

## Diplomarbeit / Masters Project

<b>Project Summary:</b>	<p><b>Testing &amp; Evaluation of Fluoride Removal Technology in Tanzania</b></p> <p>The natural, ground as well as surface waters in the Northern Tanzania are highly contaminated with fluoride, resulting in severe prevalence of dental and skeletal fluorosis in people. Over the last three decades Prof Eli Dahi has studied and developed the bone char process in cooperation with the Ministry of Water and the University of Dar es Salaam. This process not only removes the fluoride from water, it also improves the water quality by removing other water physical and microbial contaminants and by adding essential minerals to the water. It is based on locally available cattle bone, installed in filters built with locally available materials. More than 600 units have been installed and much work remains to evaluate and further develop the technology, including applied research on how to upscale and develop the production technically, socio-economically as well as business wise.</p> <p>The following tasks can be discussed depending on candidate interests and qualifications;</p> <ul style="list-style-type: none"> <li>• Evaluation of performance of installed units and client support mechanisms.</li> <li>• Design and manufacture of household and community systems.</li> <li>• Research into mechanisms of fluoride removal and effect of water matrix.</li> </ul>
<b>Qualifications:</b>	<p><b>Studies in Natural/Environmental Sciences or Chemical/Process Engineering or equivalent (Uni, TH)</b></p> <p>Interest and preferentially experience in living/working in developing countries with unreliable water/electricity/internet availability. English language proficiency. Interest and at least preliminary experience in water quality &amp; analytical chemistry, water treatment.</p> <p>Flexibility, courage, resourcefulness, creative problem solving, common sense, cultural awareness, communication and ability to listen &amp; learn in a different cultural environment.</p> <p>Willingness to lead or contribute to the writing of a scientific publication.</p>
<b>Travel Arrangements:</b>	<p>The candidate is required to make his/her own arrangements for travel as well as health and other preparations (e.g. visa, insurance). The candidate will be received and helped with working environment and some transport and to find appropriate accommodation for lodging and boarding at the beautiful foothills of Mt Meru.</p>
<b>Institute/ Department:</b>	<p>Institute for Functional Interfaces (IFG) / Membrane Technology c/o KIT Campus North - <a href="https://www.ifg.kit.edu/english/3803.php">https://www.ifg.kit.edu/english/3803.php</a></p>
<b>Start Date:</b>	<p>Anytime / To be discussed</p>
<b>Project Leader:</b>	<p>Prof. Dr.-Ing. Andrea Schäfer, +49(0)721/608-26906, <a href="mailto:Andrea.Iris.Schaefer@kit.edu">Andrea.Iris.Schaefer@kit.edu</a></p>
<b>Supervisor:</b>	<p>Prof. Eli Dahi (Tanzania Partner) Defluoridation Technology Project (DTP), Usa River, Tanzania +255(0)752 225 507 / 789 225 508</p>