

PRESENTATION

Dr. Véronique Cremers

CoCooN Research Group, Ghent University |
Post-doctoral researcher

Dr. Véronique Cremers already worked at University Ghent from 2014 until 2018. There she studied the conformality of ALD and conformal coating of powders to improve oxidation/corrosion resistance in depth. Afterwards she worked at Plasma Electronic GmbH on the development of ALD/CVD barrier coatings for the packaging industry in Germany. Since 2020 until now she is back in the CoCooN Research Group of University Ghent and deals with the study of conformality of complex ALD coatings.



"3D Monte Carlo simulations for a better understanding of conformality of ALD "

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One of the key factors of Atomic layer deposition (ALD) is its capability to deposit highly conformal coatings on 3D (nano)structured surfaces. This feature has rendered ALD a mainstream technique in microelectronics and has triggered growing interest in ALD for a variety of nanotechnology applications, including energy technologies.

To get a better understanding of the conformality of ALD and to be able to predict the required exposure for the conformal coating of 3D structures, we developed a 3D Monte Carlo simulation model. Based on this model, we introduced the structure independent concept of Equivalent Aspect Ratio (EAR) which enables a more standardized and direct comparison of reported results concerning the conformality of ALD processes. Other than the conventional aspect ratio, the EAR provides a measure for the ease of coatability by referring to a cylindrical hole as the reference structure.