



# 2021 TECHCET'S CRITICAL MATERIALS REPORT ESSENTIALS™

## ELECTRONIC GASES SUPPLY-CHAIN & MARKET ANALYSIS

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## RESEARCH METHODOLOGY

TEHCET employs subject matter experts having first-hand experience within the industries which they analyze. Most of TEHCET's analysts have over 25 years of direct and relevant experience in their field. Our analysts survey the commercial and technical staff of IC manufacturers and their suppliers, and conduct extensive research of literature and commerce statistics to ascertain the current and future market environment and global supply risks. Combining this data with TEHCET's proprietary, quantitative wafer forecast results in a viable long-term market forecast for a variety of process materials.

## READER'S NOTE

This report represents the interpretation and analysis of information generally available to the public or released by responsible agencies or individuals. Data was obtained from sources considered reliable. However, accuracy or completeness is not guaranteed.

For more comprehensive information, see TEHCET's Critical Materials Report(TM) on Electronic Gases at [TEHCET.COM](http://TEHCET.COM)



Jonas Sundqvist, Ph.D. – Sr. Technology Analyst of TECHCET— covers Electronic Gases and ALD & CVD precursors and related technologies, and the co-chair of the Annual Critical Materials Council (CMC) Conference. His over 20 years of work experience includes Group Leader of the Thin-Film Technologies Group at The Fraunhofer Institute for Ceramic Technologies and Systems (IKTS) in Germany, Clean Room Operations Manager for Lund Nano Lab, Lund University in Sweden and Group Leader of the ALD & High-k devices group at Fraunhofer's Center Nanoelectronic Technologies (CNT) in Germany, which included 28nm node work for GLOBALFOUNDRIES Fab1.

Previously, at Infineon Memory Development Centre (MDC), he developed high-k and metal nitride ALD processes, and at Qimonda, he was a materials manager focused on the ALD/CVD precursors supply-chain. He holds a Ph.D. and an M.S. in inorganic chemistry from Uppsala University, Sweden & Institute for Micromanufacturing, Louisiana Tech, USA, a B.S. in electrical and electronics engineering from Lars Kagg, and nine patents and 40 related scientific publications.

Jonas Sundqvist is on the Scientific Committee for AVS ALD and has co-chaired ALD2016 Dublin Ireland, and the annual EFDS ALD for Industry Workshop in Germany.

## Jonas Sundqvist, Ph.D.



**Jonas Sundqvist,**  
Sr. Technology Analyst of TECHCET,  
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