Molybdenum Disulfide, a transition metal dichalcogenide has been the focus of numerous publications recently mainly due to the success of graphene and the increase interest on other 2D materials, proving that dimensionality plays a significant role on the materials properties. Besides, the absence of a bandgap in graphene makes MoS2 particularly interesting as it is an abundant and natural occurring n-type semiconductor.

Back in the 70’s Tributsch was the pioneer to exploit MoS2 electrodes for solar cells applications but back then the technology to achieve thin layers of the material was not as evolved as it is to date. Nevertheless, limitations of scalability due to expensive or low yield manufacturing methods justify the focus of the present study.

In the photoconductivity experiments we measured thickness and wavelength dependency of the material. Light sources were a halogen lamp together with a monochromator. Two types of samples were tested: MoS2 deposited on glass or pressed into pills both with gold contacting electrodes. Both these methods are scaleable. Results show that molybdenum disulfide is photoconducting.

References: