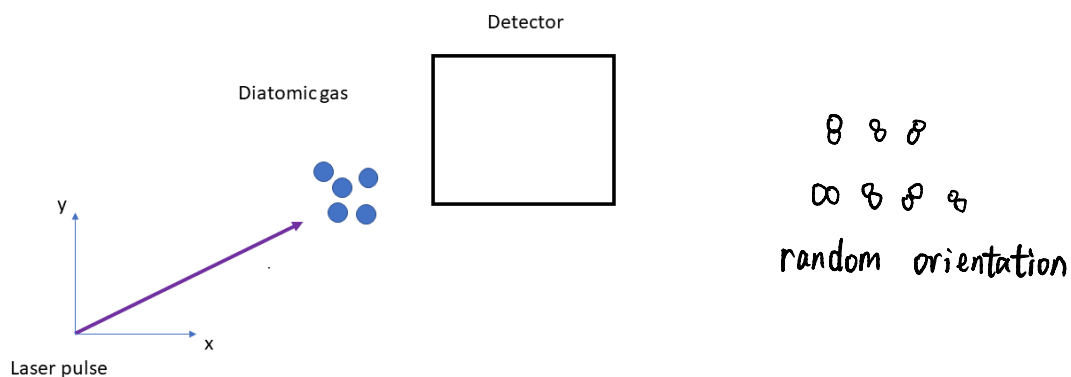


Upload your finished worksheet as a single pdf file on moodle before the next class session in order to get participation credit.
 Try to keep your books closed. Discuss with your fellow students to come to an answer.
 Show your work.

Name: _____

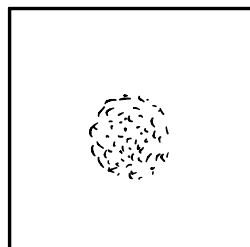
1. When a laser pulse dissociates a diatomic and linear gas molecule, the spatial distribution of the fragments on the detector depend on the polarization of the laser and the experimental setup. Indicate the orientation of the molecules (blue dots in image) with an arrow. Draw the expected image on the detector for a laser with polarisation in the x-z-plane and the y-z-plane polarized light (discuss).



Gas molecules are not aligned, so the orientations of molecules are randomly distributed. Bond broken for diatomic atoms is along bond orientation.

So no matter the polarization of bond-broken laser (x-z or y-z), the flying fragments of bond-broken events are isotropic.

On the detector



2. Now the molecules are aligned with another laser and ionized during optimal alignment. Indicate the orientation of the molecules (blue dots in image) with an arrow. Draw the expected detector images.

