

Nanofiber Web Measurement and Assessment Technology

Dr. Junhee Lee
Department of Nature-Inspired Nano Convergence Systems
T. +82 - 42 - 868 - 7937
E. meek@kimm.re.kr

⇒ Technology to find defects in the nanofiber web and measure its size and thickness real-time

Client / Market

- Nanofiber, fiber laminating, paper, film manufacturing site

Necessity of this Technology

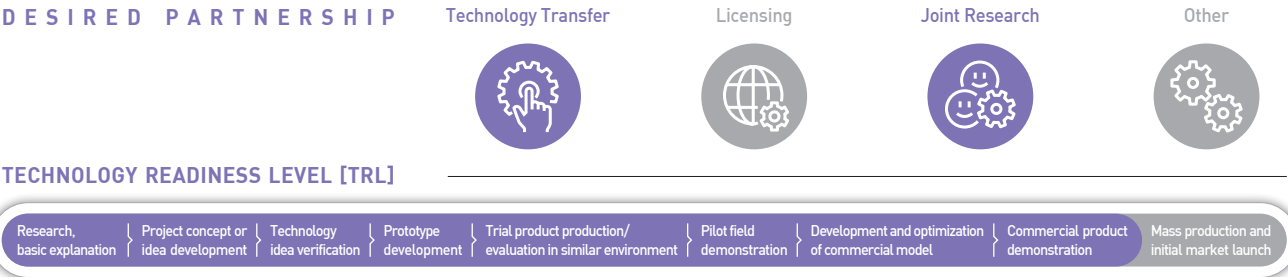
- Defects in nanofiber web fabricated with electrospinning process has negative effects on nanofiber web's penetration and filtration function.
- There is a need to test and analyze the nanofiber web's defects to control the production process.

Technical Differentiation

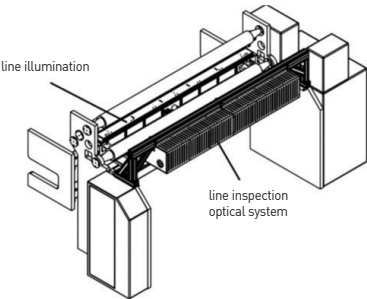
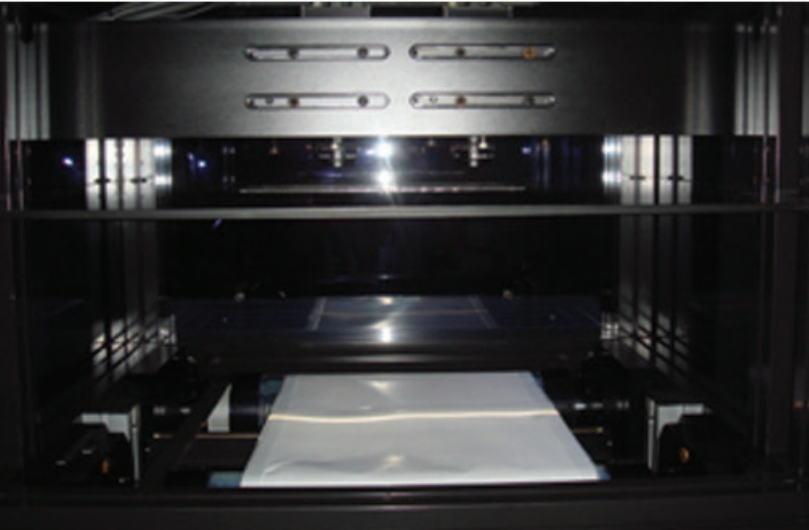
- Defect detection method: Comparing the intensity of the concentrated light that pass through the defects in the opaque nanofiber web.
- Thickness measuring method: Observing the change in the average intensity of the concentrated light that pass through the opaque nanofiber web.

Excellence of Technology

- Concentrated light is illuminated as a line to minimize noise occurrence and can test the nanofiber web at a high speed.
- Concentrated light is illuminated as a line, and the contrast difference is great between the part with defect and the part without a defect that the location of the defect can be precisely measured.
- The location and number of defects can be measured in real time, and the thickness of the nanofiber web can be measured simultaneously.



Nanofiber Defect Measuring Apparatus



Current Intellectual Property Right Status

PATENT

- Apparatus for Monitoring and Repairing of Multi Nozzle Electro Spinning, and Method for Monitoring and Repairing Using the Thereof (Patent registered, 0836274)
- Testing Apparatus of Nanofiber Web and Testing Method the Same (Patent registered, 0893933)
- Apparatus and Method of Checking Defect of Nanofiber and Repairing the Defect (Patent registered, 1056345)

KNOW-HOW

- Measurement variable such as speed, intensity and diameter, etc