

EOFlow's US Subsidiary Nephria Gets License on New**"MXene" Nanomaterial from Drexel University...****Marking a Big Step in Development of a Wearable Artificial Kidney**

- ▶ Secured a key technology needed to develop wearable artificial kidneys (WAK)
- ▶ Completes core technology line-up needed to develop WAK

On April 29, EOFlow, a provider of wearable drug delivery solutions, announced that its U.S. subsidiary Nephria Bio, Inc. (Nephria) signed a license agreement with Drexel University to transfer technology of new MXene nanomaterials.

Through this license agreement, Nephria secured the exclusive rights to use the new MXene nanomaterial owned by Drexel University in the dialysis field. Nephria plans to develop wearable dialysis system, otherwise known as the wearable artificial kidney (WAK), in earnest, starting with this technology transfer.

MXenes are a family of two-dimensional (2D), inorganic materials composed of titanium and carbon atoms, first discovered and developed by Dr. Yury Gogotsi and Dr. Michel Barsoum at Drexel University in 2011. MXenes are increasingly attracting attention as an ideal 2D material, together with graphene. MXenes are known to show the best performance among known materials in filtering urea, the most difficult material to remove in dialysis. Although there has been a lot of research on MXene applications in the field of electromagnetic shielding and batteries, this will be the first time that a MXene is applied to dialysis.

The need for improvements in dialysis therapy, including access to wearable solutions, is a growing one. According to Fortune Business Insights, the global dialysis market reached \$90.3 billion in 2019, and is estimated to reach \$177.6 billion by 2027 due in large measure to global increases in patients with hypertension and diabetes who eventually required dialysis therapy. On the other hand, there are no products such as the wearable artificial kidney commercially available yet.

"Two technologies are essential to develop a wearable artificial kidney; One is a small, light actuator with low power consumption, and the other is an efficient material for urea filtration. Nephria Bio secured them both- the proprietary electroosmotic pump technology from EOFlow, and the filter technology from Drexel University," Jesse Kim, founding CEO of EOFlow said.

"We will definitely do well in developing wearable artificial kidney, which has long been the ultimate goal of medicine."



"Our fundamental study of titanium carbide MXene, supported by the U.S. National Science Foundation, showed that MXene is biocompatible, able of adsorbing a variety of small molecules, and holds a lot of promise in medical applications, so it is exciting to see it applied for improving and really changing dialysis — an area of need in health care that can help millions of people," Gogotsi said.

EOFlow announced in January that the company raised 35 billion Korean won by issuing convertible bonds (CB), and significant part of the fund will go to identifying and investing into new opportunities and businesses that are synergistic to its existing technology and product platform. The establishment of the subsidiary Nephria and acquisition of the MXene license by Nephria is the first outcome. EOFlow said it is investigating other new technologies and business opportunities to further propel the growth of EOFlow.