CURRICULUM VITAE, **Mikael Syväjärvi** May 13, 2024

Founder and CEO **ALMINICA AB** (founded 2016; www.alminica.se), SME in supporting creation of impact from advanced materials research and innovation;

Director of **ICM Research Institute** (founded 2021; www.icmresearchinstitute.se), research division of Alminica AB.

Director of **Center for Research Utilisation** (founded 2021; www.researchutilisation.eu), education division of Alminica AB.

Visiting Professor of Advanced Industrial Materials Innovation at University of Lincoln (UK) 2022-2025.

Active with research and innovation synergies with EU strategies, such as strategy for smart specialisation for regional growth (RIS3); in particular innovations from research to industry; smart industry.

Training, courses, secondments, non-academic placement (www.researchtobusiness.tech; www.mscasweden.se)

Previously researcher at Linköping University 1995-2020, Sweden. More than 220 publications in crystal growth and semiconductor materials, h-index 35; more than 4750 citations. Researcher ID L-5499-2015. Orcid: 0000-0003-2912-7665

SELECTED LIST OF BUSINESS EXPERIENCES

Background: Materials research in new materials and growth processes since 1995 (cubic silicon carbide, PVT bulk growth, fluorescent silicon carbide as novel light emitting material for general lighting, graphene on silicon carbide as well as surface modification thereof, etc).

Since 2005 entrepreneurial research focus (create business from basic research avenues)

Experience with Swedish basic and applied research, Nordic pilot project and EU projects (principal investigator in about 10 national and Nordic projects)

Organized more than 50 conferences, symposiums, workshops for network building

Experience in international technology transfer, own start-ups

- Co-Founder **Graphensic AB** (graphene on silicon carbide material manufacturing)
- Co-Founder **APM Technologies AB** (Stress-free Wire Arch Additive Manufacturing (SWAAM) process)

Several involvements as board member, evaluator, for example board member Strategic Innovation Programme Graphene (2014-2018) | Advisory board (industrialization) in International Association of Advanced Materials 2016-2018 | Evaluator ClusterNanoRoad Project 2018 (uptake of KETs through clusters and smart specialization). Now mainly mentor and support for deeptech companies from R&D.

Experience in Smart Specialisation Strategy (S3)[1] as S3 Smart Specialisation expert with Region Östergötland (2013-2018) with implementing smart specialisation as well as take part in Baltic Sea Region project EmpInno (e.g. main contributor written reports on Synergy and Empowerment, Organizational Coaching Tools, Feedback Paper), member of project team that lead to creation of Innovative Materials Arena[2]. The S3 is now developed by Partnerships for Reginal Innovation (PRI)[3].

Founder of **EMPIRI (Energy and Environmental Materials International Research and Innovation)** network in energy and environmental materials (initiated 2019)[4]

Partner in **Young Professionals Society** - YPS. The YPS was set up to help, support and change lives of young people by providing personal and professional development opportunities. It aims to bring to the forefront a

[1] Smart Specialisation Strategy (S3) was about creating focus areas in a region. Next level of S3 is Partnerships for Regions Innovation (PRI).
[2] https://innovativematerials.se/).
[3] https://s3platform.jrc.ec.europa.eu/pri
[4] www.empiriworld.org

more progressive, accomplished, and enlightened younger generation of people who will be the representatives and leaders of their communities and who will contribute positively towards the wider society.

Entrepreneurial achievements M. Syväjärvi and R. Yakimova: "Silicon carbide epitaxial layer and method of producing the same", PCT/EP2006/008130; US 11/990 335; R. Yakimova, M. Syväjärvi and T. Iakimov: "Process for growth of graphene", PCT/SE2011/050328; Chinese Patent Application No. 201180043954.5; Japanese Patent Application No. 2013-529102; United States Patent Application No. 13/823 392; European Patent Application No. 11825522.3; Owner of private company (consultancy), Original member of the PEAK group at Linköping University (a support network initiated by Arne Jacobsson in 2009 with five members are researchers with entrepreneurial activities); Selected for Mentor Program Mentor 4 Research 2011 by Royal Swedish Academy of Engineering Sciences (went to finale), Technology transfer and shareholder **El Seed Corporation Ltd** which develops white LED for general lighting using fluorescent silicon carbide;

ALMINICA project portfolio (selected, all are not public due to NDA)

2020-2023 partner H2020 EU-FET Open (FET – Future emerging technology in the EU program RIA – Research and Innovation action) project on frequency comb (www.sicomb.eu).

2021-2024 partner ADHERE – "Development of Advanced Composite Pressure Vessels for Hydrogen Storage"; European Joint Programming Platform ERA-Net Smart Energy Systems in collaboration with the global Mission Innovation Initiative. The Joint Call 2019 ("MICall19") is focussed on transnational Research, Development and Innovation projects on integrated energy storage solutions (www.adhereproject.tech).

2020-2021 SME support APM Technologies AB related to Stress-free Wire Arch Additive Manufacturing (SWAAM) process. Became co-founder and investor.

2020-2021 SME support ACS Bond AB related to operations of manufacturing and development of advanced compound semiconductor materials for semiconductor technologies and optoelectronics.

2019-2020 SME support Simea Optic AB related to high temperature pressure sensor that could have a profound impact on automotive energy systems as it is identified as a key component to boost efficiency and improve control accuracy of engines at higher temperatures.

2017-2018 Alminica was procured for working group supporting implementation of smart specialisation in Region Östergötland in the focus area "advanced materials". The working group activity led to the establishment of "Innovative Materials Arena (IMA) – www.innovativematerials.se".Work included active in Baltic Sea Region project EmpInno (Empowering for Innovation and Growth in Medium-Sized Cities and Regions) which focussed on network of RIS3 specialists, sharing good practices for innovation and growth (www.empinno.eu).

Selected papers, models and presentations:

1. The innovator support model "GISMODEL" (www.clusteringdynamics.eu)

2. Presentation" Crossover generalists as facilitators in societal transition contexts" at E-MRS Spring meeting May 27-31, 2019

3. Preparation for presentation (done by co-author) "Using Buurtzorg model as innovation clustering model for regional capacity building in an entrepreneurial context" at 22nd Uddevalla Symposium 2019 which has focus on "Unlocking the Potential of Regions through Entrepreneurship and Innovation" June 27-29, 2019, at Gran Sasso Science Institute – GSSI, L'Aquila, Italy

4. Presentation (accepted oral) "Clustering dynamics in advanced materials domain related to regional growth" at EUROMAT , Sep 1-5, 2019, Stockholm, Sweden

5. Round table proposal "sharing experiences on commercialization in context of key enabling technology from nanotechnology materials and devices" NANOSMAT conference Abu Dabi Dec 15-17, 2019 (www.nanosmat-global.org)

Linkedin:

https://www.linkedin.com/in/mikaelsyvajarvi/

RESEARCH EXPERIENCE 1995-2020 (at Linköping University)

Higher education degree MSc 1994, Linköping University, in Applied Physics and Electrical Engineering
Doctoral degree PhD 1999, Linköping University, in Materials Science "High growth rate epitaxy of SiC: growth processes and structural quality"; supervisor: Prof. Rositza Yakimova.
Postdoctoral positions 2004-2005, Politechnico of Turin, Italy.
Docent level 2004, Materials Science, Linköping University, Sweden.
Grants and projects
Carl Tryggers Stiftelse "High quality SiC films for high frequency devices", 2006-2007, 200 kSEK.
Ångpanneföreningen Research Foundation "Cubic SiC for energy efficient power and optoelectronics" 2008-2012, 400 kSEK.
Ångpanneföreningen Research Foundation "A new white LED for general lighting" 2009-2012, 500 kSEK.
Richerts Foundation "A new white LED for general lighting" 2009-2012, 200 kSEK.
Swedish Energy Agency "Cubic SiC for white LEDs" 2009-2011, 2400 kSEK.
Nordic Energy Research: "Northern Light Emitting Diode Initiative" 2010-2012, 7000 kSEK; NORLED (www.ifm.liu.se/norled) funded by Nordic Energy Research. Initiated the network and Coordinator of the project with 11 partners from four countries. The project was selected as one of four from 51 applications.
Swedish Research Council "Flourescent Silicon Carbide for white light emitting diodes" 2010-2012, 2400 kSEK.
Swedish Energy Agency "Cubic silicon carbide as a new photovoltaic and light emitting material", 2014-2016, 2800 kSEK.
Swedish Governmental Agency for Innovation Systems (Vinnova) "Cubic silicon carbide as a new solar cell material", 2013-2015, 3200 kSEK.
Swedish Research Council "Bulk growth of 3C-SiC" 2015-2018, 3520 kSEK.
Swedish Research Council "Cubic silicon carbide for solar driven applications", Swedish Research Links 2016-2018, 900 kSEK
Swedish Research Council "Cubic Silicon Carbide as Photoelectrode for Hydrogen Generation from Solar-driven Water Splitting" 2015-2018 (Co-PI in growth of 3C-SiC; Main PI: Jianwu Sun)
Swedish research council for sustainable development (FORMAS) "Innovative photoelectrode for conversion of CO2 and water into fuels using solar energy" 2017-2019 (Co-PI in growth of 3C-SiC; Main PI: Jianwu Sun)
Swedish Research Council Strong Research Environments Area "Stimuli-enabled energy materials for smart bioelectronic devices" 2017-2022; Co-PI in growth; 24 MSEK
Swedish Governmental Agency for Innovation Systems (Vinnova) "Non-poisonous substitute for hard chrome in volume applications" 2017-2018, 723 kSEK.
European Regional Development fund - ACCESS project (East Sweden regional partnership) to strengthen innovation capacity in small and medium sized companies in collaboration with research "Silicon carbide membrane for pressure sensors in fuel engines" 10-11/2018 50000 SEK.
Swedish Energy Agency "Silicon carbide membrane and new light source for a robust high temperature automotive pressure sensor" 2018-2019 500 kSEK.
EU and International projects:
- New-Energy and Industrial Technology Development Organization, Japan, "Development of white LED by substrate technology" 6 MSEK 2010-2011. Coordinator Satoshi Kamiyama, El Seed Corp. Co-PI in growth of fluorescent SiC.
- Japan Society for the Promotion of Science, Meijo University (Japan), Linköping University (Sweden), Rensselaer Polytechnic Institute (USA), Coordinator Satoshi Kamiyama, Meijo University. Co-PI in growth of fluorescent SiC
- Research Council of Norway, EnergyX programme, "Efficient Exploitation of the Sun with Intermediate Band Silicon Carbide (*SunSiC*)", 2014-2017. Co-PI in growth of cubic SiC
-Innovation Fund Denmark, "A new type of white light-emitting diode using fluorescent silicon carbide (*LEDSiC*)" 2015-2018, 8.7 MDKK. Co-PI in growth of fluorescent SiC.
PhD supervision and year of defense: Reza Yazdi 2008 (co-supervisor), Remigijus Vasiliauskas 2012 (co-supervisor), Valdas Jokubavicius 2016 (main supervisor); Yuchen Shi 2019 (co-supervisor)
Postdoc supervision
Jianwu Sun 2010-2012; Noor ul Ain 2015-2016; Priya Kaushik 2016-2017; Valdas Jokubavicius 2016-2019.
Industrial researcher (industrial postdoc) supervision
Rickard Liljedahl (2010-2012); Jianwu Sun 2014-2015; Xinyu Liu 2014-2015
MSc thesis work supervision
I have been supervisor for about 20 thesis works at Linköping University. I was involved in Erasmus exchange with Erlangen University 2010-2018, we had annually 1-2 master thesis from Germany (defended in Germany).
Organized conferences (related to PI of projects, co-chair of many other conferences, workshops)

- Co-organizer Winter School 2010 PAM3: “SiC epitaxial growth: from thin layers to bulk material”, Jan 25-29, 2010
- Co-organizer session “New Lighting – New LEDs” at Energitinget March 16-17, 2010.
- Co-organizer session “Engineering of wide bandgap semiconductor materials for energy saving” in first Bilateral Energy Conference, back-to-back event of the E-MRS/IUMRS ICAM Spring Meeting May 9-13, 2011.
- Subcommittee program member in symposium “LEDS, Photovoltaics and Energy-Efficient (“Green”) Photonics” CLEO 2012 meeting, May 6-12, 2012 in San Jose, CA, USA.
- Co-organizer of session “Alternative approaches of SiC and related wide bandgap materials in light emitting and solar cell applications” at E-MRS Spring Meeting May 27-31, 2013.
- Subcommittee program member in symposium “LEDS, Photovoltaics and Energy-Efficient (“Green”) Photonics” CLEO 2013 meeting, June 9-14, 2013 in San Jose, CA, USA.
- Subcommittee program member in symposium “LEDS, Photovoltaics and Energy-Efficient (“Green”) Photonics” CLEO 2014 meeting, June 8-13, 2013 in San Jose, CA, USA.
- International Steering committee member, SMS Bangkok 2014, SETCOR International Conference on Smart Materials and Surfaces, Bangkok Aug 26-28, 2014.
- Organizer of European Graphene Forum, Stockholm, Sweden, Aug 23-25, 2015
- Member of advisory board for International conference on Materials Science & Technology (ICMTech – 2016, Conference Centre, University of Delhi, Delhi, India, March 1-4, 2016.
- Co-organizer of symposium Smart energy technologies (parallel symposium to ICMTech-2016), Delhi, India, March 1-4, 2016
- Co-organizer of Global Graphene Forum, Stockholm, Sweden, Aug 23-25, 2016.
- Co-organizer of American Graphene Forum, Miami, USA, Dec 4-9, 2016.
- Co-organizer of NACSiC II (New Applications of Cubic SiC) workshop December 14-15, 2016.
- Co-organizer of Asian Graphene Forum, Singapore, March 11-16, 2017.
- Main organizer of symposium “Wide bandgap semiconductors for LEDs, solar and related energy technologies” at E-MRS Spring Meeting 2017.
- Co-organizer of Global Graphene Forum, Stockholm, Sweden, Aug 23-25, 2017.

Member of the Evaluation Committee for PhD defense or Opponent for Licenciate thesis

I have been member 8 times Evaluation Committee for PhD defense (Naveed ul Hassan Alvi ”*Luminescence Properties of ZnO Nanostructures and Their Implementation as White Light Emitting Diodes*” 110826, Nargis Bano “*Fabrication and Characterization of ZnO Nanorods Based Intrinsic White light Emitting Diodes*” 111111, Yifeng Fu, “*Carbon Nanotubes for Electronic Packaging: Growth, Novel Devices and 3D Networks*” 120203; Himanshu Kataria “*High Quality III-V Semiconductors/Si Heterostructures for Photonic Integration and Photovoltaic Applications*” 141031; Naseem Salem Abdel “*Fabrication, Simulation and Performance of Ultra-Thin Silicon Detector*” 141212, Wei Mu “*3D integration of carbon based electronics*” 160929; Yun Ji Shin “*Study of the high temperature solution growth process for the development of heavily doped 4H-SiC substrates*” 161013; Eiman Satti Nour *“Development of Zinc Oxide piezoelectric nanogenerators for low frequency applications”* 161111) and 2 times as Opponent for Licenciate thesis (Yong Zhang “*Development of Graphene Heat Spreader for Thermal Management*” 141012, Naseem Salem Abdel “*Fabrication and Characterization of new Ultra-Thin silicon Detectors as Pre-Cell Hit Detectors for a Cell Irradiation Facility at LIBAF*” 130927); Nazrin Rami *“(Nano)materials for electrochemical sensing applications in different fields*” 231025.

Tutoring experience

Lectures in seminar series for undergraduate and graduate students: “SiC: properties, growth and applications” (1999; 2000); “New Materials” (2001; 2002; 2003; 2006); “Growth of semiconductor materials” (2002; 2003). Course responsible: TFYY51 Engineering project in Applied Physics and Electrical Engineering programme (2006, 2007, 2008); ETE266 Semiconductors in our daily life (2005, 2006, 2007, 2008) - initiated and developed the course; ETE310 Physics and the environment (2008, 2009, 2010, 2011, 2014, 2015) - initiated and developed the course; ETE331 Environmental Technologies for the Future (2016, 2017, 2018, 2019) - initiated and developed the course.

Popular science

Active in dissemination of research in media (I have free lanced with writing for paper) and popular science lectures (about 10 per year).

Some media sources: Ny Teknik, Elektroniktidningen, Östgöta Correspondenten, Swedish Radio Vetenskapsnyheter, Ny Teknik, Östnytt Television, Swedish Television Östergötland, Norrköpings Tidningar, Swedish Radio Östergötland, Swedish Radio Vetandets Värld, Semiconductor Today, Compound Semiconductor.

Awards IUCr (International Union of Crystallography) Young Scientist Award, ICCG-12/ICVGE-10), 1998, Jerusalem, Israel for “achievements in crystal growth as related to crystallography”; Lennanders Foundation selection as “a young promising researcher to promote studies in natural science” Sweden, May 1999; Young Scientist Award, ICCG-13/ICVGE-11, 2001, Kyoto, Japan; IAAM (International Association of Advanced

Materials) - Scientist Medal of year 2014; Smart Materials and Surfaces - SMS Bangkok 2014; Bangkok Aug 26-28, 2014; 2011 Romanusfonden "Graphene – a case study"; 2012 Romanusfonden "Graphene – a case study (continuation)"; 2015 Romanusfonden "Innovation Thoughts": 2015 Family Knut and Ragnvi Jakobsson Foundation "Graphene – from research to market".

MSc thesis works co-supervision: Anna-Lena Hylén: *Revealing of structural defects in sublimation grown SiC*, 01/1996–06/1996. Anette Johansson: *Epitaxial growth and characterization of SiC*, /1998-09/1998. Henrik Jacobsson: *Structure perfection and growth of 4H-SiC*, 02/1998–09/1998. Rafal Ciechonski: *Growth and doping of SiC bulk crystals*, 03/2001 – 10/2001. Anne-Marie Hellerby: *Electrical characterization of SiC layers grown by sublimation epitaxy*, 01/2000 – 06/2000. Jawad ul Hassan: *Effect of the crucible size and RF-coil position on the growth rate and defect evolution in the sublimation bulk growth of 6H-SiC*, 07/2002–04/2003.

MSc thesis works main supervision: Medine Demirkan: *An atomic and optical microscopy study of surface morphology and structural defects of 6H and 4H-SiC epilayers grown by sublimation epitaxy*, 07/1998 – 06/1999. Nut Sritirawisarn: *Epitaxial growth of 3C-SiC on hexagonal substrates*, 08/2005–03/2006. Anoucha Thongkerd: *Morphological study of 6H and 4H-SiC epitaxial layers*, 05/2006-11/2006. An-Sheng Cheng: *Study of 3C and 6H SiC polytype stability in sublimation epitaxial growth using on-axis substrates*, 01/2010-06/2010. Petra Reimers: *Luminescent properties of fluorescent silicon carbide*; 03/2010-09/2010. Kanaparin Ariyawong: *Growth and characterization of SiC*; 01/2011-06/2011. Pontus Stenberg: "*Characterization of SiC ceramic materials*" 01/2011-06/2011. Björn Lundqvist: "*Growth and surface studies of SiC*" 02/2011-08/2011, Hu-Hsuan Huang *"Cubic silicon carbide sublimation growth using 1.2 degree off-axis substrates"* 01/2012-06/2012, Po Hsun Chen "*Stability of bulk cubic Silicon Carbide (3C-SiC) on off-oriented hexagonal Silicon Carbide (4H-SiC) substrate*" 01/2013-06/2013; Fang-Wei Chen "Growth of carbon nanomaterials on SiC" 02/2014-09/2014; Mattias Jansson "3C-SiC as electrode material for water splitting" 01/2015-06/2015; Olof Norén "Electrical properties of 3C-SiC substrates" 01/2015-06/2015.

MSc thesis works Erasmus exchange with Erlangen University, Germany: Thomas Hupfer: "*Impact of the Source Material and Process Conditions on Silicon Carbide grown by Fast Sublimation Epitaxy*" 05/2011 – 08/2011, Saskia Schimmel *"Growth and doping of fluorescent 6H-SiC layers"* 01/2012-06/2012; Philipp Schuh "*Growth of doped 3C-SiC for solar cell applications*" 03/2014-09/2014.

Member of the Evaluation Committee for PhD defense Naveed ul Hassan Alvi "*Luminescence Properties of ZnO Nanostructures and Their Implementation as White Light Emitting Diodes*" 110826, Nargis Bano "*Fabrication and Characterization of ZnO Nanorods Based Intrinsic White light Emitting Diodes*" 111111, Yifeng Fu, "*Carbon Nanotubes for Electronic Packaging: Growth, Novel Devices and 3D Networks*" 120203; Himanshu Kataria "*High Quality III-V Semiconductors/Si Heterostructures for Photonic Integration and Photovoltaic Applications*" 141031; Naseem Salem Abdel "*Fabrication, Simulation and Performance of Ultra-Thin Silicon Detector*" 141212; Onur Parlak "*Interfacing Nanomaterials for Bioelectronic Applications*" 150907

Opponent for Licenciate defense Yong Zhang "*Development of Graphene Heat Spreader for Thermal Management*" 141012

Invited talks and seminars:

1. Invited lecture on Summer School "SiC and GaN: materials for power- and optoelectronics", Cottbus, Germany – "SiC vapor phase epitaxy – near distance methods", Sep 3-14, 2001.
2. Invited lecture; "SiC growth by sublimation" at tutorial session of the European Conference on SiC and Related Materials, Bologna, Italy, Aug 31 – Sep 4, 2004.
3. Invited talk; "Nucleation of 3C in sublimation growth on hexagonal SiC substrates", second International Workshop on the Hetero-epitaxial growth of 3C-SiC, Grenoble, France, June 27-29, 2007.
4. Invited talk; "Fabrication and Challenges of New Electronic Materials: Graphene - a High Speed Candidate", The 10th Swedish System-on-Chip Conference (SSoCC), Vildmarkshotellet, Kolmården, Sweden, May 3-4, 2010.
5. Invited talk; "Fluorescent SiC as new material for white LEDs", Nordic Semiconductor Meeting, Fuglsøcentret, Denmark, June 19-22, 2011.
6. Invited talk; "Growth and light properties of fluorescent SiC for white LEDs", International Conference on Silicon Carbide and Related Materials (ICSCRM), Cleveland, Ohio, USA**,** Sep 11-16, 2011.
7. Invited talk; "Fluorescent SiC for energy and environment", annual Bulk Semiconductor Crystal Growth workshop arranged by German Crystal Growth Association, Erlangen Oct 5-6, Germany, 2011.
8. Invited talk: "Entrepreneurial prospectives on graphene and novel materials for new electronics", The 13th Swedish System-on-Chip Conference SSoCC14, Vadstena, Sweden May 12-13, 2014.
9. Invited talk: "Graphene and silicon carbide as innovative materials" in session "The 10 Year Track. Materials: The Backbone of Industrial Innovation". Clean Tech Forum Europe 2014, Stockholm May 19-21, 2014.
10. Invited talk: "High temperature epitaxial growth of graphene and SiC", E-MRS 2014, May 26-30, 2014, Lille, France.
11. Invited talk: "The cubic sublimation method: prospects for bulk 3C-SiC growth and photovoltaic applications", 6th International Workshop on Crystal Growth Technology (IWCGT-6) in Berlin, June 15-19, 2014.

12. Invited talk: “Fluorescent SiC for white light-emitting diodes”, Progress in Electromagnetics Research Symposium (PIERS) 2014, Guangzhou (Canton), China, Aug 25-28 (2014).
13. Plenary talk: “Advanced energy and environmental materials concepts from silicon carbide and graphene”; Smart Materials and Surfaces - SMS Bangkok 2014; Bangkok Aug 26-28, 2014.
14. Invited talk: “Introduction to Cubic Silicon Carbide: from epitaxy to bulk growth”; New Applications of Cubic Silicon Carbide (NACSIC) workshop, Oslo, May 28-29, 2015
15. Invited talk: “Silicon carbide as platform for energy applications”; Advanced Materials World Congress (AMWC) 2015, Stockholm, Aug 23-26, 2015.
16. Invited talk: “New approaches of cubic silicon carbide for solar driven energy applications”, Euro-Mediterranean Conference on Materials and Renewable Energies, Marrakech, Morocco, Nov 2-6, 2015.
17. Invited lecture “The old matter of new energy materials” Materials Weekend, tutorial organized by E-MRS Fall Meeting 2015 and FEMS EUROMAT 2015, Warzaw Sep 19-20, 2015.
18. Invited talk “Ceramic SiC as source in growth of energy materials for new white LEDs and solar cell concepts” at workshop on "Advanced Ceramics and Composites: Experiments, Modelling and Manufacture", Loughborough University, UK, Sep 21, 2015.
19. Invited lecture: “Silicon carbide and carbon materials for new energy applications”, 4th International Conference on Advanced Nanomaterials and Nanotechnology (ICANN2015), Dec 8-11, 2015, Guwahati-Assam, India.
20. Invited talk: “Aspects on ceramics for novel growth approaches in silicon carbide”, The 40th International Conference & Exposition on Advanced Ceramics & Composites (ICACC), American Ceramic Society, Jan 24-29, 2016, Daytona Beach, FL, USA.
21. Invited talk: “Energy conversion using cubic silicon carbide and graphene based material concepts”, International Conference on Materials Science & Technology (ICMTech), 01 - 04 March, 2016, Conference Centre, University of Delhi, India.
22. Plenary talk: “New challenges and opportunities in application of SiC and graphene”, The 4th International Conference on Competitive Materials and Technology Processes (ic-cmtp4), October 3-7, 2016, Miskolc-Lillafüred, Hungary.

Books and chapters:

1. R. Yakimova, M. Syväjärvi, H. Jacobson, and E. Janzén: “Some aspects of extended defects formation and their reduction in SiC crystals”, chapter in Recent Research Development in Materials and Engineering, Eds. J.J. Moore, G.G. Richards and H.Y. Sohn, Transworld Research Network, Kerala, India, pp 619-646 (2002) ISBN: 81-7895-057-X.
2. M. Syväjärvi and R. Yakimova (Eds): “Wide bandgap materials and new developments”, Research Signpost, Kerala, India (2006) ISBN: 81-308-0092-6.
3. R. Yakimova and M. Syväjärvi: “Liquid phase epitaxy of SiC”, chapter in LPE of Electronic, Optical and Optoelectronic Materials, Eds. P. Capper and M. Mauk, John Wiley and Sons Ltd., (2007) ISBN 9780470852903.
4. M. Syväjärvi and R. Yakimova: “Sublimation epitaxial growth of hexagonal and cubic SiC”, Elsevier, chapter in encyclopedia - the Comprehensive Semiconductor Science & Technology (SEST), Pallab Bhattacharya, Roberto Fornari and Hiroshi Kamimura (Eds), ISBN 978-0-444-53144-5 (2011), p 202-231.
5. M. Bladh and M. Syväjärvi (Eds): “New Lighting—New LEDs: Aspects on light emitting diodes from social and material science perspectives”, Linköping University Electronic Press (2010) ISBN 978-91-7393-270-7.
6. Advanced Materials for Agriculture, Food, and Environmental Safety (Advanced Materials Book Series); Series Editor: Ashutosh Tiwari and Mikael Syväjärvi, WILEY-Scrivener Publishing, USA, 2014.
7. Graphene Materials: Fundamentals and Emerging Applications (Advanced Materials Book Series); Series Editor: Ashutosh Tiwari and Mikael Syväjärvi, WILEY-Scrivener Publishing, USA, 2015.
8. Syväjärvi M., and Yakimova R., Sublimation Growth of Hexagonal and Cubic SiC Layers. In: Saleem Hashmi (editor in-chief), Reference Module in Materials Science and Materials Engineering. Oxford: Elsevier; 2016. pp. 1-32, ISBN: 978-0-12-803581-8.
9. Advanced 2D Materials (Advanced Materials Book Series); Series Editor: Ashutosh Tiwari and Mikael Syväjärvi, WILEY-Scrivener Publishing, USA, 2016.
10. Silicon Carbide Surface Cleaning and Etching, Valdas Jokubavicius, Mikael Syväjärvi, Rositsa Yakimova, Advancing Silicon Carbide Electronics Technology I: Metal Contacts to Silicon Carbide: Physics, Technology, Applications 37 (2018) 1 (Editor: Konstantinos Zekentes).

Publication list:

Conference papers

1. C.I. Harris, R. C. Glass, O. Kordina, M. Syväjärvi, and E. Janzén: "Electrochemical and photo-assisted electrochemical etching of 6H-SiC", Proceedings International Conference on SiC and Related Materials, Washington, USA, 1-3 Nov (1993); Inst. Phys. Conf. Ser. 137 (1994) 617.
2. M. Syväjärvi, R. Yakimova, I.G. Ivanov, and E. Janzén: "Growth of 4H-SiC from liquid phase", Proceeding European MRS Spring Meeting, Strasbourg, France, 4-7 June (1996); Mat. Sci. Eng. B46 (1997) 329.
3. A. Kakanakova-Georgieva, T. Paskova, R. Yakimova, C. Hallin, M. Syväjärvi, E.P. Trifonova, M. Surtchev, and E. Janzén: "Structural properties of 6H-SiC epilayers grown by two different techniques", Proceeding European MRS Spring Meeting, Strasbourg, France, 4-7 June (1996); Mat. Sci. Eng. B46 (1997) 345.
4. C. Lockowandt, R. Yakimova, M. Syväjärvi, and E. Janzén: "High temperature furnace for liquid phase epitaxy of SiC in microgravity", Proc. 47th International Astronautical Congress, Beijing, China, 7-11 October (1996).
5. M. Syväjärvi, R. Yakimova, and E. Janzén: "Growth of SiC from liquid phase: wetting and dissolution of SiC", Proceedings 1st European Conference on SiC and Related Materials, Crete, Greece, 6-9 October (1996); Diamond Rel. Mat. 6 (1997) 1266.
6. R. Yakimova, A-L. Hylén. M. Tuominen, M. Syväjärvi, and E. Janzén: "Preferential etching of SiC crystals", Proceedings 1st European Conference on SiC and Related Materials, Crete, Greece, 6-9 October (1996); Diamond Rel. Mat. 6 (1997) 1456.
7. M. Syväjärvi, R. Yakimova, M.F. MacMillan, M. Tuominen, A. Kakanakova-Georgieva, C. Hemmingsson, I.G. Ivanov, and E. Janzén: "High growth rate of □-SiC by sublimation epitaxy", Proceedings International Conference on SiC, III-Nitrides and Related Materials; Stockholm, Sweden; 31 August - 5 September (1997); Mat. Sci. Forum 264-268 (1998) 143.
8. M. Tuominen, R. Yakimova, A. Kakanakova-Georgieva, M.F. MacMillan, M. Syväjärvi, and E. Janzén: "Domain occurrence in SiC epitaxial layers grown by sublimation", Proceedings International Conference on SiC, III-Nitrides and Related Materials; Stockholm, Sweden; 31 August - 5 September (1997); Mat. Sci. Forum 264-268 (1998) 151.
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