Extruded Cables for High-Voltage Direct-Current Transmission: Advances in Research and Development
Giovanni Mazzanti, Massimo Marzinotto

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DESCRIPTION

The only book on the market that provides current, necessary, and comprehensive technical knowledge of extruded cables and high-voltage direct-current transmission

This is the first book to fully address the technical aspects of high-voltage direct-current (HVDC) link projects with extruded cables. It covers design and engineering techniques for cable lines, insulation materials, and accessories, as well as cable performance and life span and reliability issues.

Beginning with a discussion on the fundamentals of HVDC cable transmission theory, Extruded Cables for High-Voltage Direct-Current Transmission: Advances in Research and Development covers:

• Both the cable and the accessories (joints and terminations), each of which affects cable line performance

• The basic designs of HVDC cables including a comparison of mass insulated non-draining cables with extruded HVDC cables

• The theoretical elements on which the design of HVDC cables is based highlighting the differences between HVAC and HVDC cables

• Space charge-related problems that have a critical impact on extruded insulation for HVDC application

• Recent advances in extruded compounds for HVDC cables such as additives and nano-fillers
• The improved design of extruded HVDC cable systems with emphasis on design aspects relevant to accessories

• Cable line reliability problems and the impact on cable system design

Including more than 200 illustrations, *Extruded Cables for High-Voltage Direct-Current Transmission* fills a gap in the field, providing power cable engineers with complete, up-to-date guidance on HVDC cable lines with extruded insulation.

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**ABOUT THE AUTHOR**

**GIOVANNI MAZZANTI, P HD**, is an Associate Professor at the University of Bologna where he teaches high-voltage engineering and power quality. He is an active researcher in the field of power engineering and has published more than seventy peer-reviewed papers and articles. He is a member of IEEE-PES and IEEE-DEIS. Since October 2012, he has chaired the new IEEE-DEIS Technical Committee on HVDC cable systems.

**MASSIMO MARZINOTTO, P HD**, works at Terna (the Italian TSO) in the HDVC systems area dealing with cables, insulators, surge arresters, insulation coordination, HVDC converters, and HVDC electrodes. He is a member of IEEE-DEIS, IEEE-PES and CIGRE, a Senior Member of the IEEE, and is active in various IEEE and CIGRE working groups and committees. He is also author or coauthor of several publications on IEEE transactions and conferences.

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