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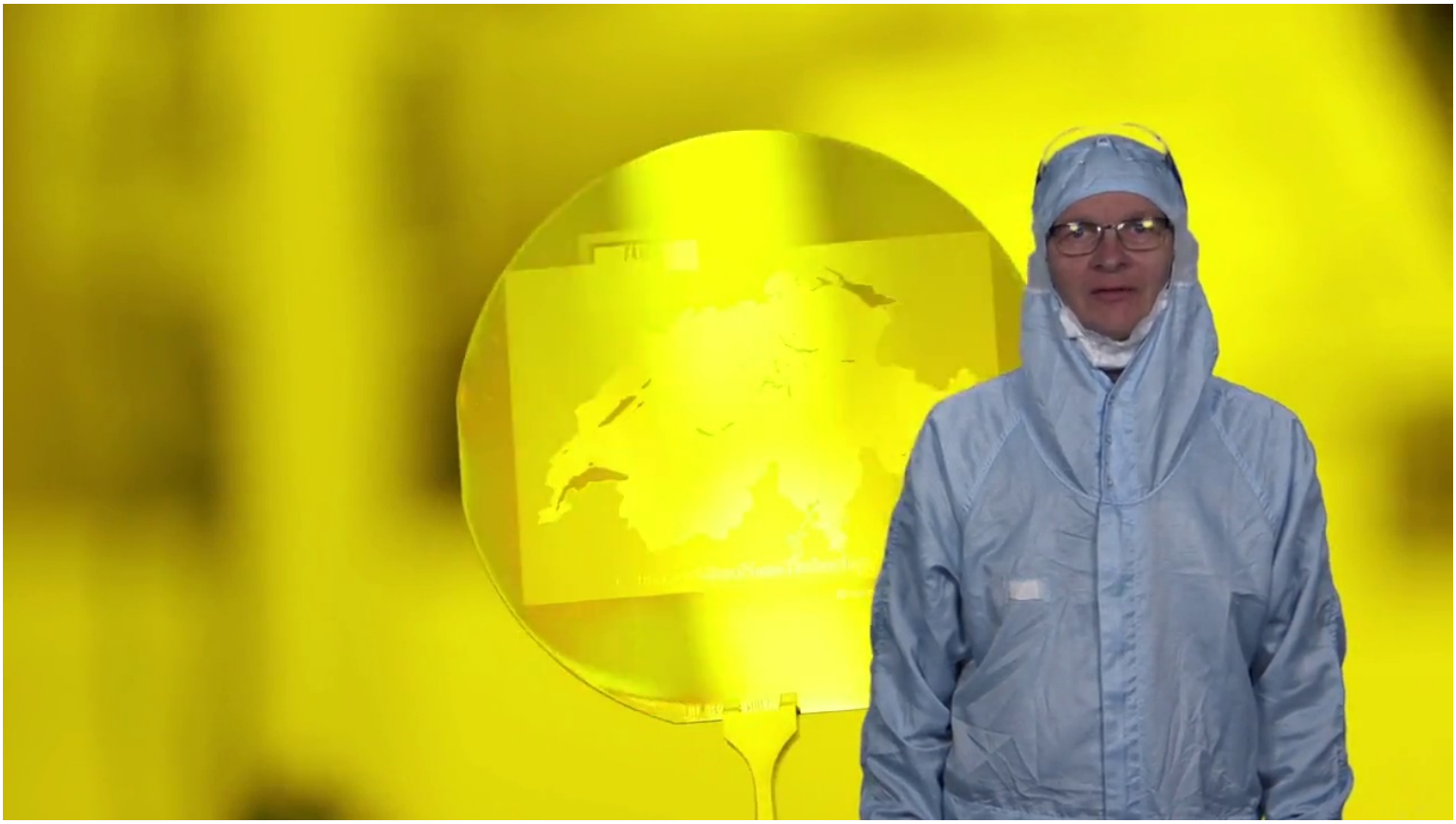
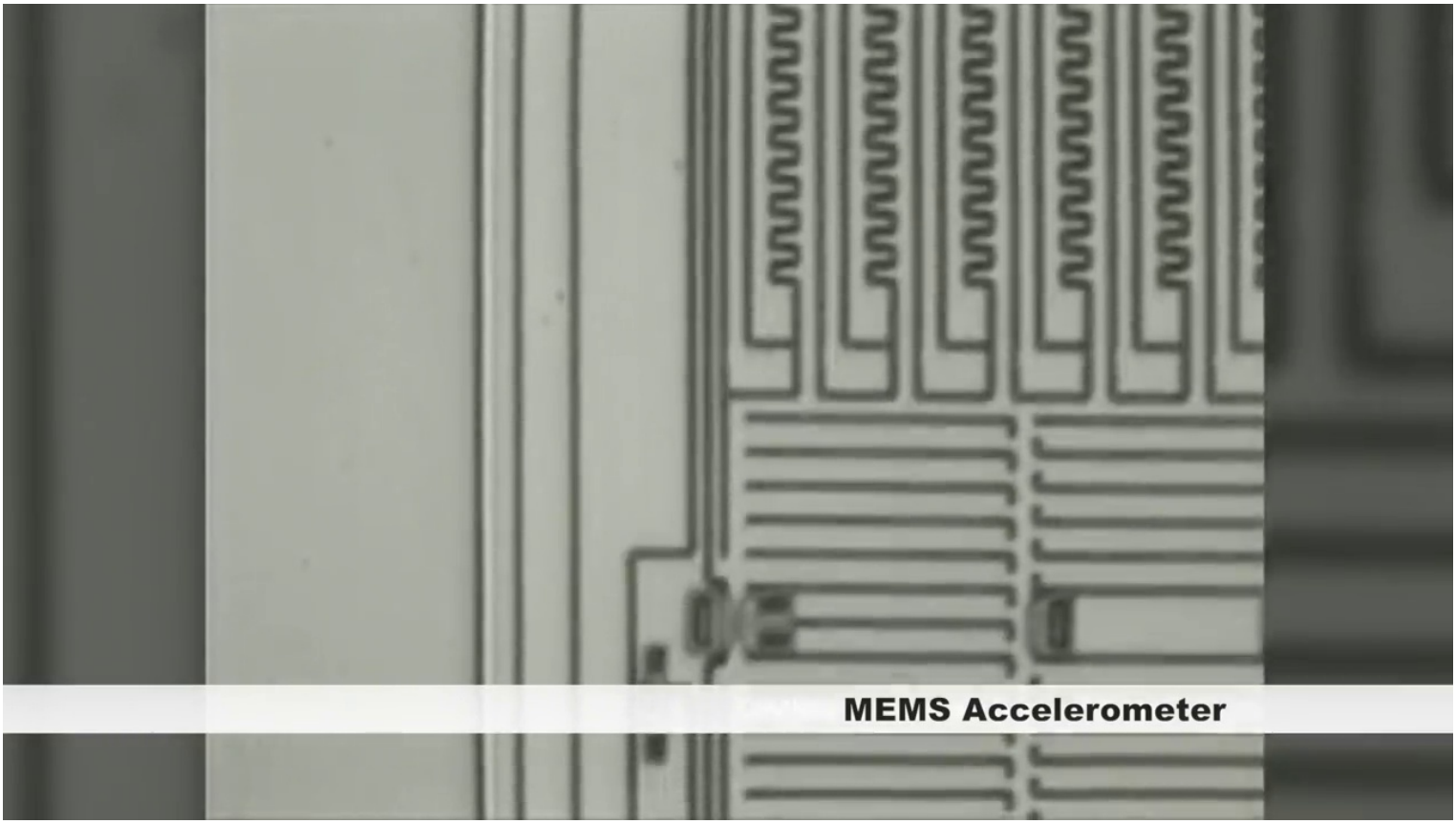
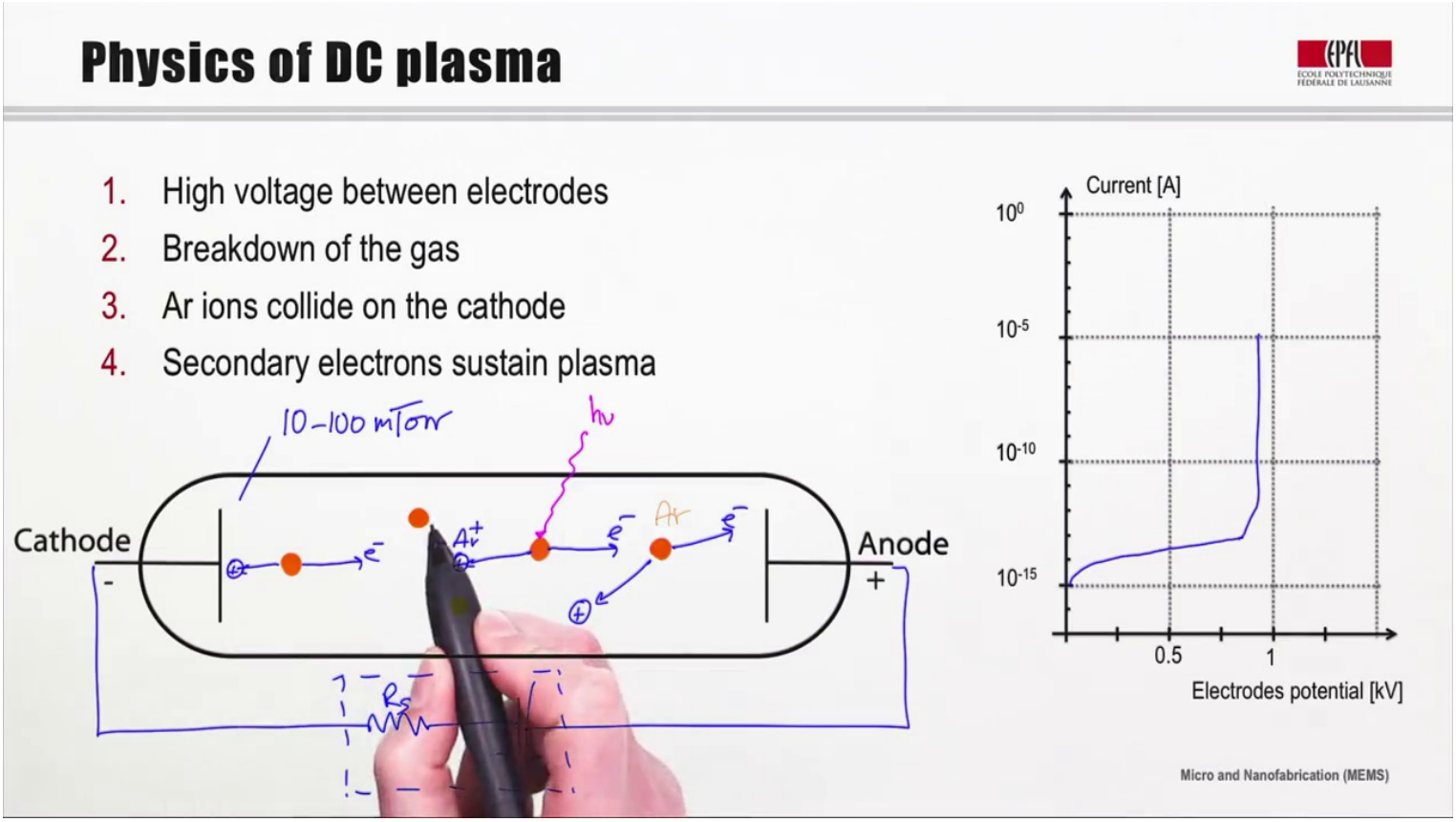
[Music] Welcome to our mooc in micro and nano fabrication. My name is Juergen Brugger and I am one of the co-authors and teachers of this mooc. My name is Martin Gijs and I am the second co-author and teacher of this mooc. Together we will show you in the following lectures the basics of micro and nano fabrication techniques. We will show you in particular how they are carried out in a typical clean room environment.



Today, we are constantly using micro devices so called MEMS that help us communicating and navigating measure our health parameters such as blood pressure and glucose level, monitor and control automotive safety parameters, such as airbags and tyre pressure, enable us to enjoy realistic augmented reality and video gaming etc



These devices are ubiquitously available today becasue they can be fabricated in large volumes and cost efficiently The goal of this course is to introduce you to the fundamentals of the fabrication techniques that are behind these success stories which actually have enabled them. After this introduction, we would give you chapter by chapter the theoretical basis to understand the principal mechanisms of thin film deposition, lithography, etching and other techniques. Each chapter is completed by illustrations and examples



so that you can clearly see the link between a particular fabrication step and the resulting functionality in the micro device. [Music] During this mooc lectures, I will first show some well known MEMs devices that we are using in our everyday life I will be showing particular how micro and nano fabrication has enabled their manufacturing in high volumes and at low cost. I will then take over to show you how a clean room is designed and operated to ensure that the fabricated MEMs devices are as clean as possible. We both we then follow up by describing the basics of the various fabrication steps such as thin film formation, lithography as well as etching. We hope that you enjoyed our mooc lecture. So let's get started! [Music] Bye-bye. [Music]