construction industry. Because zeolite does not need to be heat treated like its cement counterpart, there is potential to reduce concrete-related carbon emissions by as much as 25 percent. Gov. Inslee has long been an advocate for innovative ways to combat climate change, and Zeolite Composites hopes to get a zeolite concrete product into the market within a year.

"This [research] is really exciting," said Inslee. "This is really important to the future of reducing CO₂ emissions."

The project also has some personal interest for Inslee: one of his earliest jobs was a concrete delivery truck driver. "I'm the only governor to drive a concrete truck!" he said.

<https://mse.washington.edu/news/article/2023-02-21/governor-inslee-visits-mse>