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MIT, Harvard scientists discover matter similar to lightsabers from 'Star Wars'

Posted by Matt Rocheleau September 30, 2013 03:20 PM

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By Matt Rocheleau, Town Correspondent

Scientists from MIT and Harvard University have created a new form of matter that they say is similar to lightsabers – the fictional laser swords depicted in the popular “Star Wars” movie series.

“The physics of what’s happening in these molecules is similar to what we see in the movies,” Harvard physics professor Mikhail Lukin told the [Harvard Gazette](#), a publication produced by the university’s Public Affairs & Communications office.

“When these photons interact with each other, they’re pushing against and deflecting each other,” he added. “It’s not an inapt analogy to compare this to lightsabers.”

Lukin and MIT physics professor Vladan Vuletic led a group at the Harvard-MIT Center for Ultracold Atoms who together managed “to coax photons into binding together to form molecules — a state of matter that until recently had been purely theoretical,” the Gazette reported.

Their work is described in a [paper](#) published in the science journal *Nature* last week.

Until their discovery, scientists had never observed photons interacting with each other, the Gazette report said. If two laser beams met, for example, they would just pass through one another.

“What we have done is create a special type of medium in which photons interact with each other so strongly that they begin to act as though they have mass, and they bind together to form molecules,” Lukin told the Gazette. “This type of photonic bound state has been discussed theoretically for quite a while, but until now it hadn’t been observed.”

But, don’t expect to see lightsabers or anything like them go into production or to hit store shelves, at least not anytime soon.

“We do this for fun, and because we’re pushing the frontiers of science,” Lukin told the Gazette.

“What it will be useful for we don’t know yet,” he added. “But it’s a new state of matter, so we are hopeful that new applications may emerge as we continue to investigate these photonic molecules’ properties.”

To read more about the science behind the discover, click [here](#) or [here](#).

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Brilliant work! Well done sirs (and madames).

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