



## WORKING GROUP FORM

**CIGRE Study Committee:** D1

<b>WG number:</b> D1.40	<b>Name of Convener:</b> Michel Fréchet (CA)
<b>Title:</b> Functional Nanomaterials for Electric Power Industry	
<b>Terms of reference</b>	
<b>Background:</b> <p>There is a great deal of interest in nanomaterials as electrical insulation and a large amount of research has been carried out to measure the electrical properties of different base materials and nanofillers. Nanomaterials can be tailored to have specific properties and, as a result, used in different applications, for example, as electrical stress-grading materials, nanofluids and capacitors. For such “functional nanomaterials”, with properties that are utilizable in a wide range, it would be useful for potential users to know the types of applications in which nanomaterials can be used, how they work and their long-term performance.</p>	
<b>Scope:</b> <p>The work will collect information on the present and future applications of nanomaterials in electrical equipment and prepare a technical brochure that will include:</p> <ul style="list-style-type: none"><li>➤ Applications of nanomaterials, such as nanotubes, stress grading materials, metallic nanofillers, and nanofluids</li><li>➤ What are their characteristics and how they function</li><li>➤ Future trends and their potential</li></ul>	
<b>Deliverables and time schedule:</b> <p>2011: Kick-off meeting: structuring of work, plan and responsibilities 2013: Final report – Technical Brochure and Report in Electra</p>	
<b>Other SCs concerned by the work:</b> A1 (Rotating Electrical Machines), A2 (Transformers), A3 (HV Equipment), B1 (Insulated Cables), B2 (Overhead Lines) , B3 (Substations), B4 (HVDC & Power Electronics)	
<b>Approval by TC Chairman:</b> Klaus Fröhlich	<b>Date:</b> 11/11/2010