

CURRICULUM VITAE

PERSONAL DATA

Name: Minh Duc NGUYEN
Date of birth: 15-03-1977
Status: Married
Nationality: Vietnamese
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EDUCATION

10/2006-06/2010 Ph.D candidate,
Inorganic Materials Science (IMS), MESA+ Institute for
Nanotechnology, University of Twente (UT), The Netherlands
*Title: "Ferroelectric and Piezoelectric properties of epitaxial
PZT films and devices on silicon"*
*Supervisors: Prof. Dr. D. H. A. Blank and Prof. Dr. A. J. H. M.
Rijnders*

08/1999-07/2001 M.Sc candidate,
International Training Institute for Materials Science (ITIMS),
Hanoi University of Technology (HUT), Hanoi, Vietnam
*Title: "The influence of silver-doping on the critical current
density of $\text{Bi}_{1.6}\text{Pb}_{0.4}\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_{10+d}$ superconductor"*
*Supervisors: Prof. Dr. Than Duc Hien and Dr. Nguyen Khac
Man*

EMPLOYMENT HISTORY

01/2012-now Senior Researcher at SolMateS company, The Netherlands
<http://www.solmates.nl/>
Postdoctoral researcher at IMS-UT, The Netherlands
<http://www.utwente.nl/tnw/ims/>

03/2010-12/2011 R&D Researcher at SolMateS company, The Netherlands
<http://www.solmates.nl/>

10/2006-02/2010 Ph.D candidate researcher at IMS-UT, The Netherlands
<http://www.utwente.nl/tnw/ims/>

10/2005-09/2006 Lecturer at ITIMS-HUT, Vietnam
<http://www.itims.edu.vn/en/>

08/2001-09/2005

Researcher at ITIMS-HUT, Vietnam

<http://www.itims.edu.vn/en/>

RESEARCH INTERESTS

+ Ferroelectric and piezoelectric thin films: $\text{Pb}(\text{Zr,Ti})\text{O}_3$ (PZT), $\text{Pb}(\text{Mg}_{1/3}\text{Nb}_{2/3})\text{O}_3/\text{PbTiO}_3$ (PMN-PT), BaTiO_3 (BTO) and BiFeO_3 (BFO).

+ Thin films fabrications: Epitaxial and Textured thin films grown on the Single-crystalline substrates (SrTiO_3 , MgO , LaAlO_3 , YSZ, ...) and Silicon substrates using pulsed laser deposition and sol-gel spin coating.

+ Piezoelectric MEMS devices: Micro-diaphragms, Micro-cantilevers, Resonators and FinFETs for the applications in Micro-fluidic pumps (ink-jet printer) & micromachined ultrasonic transducers, Micro-biosensors, High-frequency filters and Tunable strained devices.

INTERESTS

Listening: Classical- and popular musics

Reading: Historical- and detective stories

JOURNAL ARTICLES

(* Corresponding author; # equal contribution)

2014

24. B. Kaleli*, R.J.E. Hueting, **M.D. Nguyen** and R.A.M. Wolters, *Integration of a Piezoelectric Layer on Si FinFETs for Tunable Strained Device Applications*, IEEE Transaction Electron Devices **61** (2014) 1929-1935.
23. M. Boota, E.P. Houwman, M. Dekkers, **M. Nguyen** and G. Rijnders*, *Epitaxial $\text{Pb}(\text{Mg}_{1/3}\text{Nb}_{2/3})\text{O}_3\text{-PbTiO}_3$ (67/33) thin films with large tunable self-bias field controlled by a $\text{PbZr}_{1-x}\text{Ti}_x\text{O}_3$ interfacial layer*, Applied Physics Letters **104** (2014) 182909(1-5).
22. B. Kaleli*, **M.D. Nguyen**, J. Schmitz, R.A.M. Wolters, R.J.E. Hueting, *Analysis of thin-film PZT/LNO stacks on an encapsulated TiN electrode*, Microelectronic Engineering **119** (2014) 16-19.
21. C.T.Q. Nguyen, **M.D. Nguyen***, M. Dekkers, E. Houwman, H.N. Vu, G. Rijnders, *Process dependence of the piezoelectric response of membrane actuators based on PZT thin films*, Thin Solid Films **556** (2014) 509-514.
20. X. Wan, E. P. Houwman, R. Steenwelle, R. van Schijk, **M. D. Nguyen**, M. Dekkers and G. Rijnders*, *Enhanced piezoelectric properties of (110)-oriented $\text{PbZr}_{1-x}\text{Ti}_x\text{O}_3$ epitaxial thin films on silicon substrates at shifted morphotropic phase boundary*, Applied Physics Letters **104** (2014) 092902.

19. H. Van Bui*, **M. D. Nguyen**, F. B. Wiggers, A. A. I. Aarnink, M. P. de Jong, and A. Y. Kovalgin, *Self-limiting growth and thickness- and temperature-dependence of optical constants of ALD AlN thin films*, ECS J. Solid State Sci. Technol. **3** (2014) P101-P106;
18. **Minh Duc Nguyen***, Evert Houwman, Matthijn Dekkers, Hung Ngoc Vu, and Guus Rijnders, *A Fast Room-Temperature Poling Process of Piezoelectric Pb(Zr_{0.45}Ti_{0.55})O₃ Thin Films*, Science of Advanced Materials **6** (2014) 243-251.
17. **Minh D. Nguyen***, Thong Q. Trinh, Matthijn Dekkers, Evert P. Houwman, Hung N. Vu and Guus Rijnders, *Effect of dopants on ferroelectric and piezoelectric properties of lead zirconate titanate thin films on Si substrates*, Ceramics International **40** (2014) 1013-1018.

2013

16. A. T. Tran*, G. Pandraud, F. D. Tichelaar, **M. D. Nguyen**, H. Schellevis and P. M. Sarro, *The extraordinary role of the AlN interlayer in growth of AlN sputtered on Ti electrodes*, Applied Physics Letters **103** (2013) 221909.
15. A. T. Tran*, O. Wunnicke, G. Pandraud, **M. D. Nguyen**, H. Schellevis and P. M. Sarro, *Slender piezoelectric cantilevers of high quality AlN layers sputtered on Ti thin film for MEMS actuators*, Sensors and Actuators A **202** (2013) 118-123.
14. Evert P. Houwman*, **Minh D. Nguyen***, Matthijn Dekkers and Guus Rijnders, *Intrinsic stability of ferroelectric and piezoelectric properties of epitaxial PbZr_{0.45}Ti_{0.55}O₃ thin films on silicon in relation to grain tilt*, Science and Technology of Advanced Materials **14** (2013) 045006.
13. **M D Nguyen***, H Nazeer, M Dekkers, D H A Blank and G Rijnders, *Optimized electrode coverage of membrane actuators based on epitaxial PZT thin films*, Smart Materials and Structures **22** (2013) 085013.
12. **Minh Duc Nguyen***, Matthijn Dekkers, Hung Ngoc Vu and Guus Rijnders, *Film-thickness and composition dependence of epitaxial thin-film PZT-based mass-sensors*, Sensors and Actuators A **199** (2013) 98-105.
11. H. Yagubizade*, M. Darvishi, Y. -Y. Chen, **M. D. Nguyen**, J. M. Dekkers, R. J. Wiegerink, M. C. Elwenspoek and N. R. Tas, *Pulsed-laser deposited Pb(Zr_{0.52},Ti_{0.48})O₃-on-silicon resonators with high-stopband rejection using feed-through cancellation*, Applied Physics Letters **102** (2013) 063509.
10. **Minh D. Nguyen***, Chi T. Q. Nguyen, Thong Q. Trinh, Tai Nguyen, Thao N. Pham, Guus Rijnders and Hung N. Vu*, *Enhancement of ferroelectric and piezoelectric properties in PZT thin films with heterolayered structure*, Materials Chemistry and Physics **138** (2013) 862-869.
9. M. Dekkers*, H. Boschker, M. van Zalk, **M. Nguyen**, H. Nazeer, E. Houwman and G. Rijnders, *The significance of the piezoelectric coefficient $d_{31,eff}$ determined from cantilever structures*, Journal of Micromechanics and Microengineering **23** (2103) 025008.

2012

8. Oktay Yildirim, Michiel G. Maas, Peter J. de Veen, **Minh D. Nguyen**, David N. Reinhoudt, Dave H. A. Blank, Guus Rijnders and Jurriaan Huskens*, *Dielectric Behavior of Self-Assembled Monolayers on Conducting Metal Oxides*, Journal of Materials Chemistry **22** (2012) 2405-2409.

2011

7. **Minh D Nguyen***, Hung N Vu, Dave H A Blank and Guus Rijnders, *Epitaxial Pb(Zr,Ti)O₃ thin films for a MEMS application*, Advances in Natural Sciences: Nanoscience and Nanotechnology **2** (2011) 015005 (1-5).
6. **Minh D. Nguyen**, Matthijn Dekkers, Evert P. Houwman, Ruud Steenwelle, Xin Wan, Andreas Roelofs, Thorsten Schmitz-Kempen and Guus Rijnders*, *Misfit strain dependence of ferroelectric and piezoelectric properties of clamped (001) epitaxial Pb(Zr_{0.52},Ti_{0.48})O₃ thin films*, Applied Physics Letters **99** (2011) 252904 (1-4).
5. A. George, A. W. Maijenburg, **M. D. Nguyen**, M. G. Maas, D. H. A. Blank and J. E. ten Elshof*, *Nanopatterning of functional materials by gas phase pattern deposition of self assembled molecular thin films in combination with electrodeposition*, Langmuir **27** (2011) 12760-12768.
4. H. Nazeer*, **M. D. Nguyen**, L. A. Woldering, L. Abelmann, G. Rijnders and M. C. Elwenspoek, *Determination of the Young's modulus of pulsed laser deposited epitaxial PZT thin films*, Journal of Micromechanics and Microengineering **21** (2011) 074008 (1-7).
3. H. Nazeer*, L. A. Woldering, L. Abelmann, **M. D. Nguyen**, G. Rijnders and M. C. Elwenspoek, *Influence of silicon orientation and cantilever undercut on the determination of the Young's modulus of thin films*, Microelectronic Engineering **88** (2011) 2345-2348.

2010

2. **M. D. Nguyen***, H. Nazeer, K. Karakaya, S. V. Pham, R. Steenwelle, M. Dekkers, L. Abelmann, D. H. A. Blank, and G. Rijnders, *Characterization of epitaxial Pb(Zr,Ti)O₃ thin films deposited by pulsed laser deposition on silicon cantilevers*, Journal of Micromechanics and Microengineering **20** (2010) 085022 (1-11).

2009

1. Matthijn Dekkers#, **Minh D. Nguyen#**, Ruud Steenwelle, Paul M. te Riele, Dave H. A. Blank, and Guus Rijnders*, *Ferroelectric properties of epitaxial Pb(Zr,Ti)O₃ thin film on silicon by control of crystal orientation*, Applied Physics Letters **95** (2009) 012902 (1-3).