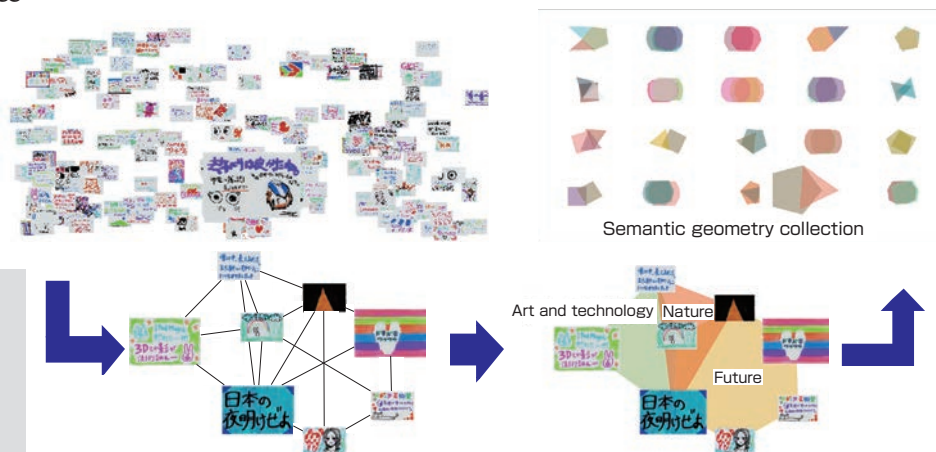


## Visualization of visitors' comments as an artwork

### A visitor not only appreciates but participates in an exhibition

We have developed a system for visualization of visitors' comments as an artwork for exhibitions. The system allows visitors to not only appreciate but participate in an exhibition. The system includes a system for collaborative knowledge construction. Defining a structure of knowledge for representation of data semantics is usually a costly and time-consuming task. Our system is aimed at construction of knowledge with collective intelligence. Users can add resources and properties as they would with social tagging. The system assists the construction of knowledge using suggestions. In this way, the crews tagged attributions to visitors' comments on site and the system visualizes connections among comments as an artwork. We displayed our system in the 14th Japan Media Art Festival 2011 and 3,100 visitors' comments were tagged on site and visualized as artworks in the festival.



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#### The process of generating geometrical patterns from a set of comment cards

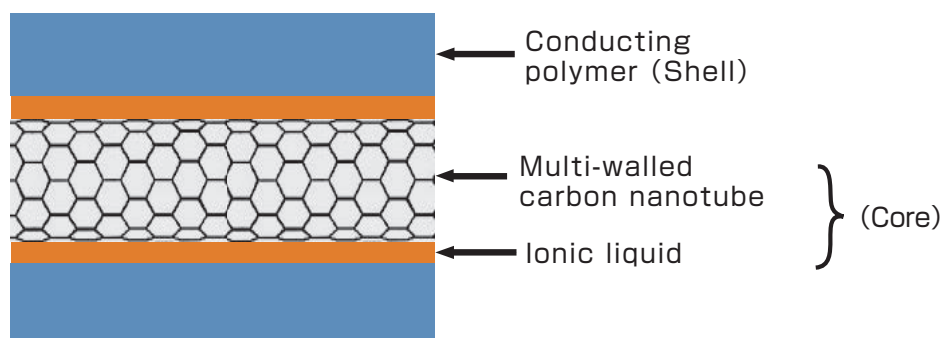
The system represents connections among visitors' comment cards based on their attributions which are tagged by the collective intelligence. It generates geometrical patterns of a set of the cards as a new artwork.

## Nanotechnology, Materials and Manufacturing

## An alternative of platinum counter electrodes for dye-sensitized solar cells

### Development of a ternary material with a core-shell structure

AIST has developed a ternary material with a core-shell structure consisting of multi-walled carbon nanotubes, an ionic liquid, and a conducting polymer. It was found that, when used as the counter electrode of dye-sensitized solar cells (DSCs), the material exhibits photoelectric conversion efficiency as high as that of platinum counter electrodes. DSCs are in the development stage and platinum, one of rare metals, is considered to be a promising material of counter electrodes. However, because of the rapidly increasing use of platinum as catalysts in vehicles and fuel cells, there is concern that the supply and demand balance of platinum may be affected. If the new ternary material, which is produced by using simple processes, can replace platinum, then its use would help reduce the consumption of platinum. It would also enable a cost reduction and an increase in the area of DSCs.



The developed ternary counter electrode material with a core-shell structure

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