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PARTICULATE MATTER MEASUREMENTS USING CAMERA PHONES

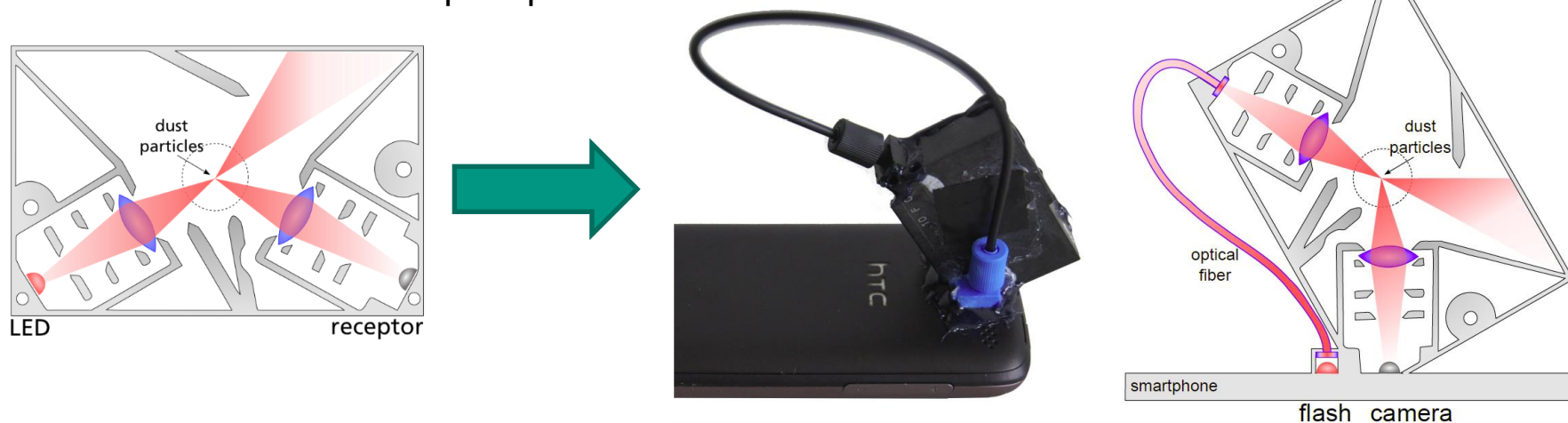
Particulate Matter Measurements Using Camera Phones

- Participatory Sensing: Individuals in a community collect and share their data for a common goal / the benefit of all
- Examples:
 - Noise pollution maps of cities
 - Requires no extra devices
 - Air Quality
 - Gases (O₃, CO, CO₂, NO₂, VOC,...), **Particulate Matter**
- Problems / issues:
 - Current solutions are inadequate for broad use
 - Reference equipment is expensive, static and features low sampling rates
 - Mobile solutions still expensive (~1000\$)
 - Inexpensive and mobile devices are needed

Particulate Matter Measurements Using Camera Phones

■ Past research:

- Particulate matter sensing with smartphones
 - Design of an existing cheap optical dust sensor was retrofitted to a smartphone
 - Proof-of-concept implementation and first evaluation



■ Next Task:

- Thorough research and evaluation of camera-based dust sensing
- Redesign of prototype to improve accuracy, form factor, etc.

■ Qualifications:

- Interest, ideally experience with electrical engineering and/or computer vision