The recycling of CMOS technology

Today's world is dominated by silicon technology, while continuing to follow a rapid innovation trend thanks to Moore's Law and other sources such as the demand for IA. But with such a rapid grow and so many usages of this technology, it becomes important that we start thinking about how our chips are made and most importantly how they are recycled. At the heart of these questions, there are a lot of problems related to engineering, economic incentive, the environment and even geopolitical. In no means we will be able to treat every aspect of it, but we hope to convey enough general information to understand some in and out of how silicon technology is recycled and why it is important.

To achieve it, we will speak about the life cycle of silicon, explain how it is extracted and processed to make silicon wafers, showing that even if the material is abundant, it still has an environmental impact. Then continue with rare earth elements, as they are a big part of electronics layouts, and useful for modern technologies, yet they come with their own disadvantage. Then talk about some

Finally, we would address the technical aspect of recycling silicon, rare earth elements, to see how the process works and would enable a more sustainable life cycle, to then conclude this presentation on the challenges recycling these materials can encounter : while it sure is a win for the environment and better availability of resources, economic barriers and the high energy needed for such processes stand in the way of this practice becoming mainstream.

References:

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