

Denny Tjahjanto

“Mechanics of high-voltage subsea cables”

Renewable energy is currently generated by, e.g. wind farms, water falls, solar panels, which are often situated at remote places, far from urban cities. High-voltage (HV) cables play an important role for transmitting the electrical energy from the source to the area of consumption. The future trend of HV subsea cables includes increasing transmission capacity and voltage to reduce the losses over longer distances.

HV subsea cable is a complex system designed to transmit electrical power through the metallic conductor parts, see figure. The purpose of this presentation is to highlight some mechanics-related challenges in the design of HV subsea cables. Novel experimental methods have been developed and used in conjunction with advanced numerical modelling and simulation techniques for addressing the above challenges in dealing with the mechanics of HV subsea cables.



Denny Tjahjanto is a Senior Scientist at Applied Mechanics Team in NKT HV Cables. He completed his MSc degree in Applied Mathematics at University of Twente in 2003 and his PhD in Engineering Mechanics at Delft University of Technology in 2008, and worked at institutes, such as Max-Planck Institut für Eisenforschung in Düsseldorf (2008–2010), IMDEA Materials Institute in Madrid (2011–2012) and KTH Royal Institute of Technology in Stockholm (2012–2014). Denny Tjahjanto joined ABB Corporate Research in Västerås in 2014 as a Scientist. In December 2019, the Applied Mechanics Team in ABB Corporate Research has been acquired by NKT HV Cables.

