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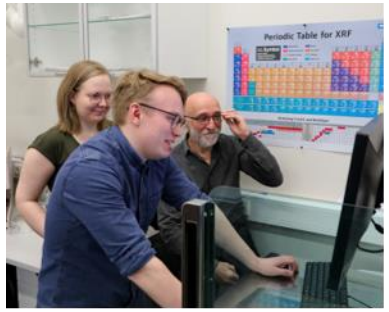
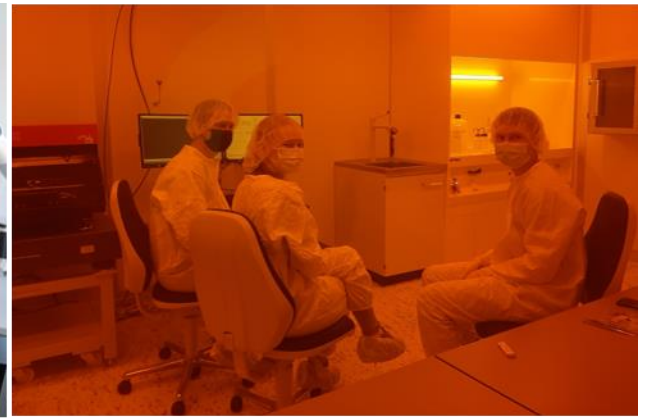
1632

Kaupo Kukli

Tartu Ülikool, Füüsika instituut, kiletehnoloogia laboratoorium

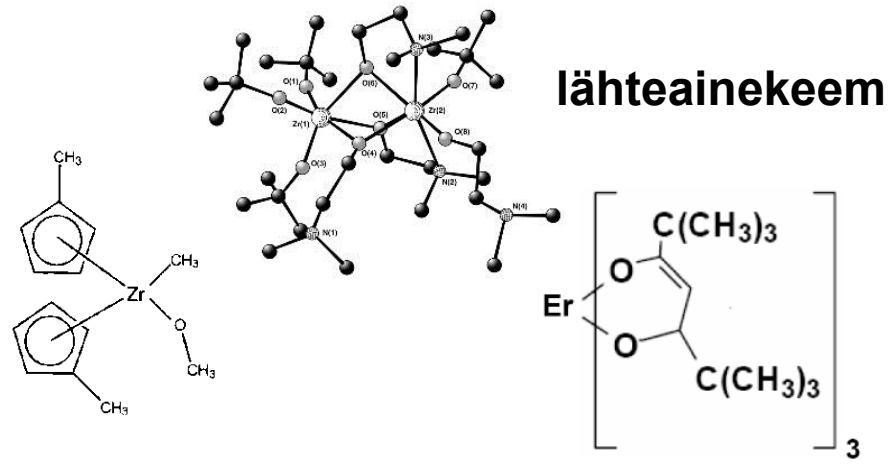




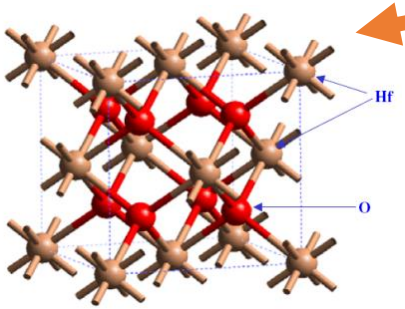
Kiletehnoloogiline teadusarendustöö

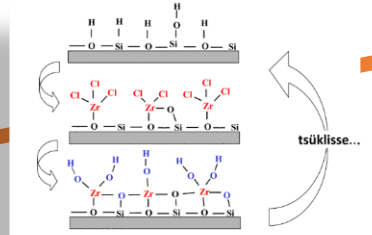
kiletehnoloogia kui protsessiinseneeria

lähteainekeemia



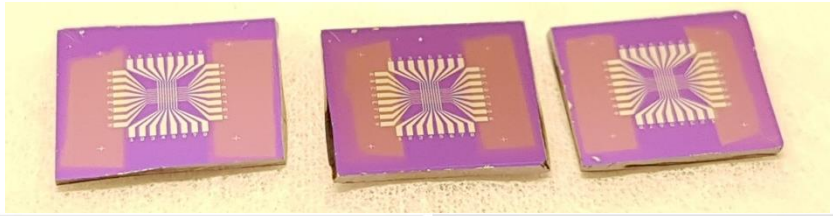
tahkisfüüsika (struktuur, kõvadus, elastus, defektsus, polariseeritavus)

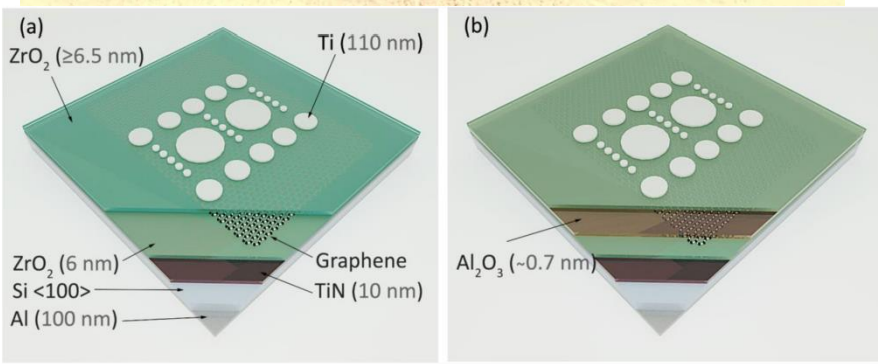




reaktsioon $ZrCl_4 + 2H_2O = ZrO_2 + 4HCl$
jagatud pinnal kaheks etapiks, tahke materjali kiht kasvab aatomkihthaaval

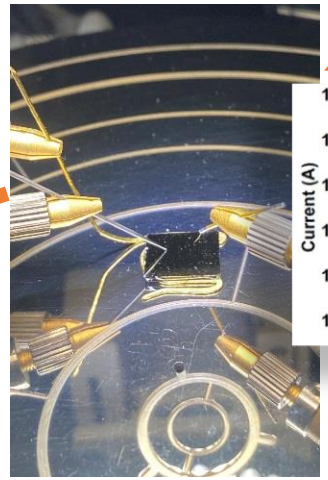
litograafia, kontakteerimine, prototüübid

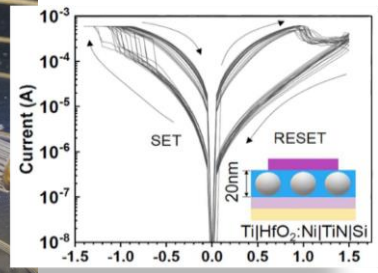




Kahro *et al*. doi: 10.1116/6.0000390

funktsionaalsete omaduste evalueerimine





publitseerimine, väitekirjad, koostöö partneritega

2

röntgenfluorestsentsspektromeetria

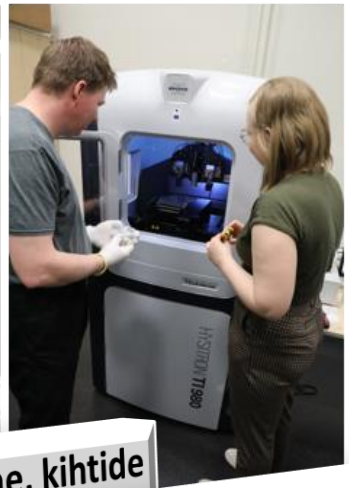
transmissioonelektronmikroskoopia

Volt-amper ja voltfaradkarakteristika

maskivaba fotolitograafia puhasruumis (ISO klass 5)

aatomkihtsadestusreaktorid

nanoindenteerimine, kihtide kõvadus ja elastsus

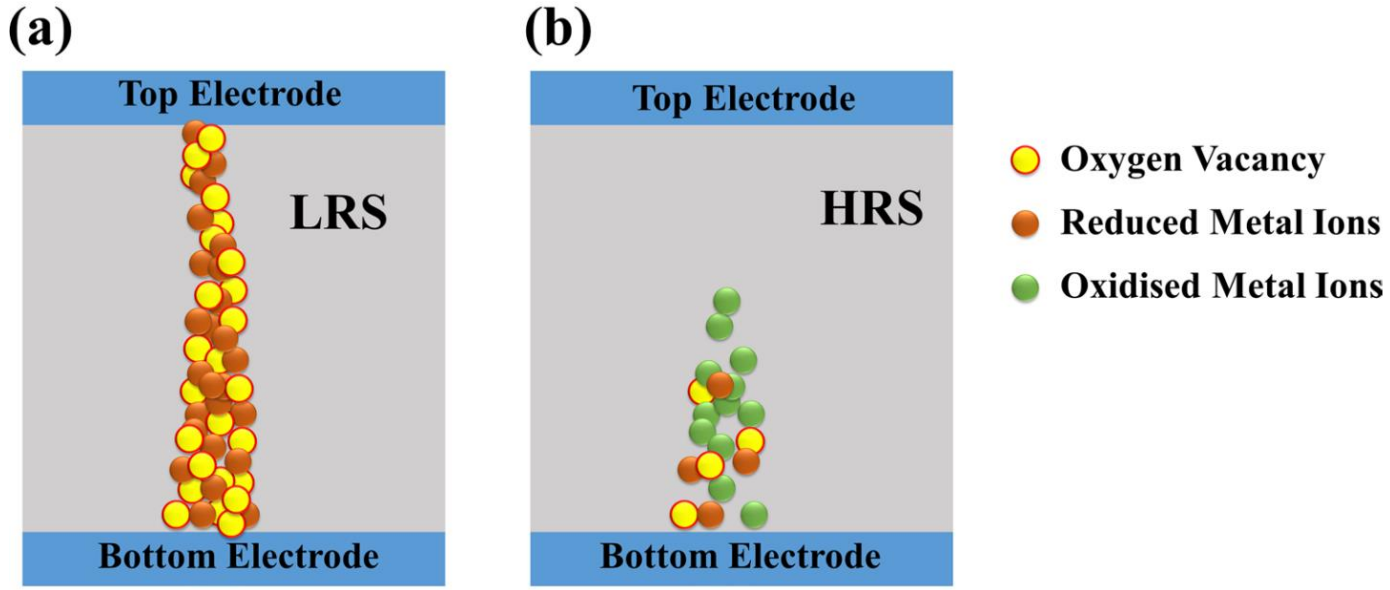


skaneeriv elektronmikroskoopia

röntgendifraktomeetria

projektijuhtkond

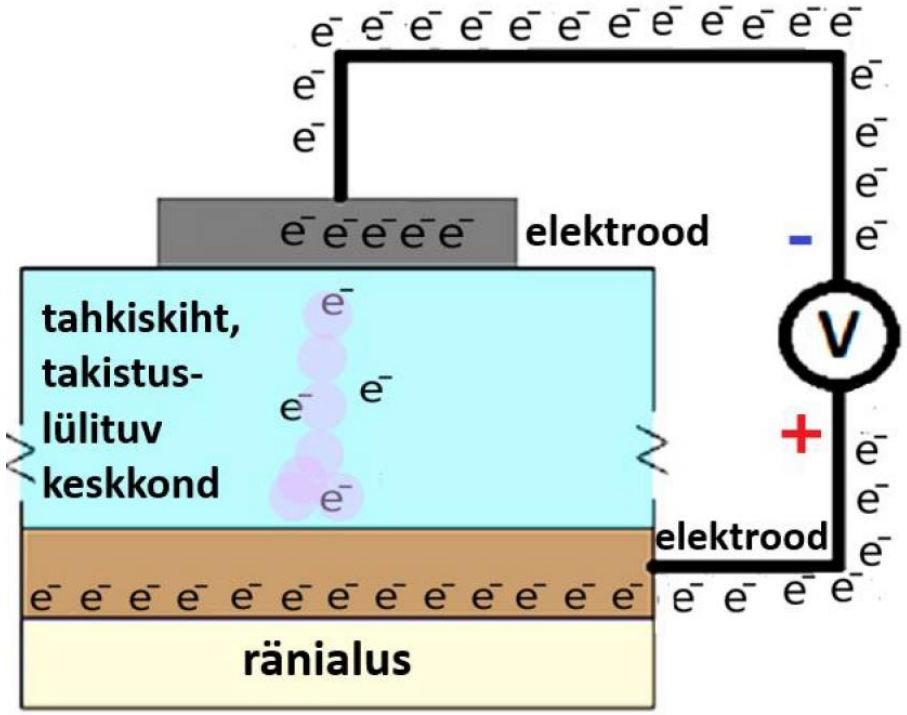
Takistuslülitusnähtused andmetöötluseks loodud tehismaterjalides
PRG753



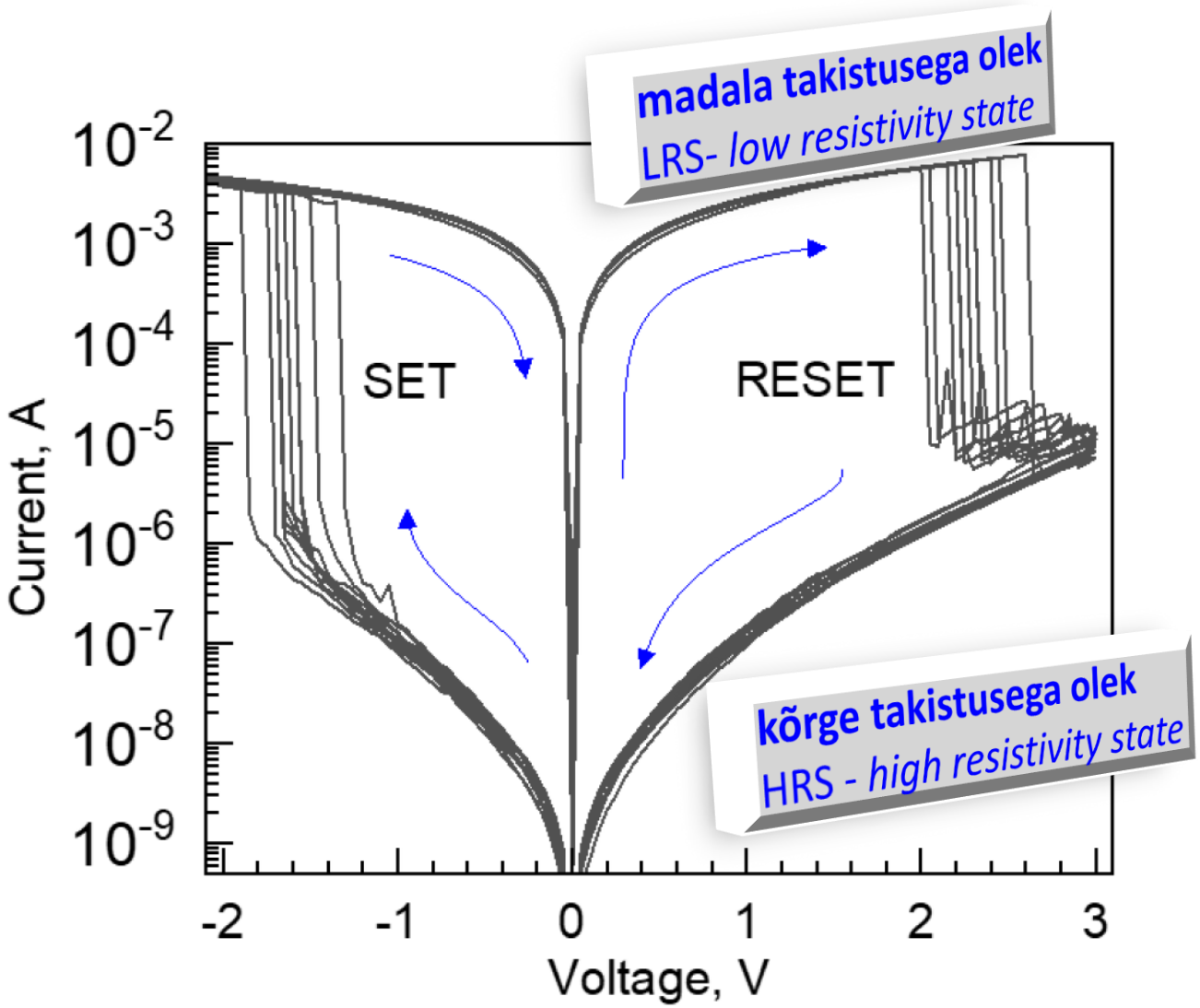
Schematic representation of the CF in valence change RS memory

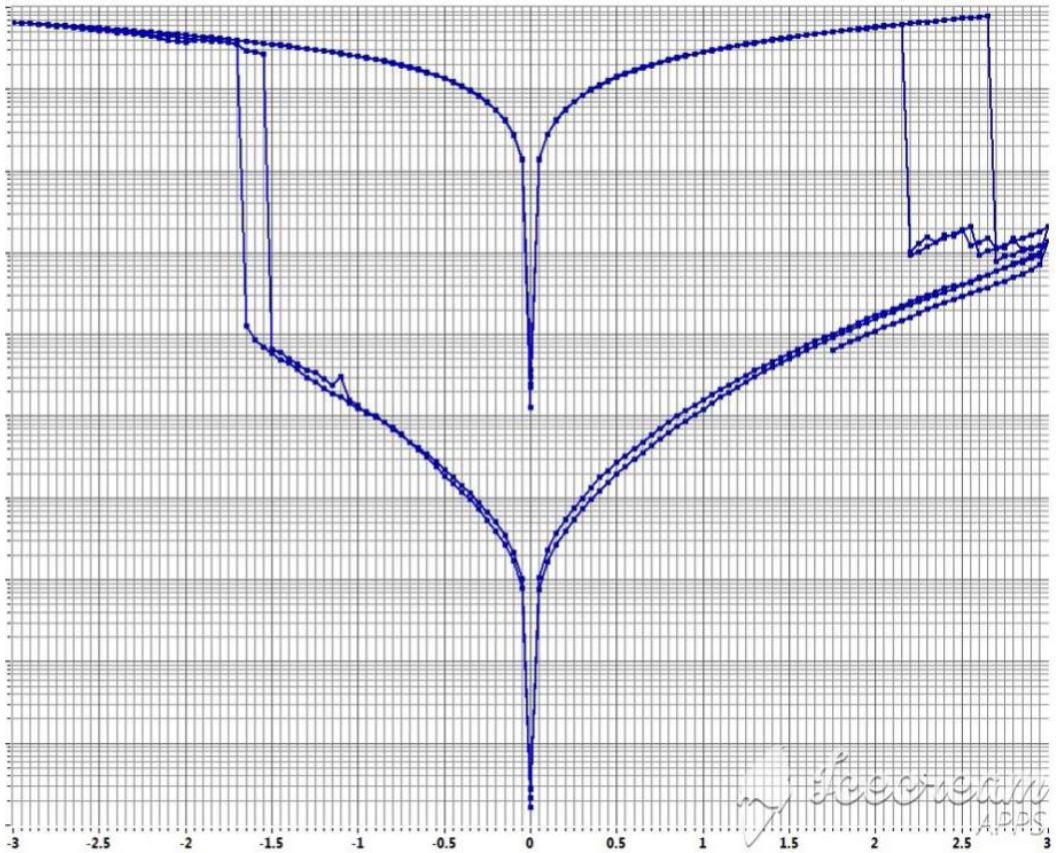
CF – conductive filament; RS – resistive switching

Munjal and Khare, J. Phys. D: Appl. Phys. 52 (2019) 433002



Courtesy: Joonas Merisalu


madala takistusega olek
LRS- low resistivity state
SET
RESET
kõrge takistusega olek
HRS - high resistivity state
Current, A
Voltage, V



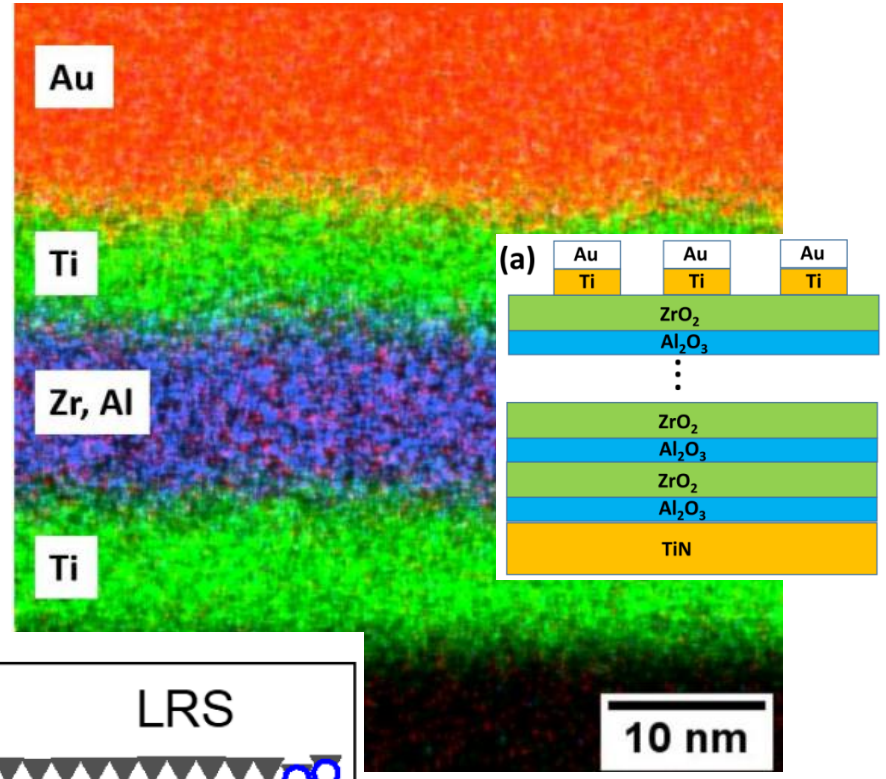
coatings

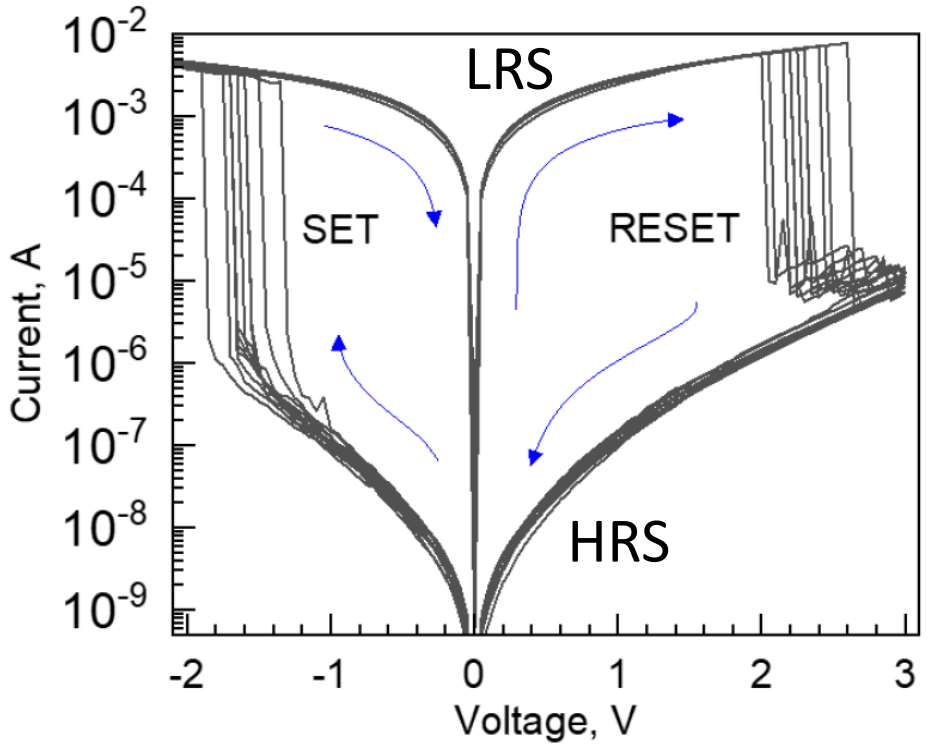
MDPI

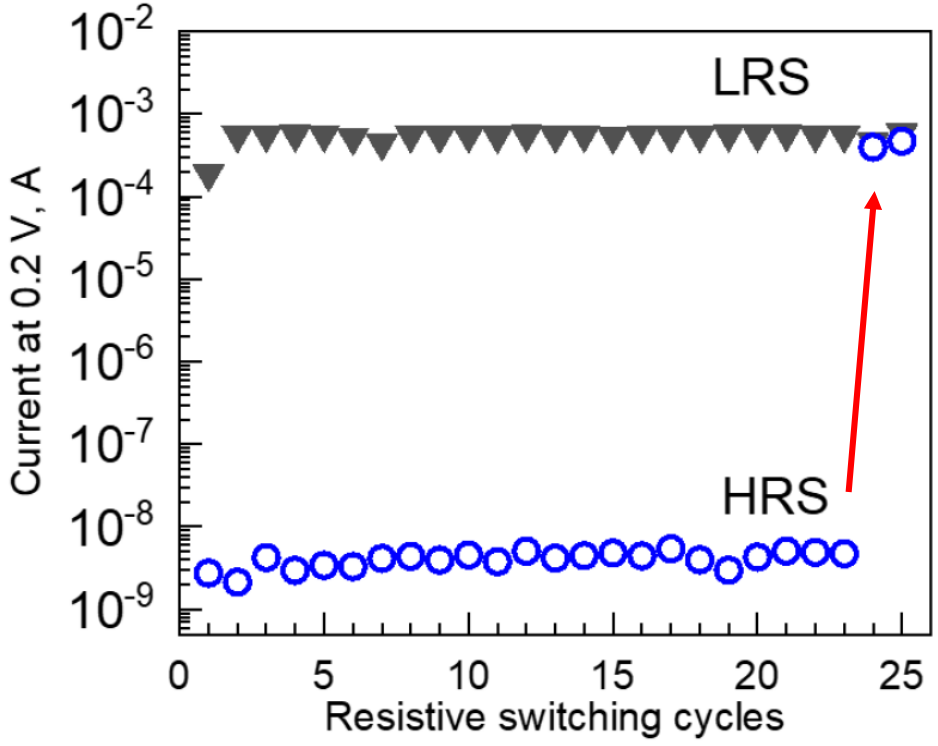
Article

Structure and Electrical Properties of Zirconium-Aluminum-Oxide Films Engineered by Atomic Layer Deposition

Joonas Merisalu *, Taivo Jõgiaas, Toomas Daniel Viskus, Aarne Kasikov, Peeter Ritslaid, Tanel Käämbre, Aivar Tarre, Jekaterina Kozlova, Hugo Mändar, Aile Tamm, Jaan Aarik and Kaupo Kukli







Solid-State Electronics 186 (2021) 108114

Contents lists available at ScienceDirect

Solid State Electronics

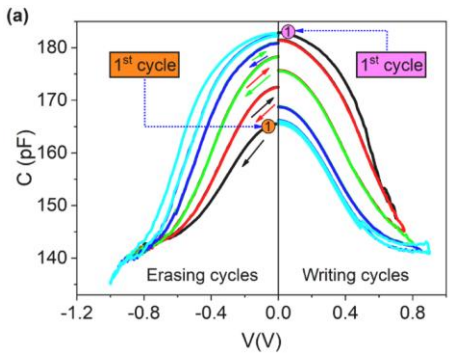
journal homepage: www.elsevier.com/locate/sse

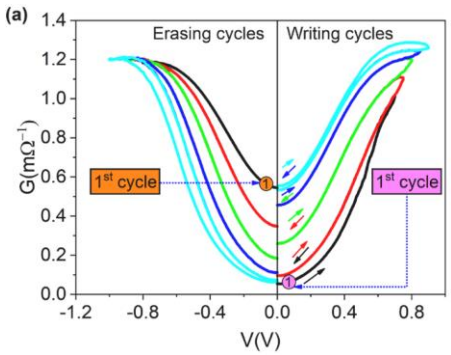
Analysis of the performance of Nb_2O_5-doped SiO_2-based MIM devices for memory and neural computation applications

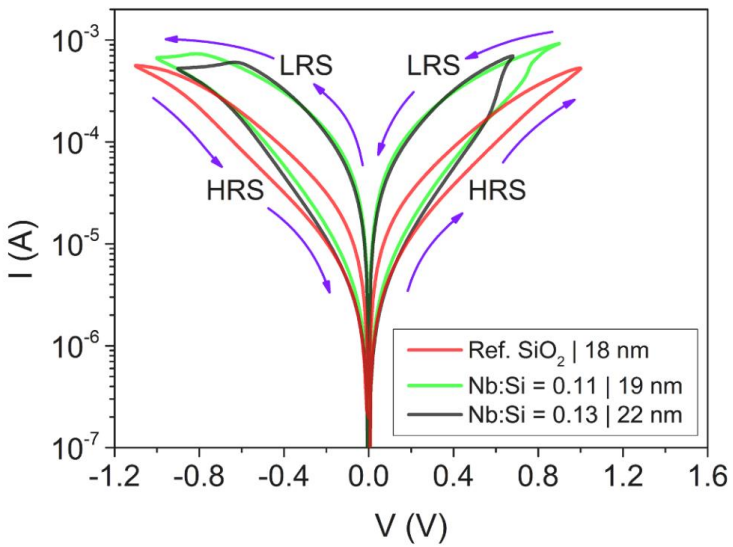
$Si_2(NHEt)_6$
heksakisetüülaminodisilaan
ja osoon

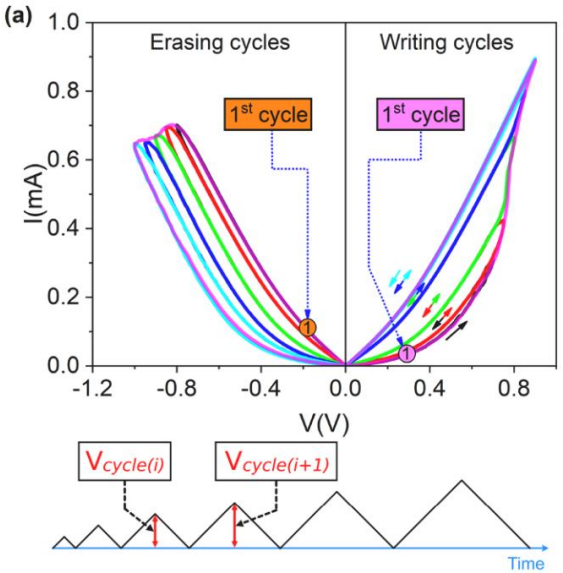
Ó.G. Ossorio [a], G. Vinuesa [a], H. García [a], B. Sahelices [a], S. Dueñas [a], H. Castán [a,*], M. Ritala [b], M. Leskelä [b], M. Kemell [b], K. Kukli [c]

[a] Department of Electronics, University of Valladolid, Paseo de Belén 15, Valladolid E-47011, Spain
[b] Department of Chemistry, University of Helsinki, P.O.Box 55, Helsinki FI-00014, Finland
[c] Institute of Physics, University of Tartu, W. Ostwald 1, Tartu 50411, Estonia









Materials Science and Engineering B 282 (2022) 115797

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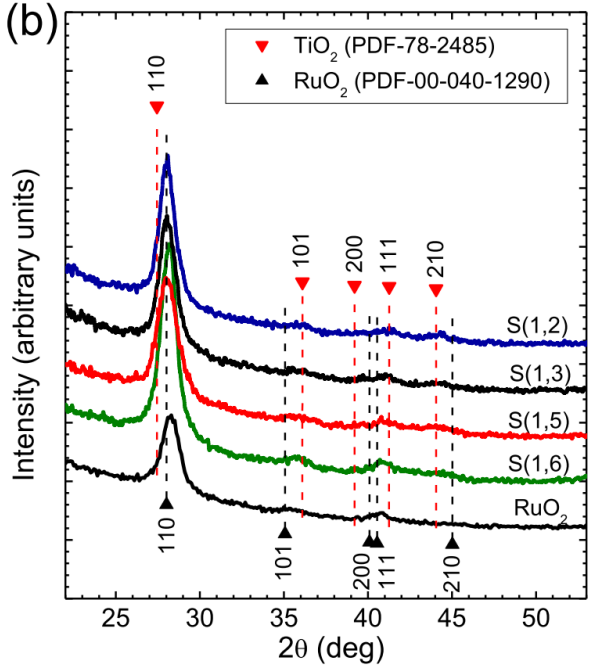
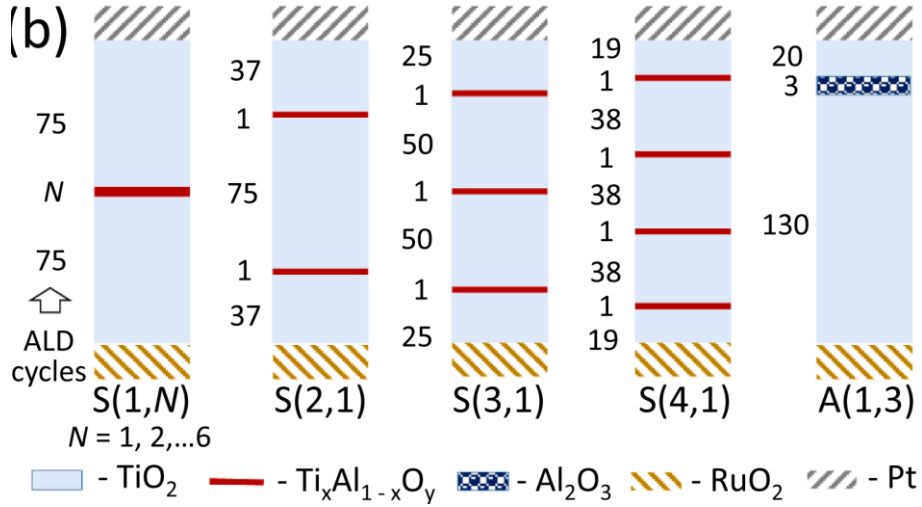
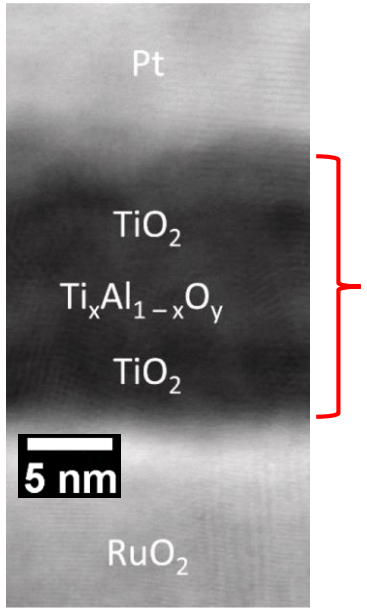
Engineering of atomic layer deposition process for titanium-aluminum-oxide based resistively switching medium

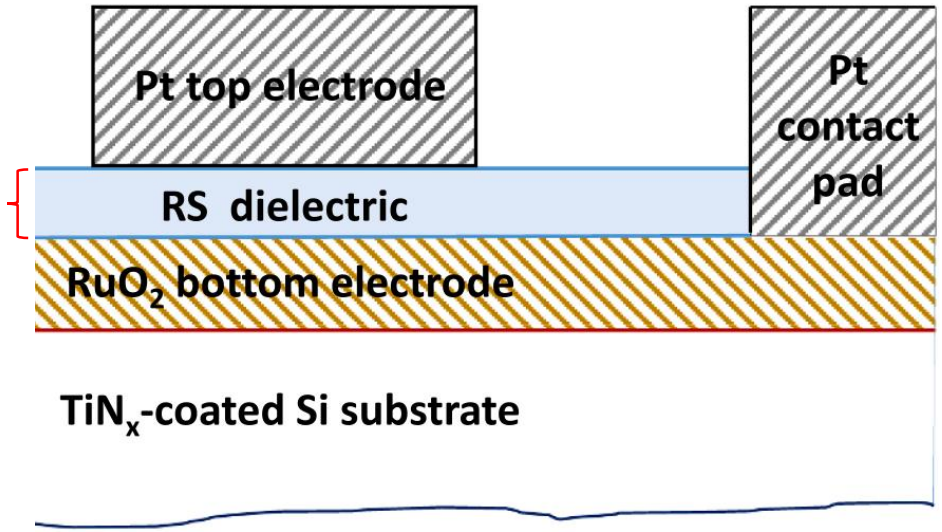
Joonas Merisalu *, Tõnis Arroval, Aarne Kasikov, Jekaterina Kozlova, Mihkel Rähn, Peeter Ritslaid, Jaan Aarik, Aile Tamm, Kaupo Kukli

Institute of Physics, University of Tartu, W. Ostwaldi 1, EE50411 Tartu, Estonia









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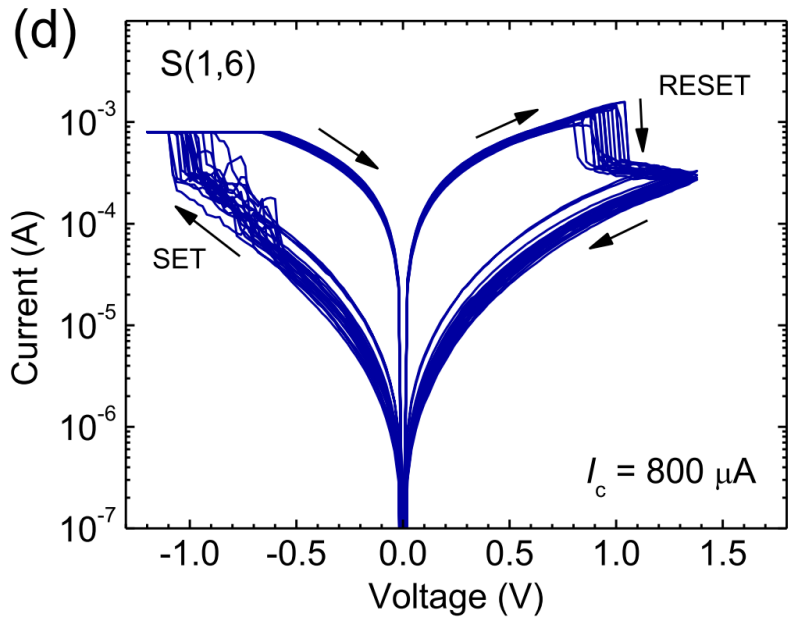

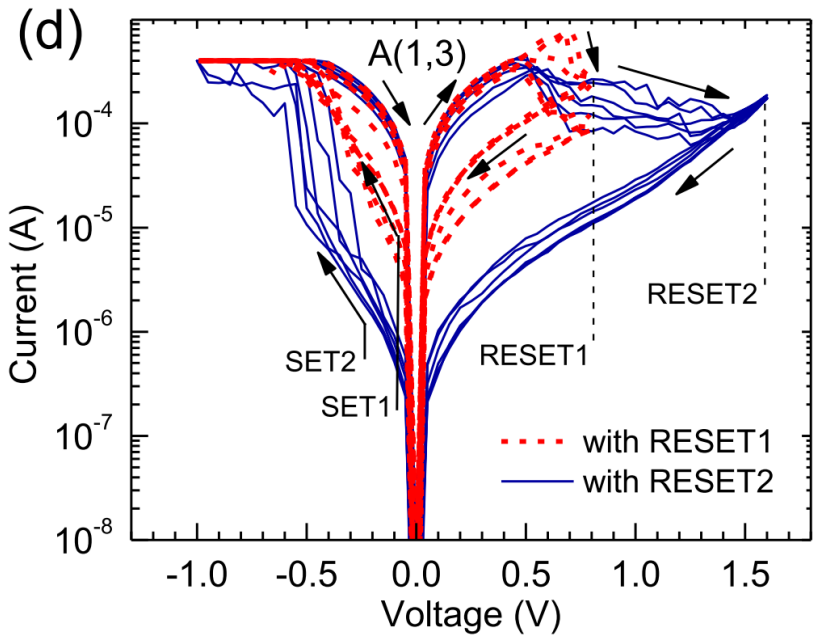

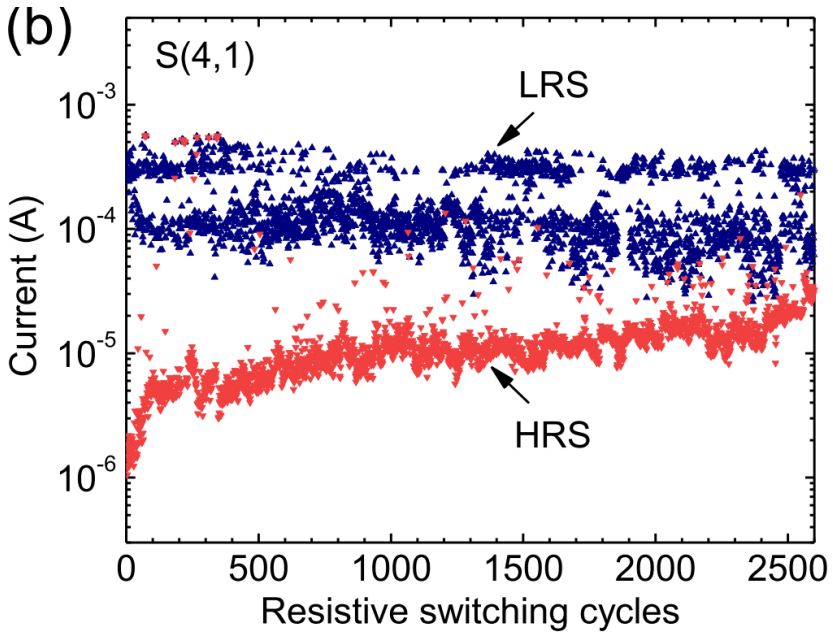

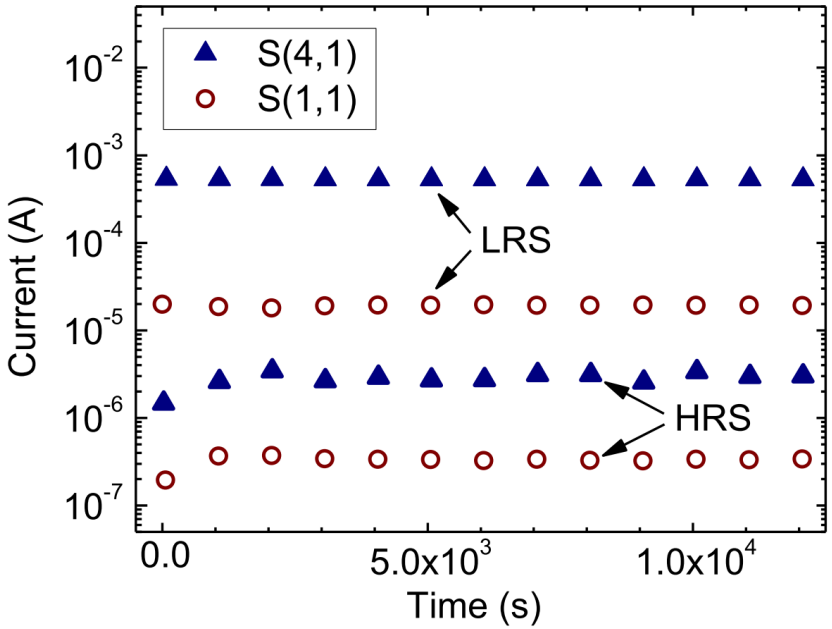

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Tauno Kahro,* Aivar Tarre, Tanel Käämbre, Helle-Mai Piirsoo, Jekaterina Kozlova, Peeter Ritslaid, Aarne Kasikov, Taivo Jõgiaas, Guillermo Vinuesa, Salvador Dueñas, Helena Castán, Aile Tamm, and Kaupo Kukli

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