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Gastvortrag

Medium- and High-Power Energy Conversion Based on the Modular Multilevel Converters

Professor Maryam Saeedifard (Georgia Institute of Technology, USA)

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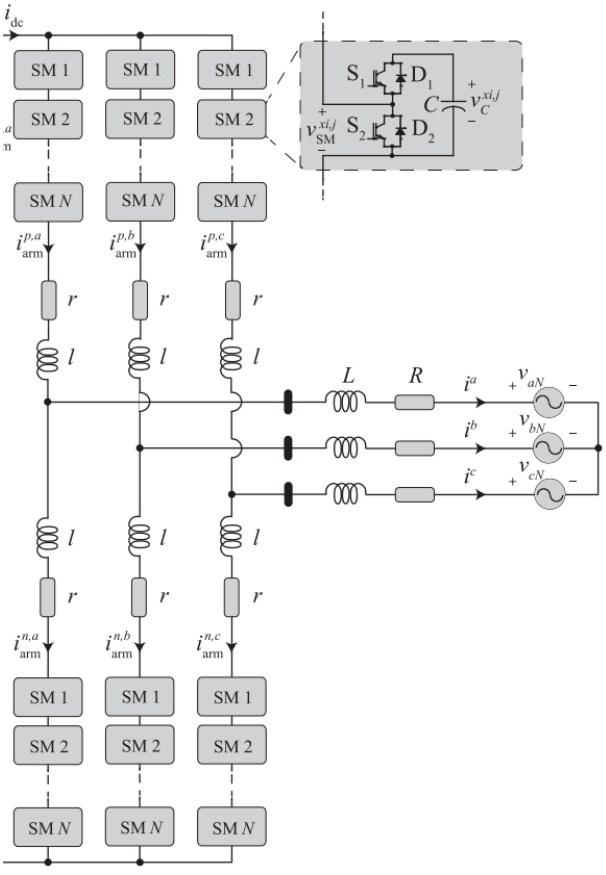
The dc-ac Modular Multilevel Converter (MMC) is a modular/scalable converter which, based on switching devices with low rating values, can potentially meet any voltage/power level requirements. Research on dc-ac MMC operation has primarily focused on HVDC transmission systems where the MMC, based on Si-based switching devices and Insulated Gate Bipolar Transistors (IGBTs), operates with a fixed ac-side frequency and there is little concern over the physical size of the MMC. The salient features of the dc-ac MMC can potentially be exploited for many other applications at medium-voltage level including (i) interfacing the large-scale wind generators, (ii) industrial drive systems, and (iii) high-power dc-dc converters for interfacing dc grids with different voltage levels.



Maryam Saeedifard received the Ph.D. degree in electrical engineering from the University of Toronto, in 2008. She is the recipient of the 2010 Richard M. Bass Award Outstanding Young Power Electronic Engineer Award of the IEEE Power Electronic Society, now an assistant professor at Georgia Institute of Technology, and has been working at Purdue University and with the Power Electronic Systems Group, ABB Corporate Research Center, Switzerland.