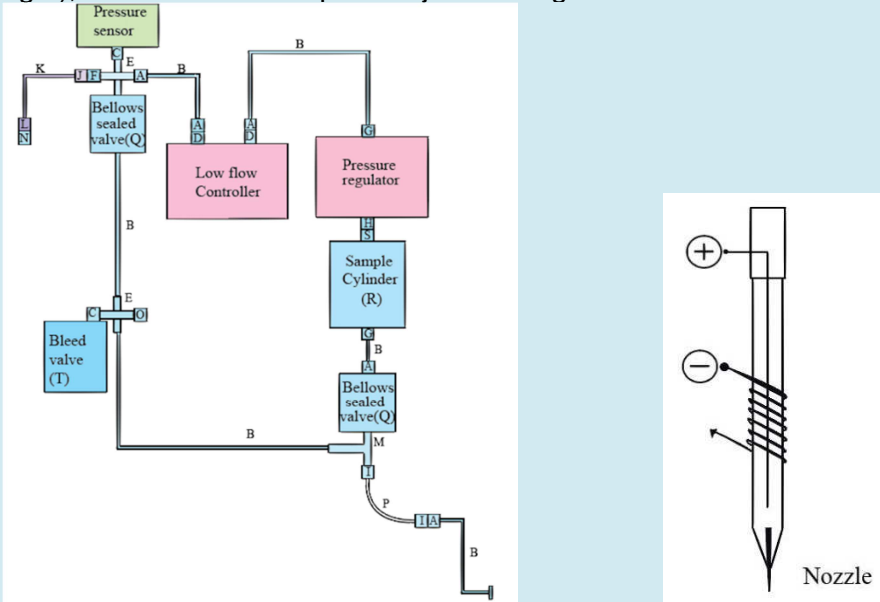


Titre du sujet proposé	Testing a microplasma-liquid reactor
Encadrant(s)	David PAI
Lieu du Bureau d'Etude	H2
Résumé	<p>Microplasmas generated in gases but in contact with liquids are investigated for liquid chemistry induced by plasma chemistry in the gas phase. Various plasma species such as radicals, ions, electrons and photons can interact with the liquid interface, initiating reactions that cascade into the liquid phase. At atmospheric pressure a large range of commonly used liquids and solutions is available for exploring novel plasma-liquid systems, leading to applications in water treatment, medicine, and chemical analysis. Also, the formation of microplasmas with liquids opens new chemical pathways to synthesize or functionalize nanomaterials directly in solution.</p>
Travail demandé/Résultats attendus	<p>The objective of this internship is to build a functioning microplasma-liquid reactor, starting with achieving proper airtight performance in the argon delivery system (Figure 1, left). A microcapillary tube is connected to the exit of this system (Figure 1, right), in which the microplasma jet will be generated.</p>  <p>Figure 1 : Schematic diagram of low-pressure system (left) and microplasma jet reactor (right).</p>
Livrables	<ul style="list-style-type: none"> -Demonstration of leak-free performance of argon delivery system -Generation of argon microplasma jet
Compétences requises	Vacuum systems, electronics