

HVDC Enrich

HIGH VOLTAGE DIRECT CURRENT TRANSMISSION TECHNOLOGY

Program of The Autumn School: “Modular Multilevel Converter (MMC) Design, Assembly, and Testing”, 17-21 November 2025, at ENISo

Monday 17/11/2025		Workshop1: MMC Fundamentals and Hardware Assembly
		9am-9:15am: Welcome and workshop opening 9:15am-9:45am: LECTURE : Fundamentals of Modular Multilevel Converters 9:45am-10:15am: Presentation of the MMC Demonstrator 10:15am-10:30am: Coffee break 10:30am-12am: Classification of participants into groups& Session I: Submodule PCB Assembly 12 am-1:15pm: Lunch Break 1:15pm-3:15pm: Session II: Continuation of submodules PCB Assembly 3:15pm-3:30pm: Coffee break 3:30pm-5pm: - Submodules unit test - Preparation of a presentation of the results to the other groups
Tuesday 18/11/2025		Workshop 2: MMC Control Development and Testing
		9am-9:30am: LECTURE 1: Control Principles of Modular Multilevel Converters 9:30am-10am: LECTURE 2: Controller Design Using STM32CubeMX and Simulink 10am-10:15am: Coffee break 9:45am-12:15am: Hands-On Session I: Control Development in STM32CubeMX 12:15am-1:15pm: Lunch break 1:15pm-3:15pm: Hands-On Session II: Simulink Control Design, Code Generation, Uploading to STM32, and PWM Signal Verification 3:15pm-3:30pm: coffee break 3:30pm-5pm - Hands-On Session II: Simulink Control Design, Code Generation, Uploading to STM32, and PWM Signal Verification - Preparation of a presentation of the results to the other groups
Wednesday 19/11/2025		Workshop 3: System Integration and Converter Testing
		9am-10:30am: Integration of Submodules for a Single-Phase DC–AC MMC Converter 10:30am-10:15am: Coffee break 10:15am-12:15am: Testing the Converter without Load 12:15am-1:15pm: Lunch Break 1:15pm-3:15pm: Testing the Converter under Load (Single-Phase) 3:15pm-3:30pm: Coffee break 3:30pm-5pm: - Extension to Three-Phase DC–AC Converter and Final Evaluation - Preparation of a presentation of the measurement results to the other groups
Thursday 20/11/2025		Workshop 4: Advanced Modular Multilevel Converter
HVDC team activities		9am-12am: MMC Monophase — Voltage and Current Sensing: Configuration and Data Acquisition using STM32 and MATLAB/Simulink 12am-1 pm: Lunch Break 1pm-5pm: MMC Three-Phase — Voltage Acquisition using 18 Analog Inputs Testing the Converter under Load (Single-Phase)
Seminar		1pm-1:45pm: “A Review of the Bidirectional Buck-Boost DC-DC Converter: Design and Implementation” by Mr. Balaji Vunnava, DIT. 1:45pm-2pm: A presentation about the Fast Forest team's activities.
Friday 21/11/2025		Internal HVDC team activities
		9am-12am: Data Dashboard — Acquisition from STM32 on Simulink and Design of the Data Processing Interface; 1pm-2pm: Closing meeting and discussions on prospects