

Nanotechnology and Biotechnology Develop Rapidly

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YOGYAKARTA- Nanotechnology and biotechnology are now advancing rapidly in fields such as medical field, medicine and biology. Director of the Australian Institute for Biotechnology and Nanotechnology, University of Queensland, Prof. Peter. P. Gray said the development of the two disciplines has positive impact and opens up research opportunities in many areas.


"Therefore, we established the institute as an institution of integrated multi-disciplinary research," Peter Gray said in the Open Knowledge Partnership Lecture on 'Current Advances in Nanotechnology and Bio-engineering for Medicine and Biology' at UGM Senate Hall, Tuesday (6/11).

Peter Gray pointed out some of the technology that is developed through nanotechnology and biotechnology are recombinant DNA or stem-cell. Recombinant DNA is DNA that is made by combining two or more sequences that would not normally occur together. The advent of recombinant DNA technology, according to Peter, has enabled the development of new class of human therapeutics based on protein.

"One of these is known for monoclonal antibodies," he said.

Moreover, Peter also mentioned the development of new vaccine delivery system using nanopatch by Prof. Mark Kendall of the University of Queensland. Nanopatch has thousands of tiny projectors coated with antigen and is useful to incorporate the vaccine into the skin surface.

"It can be pushed through the skin to the epidermis and dermis, thus antigens stimulate to form immune system to the disease, including HIV and hepatitis," Peter explained.



Meanwhile, UGM Vice-Rector for Research and Community Service, Prof. Dr. Suratman, M.Sc. acknowledged the benefits of nanotechnology development in industries, such as manufacturing and textiles.

"The implication is quite huge, even revolutionary for the development of products in the fields of technology, medicine, and aerospace," Suratman said.

On the other hand, Suratman explained the open lecture at UGM that began in 2006 has gradually gained national credibility and reputation, serving as one of the solutions to national problems and providing a new perspective of science.

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