

# Special Issue

## Biohybrid Lung Assist Devices

### Message from the Guest Editor

At present, the only available treatment option for patients suffering from end-stage lung diseases is lung transplantation. However, due to the increasing incidence and prevalence of end-stage lung diseases and the scarcity of suitable donor lungs, lung transplantation is only available for highly selected patients. Contemporary extracorporeal membrane oxygenation (ECMO) systems, developed to compensate the insufficient gas exchange of the failing lungs, are not yet durable enough to ensure long-term lung support (e.g., equivalent to left ventricular assist devices in end-stage heart failure). The most frequent causes for their malfunction are associated with disturbed blood coagulation, induced by foreign materials or the non-physiological blood rheology in the devices. As a result, there is a global research focus on the establishment of implantable (bio-)artificial lungs as long-term assist devices, which can be used as reliable “bridges-to-transplantation”, but also as “final destination” therapy.

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### Guest Editor

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