



## HUMBOLDT INTERNSHIP PROGRAM 2020

## PROJECT DESCRIPTION

Name of Institute	Bundesanstalt für Materialforschung und -prüfung (BAM)
Name of Laboratory/Research Group	Division 2.2 Reactive Substances and Systems
Weblink	<a href="http://www.bam.de">www.bam.de</a>
Subject of Lab Project	Oxidation of cellulose for classification purposes
Supervisor	Dr. Marcus Malow <a href="mailto:marcus.malow@bam.de">marcus.malow@bam.de</a>
Required Level of Studies	<input type="checkbox"/> Advanced undergraduate students (3rd or 4th year) <input checked="" type="checkbox"/> Master's level students (1 <sup>st</sup> or 2 <sup>nd</sup> year) <input checked="" type="checkbox"/> PhD students
Project Description	<p>In 2015 a new test for oxidizer classification (UN TEST O.3) was established by the UN (Recommendations on the Transport of Dangerous Goods) for transport regulations and GHS. For classification the potential oxidizing substance is mixed with cellulose material and the oxidizing potential of this mixture is determined by its burning rate. The burning rate of mixtures of reference oxidizers with cellulose are used to distinguish between weak, medium and strong oxidizers. During a recent performed Round Robin Test it turned out that this distinction may not work properly in all cases. In this project we want to investigate this problem using different cellulose materials in the UN Test O.3 and determine possible influencing parameters to the burning rate.</p>
Tasks	<ul style="list-style-type: none"> <li>• Perform burning rate tests (UN Test O.3) in lab</li> <li>• Investigate cellulose properties at which are influencing the burning rate</li> <li>• Communicate the results in a lab report. If applicable the results may be published in a peer-reviewed journal</li> </ul>
Requirements	<ul style="list-style-type: none"> <li>• Good academic results in chemistry, chemical engineering or comparable (bachelor at least)</li> <li>• Ability to work effectively with others</li> <li>• Good knowledge of Microsoft Office software</li> </ul>
Language	Fluent in English, German is desired but non decisive
Timing	May 11-July 31, 2020
Additional information	<p>The Bundesanstalt für Materialforschung und -prüfung (BAM) is a senior scientific and technical Federal institute with responsibility to the Federal Ministry for Economic Affairs and Energy. It tests, researches and advises to protect people, the environment and material goods. Safety creates markets. BAM sets and represents high standards for safety in technology and chemistry for Germany and for its global markets, to further develop the</p>



	successful "Made in Germany" culture of quality. BAM fulfils this role through its dedicated employees.
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