



## **Eni Award 2019: Prizes for energy research and innovation awarded today in the presence of the President of Italy**

*Rome, 10 October 2019* – The Eni Award ceremony took place today at the Palazzo del Quirinale in the presence of the President of Italy **Sergio Mattarella**, Eni Chairman **Emma Marcegaglia** and CEO **Claudio Descalzi**. The Award, established in 2007 and now in its 12th year, is also known as the “Nobel Prize for Energy” and has over the years become an internationally recognised award for research in the energy and environment sectors. The Eni Award aims to promote better use of energy sources and encourage new generations of researchers in their work. The award also demonstrates the importance Eni places on scientific research and innovation.

The ***Energy Transition*** award is one of the top three prizes and rewards the best innovations in using hydrocarbons to decarbonize the energy system. This year, it was presented to **James A Dumesic**, of the University of Wisconsin-Madison, who has developed innovative catalytic processes for converting biomass fuels and chemical products, increasing yield by optimising reaction conditions. One of the new processes he has developed is converting a sugar – fructose – into compost, from which biomaterials can be obtained and used as an alternative to common plastic materials sourced from fossils.

The ***Energy Frontiers*** award for research into renewable energy sources and energy storage was given to Michael Aziz and Roy Gordon at Harvard University. They have developed a new type of battery that is particularly useful for the safe and convenient storage of energy from intermittent renewable sources such as solar and wind, and its subsequent delivery over long periods of time. The new battery chemistry uses organic molecules dissolved in water, comprising abundant and inexpensive elements that can store energy.

Finally, the ***Advanced Environmental Solutions*** award is dedicated to research into protecting the air, water and earth, and reclaiming industrial sites. It was presented this year to **Paul Chirik**, of Princeton University, whose research was in the field of catalysis. Metals like iron and cobalt can be used to replace the noble metals (platinum, rhodium, palladium, etc.) in catalytic reactions in the pharmaceutical industry and consumer products, with benefits for business and the environment. Chirik recently discovered that the iron catalysts he has developed can recycle butadiene, clearing the way for future developments in mitigating the environmental impact of traditional plastics.

### *Eni awards for young researchers*

The ***Young African Talents*** award, established in 2017 on the 10th anniversary of Eni Award and given to young talent from the African Continent, was presented to **Emmanuel Kweinor Tetteh** of the Durban University of Technology and **Madina Mahmoud** of the American University in Cairo.

Tetteh assessed a process that combines innovative photocatalysts with biological treatment systems for waste water, at the same time converting CO<sub>2</sub> into fuel. Mahmoud's work focusses on preparing innovative membranes to treat water from production.

The ***Young Researcher of the Year*** award is presented every year to two researchers under the age of 30 who have received a research doctorate from an Italian university. It was won this year by **Alberto Pizzolato** and **Matteo Monai**. Pizzolato, from the Politecnico di Torino, has designed and developed innovative computational methods for the generation of high-performance, low-cost, high-durability energy devices. The devices are created using special optimisation algorithms that mean they can automatically evolve in complex and efficient architectures. Monai is from the University of Trieste and has presented research into developing nanostructured catalysts based on non-noble – and therefore cheap – metal alloys, for use in the energy sector, especially for converting biomass fuels and chemical products.

The **Recognition for Innovation** awards for research by Eni's employees were simultaneously presented for: systems to increase the safety and performance of drilling operations; the testing of an efficient gyro converter that makes it possible to transform the

motion of the waves into energy; the development of software agents based on machine-learning technology to optimise crude oil production and predict operational problems in plants by using advanced artificial intelligence and negotiation techniques.

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