

## Academic Bio Sketch

### DR. ALEXANDER KHARLAMOV M.D., FESC, FACC, FEACVI

#### Summary:

Dr. Kharlamov has 28 years of clinical experience in general cardiology (since 1996; a Consultant Physician since 2007; a Board-Certified Cardiologist since 2010; a Consulting Cardiologist [practicing non-invasive cardiologist in general cardiology, intensive care] in the Teaching Hospital with a focus on acute cardiac care, ICU therapy, chronic coronary syndrome, heart failure), 23 years of translational research in nanomedicine and biomedical engineering (since 2001), and about 17 years of the bench-to-bedside studies in interventional cardiology (a leader of the research group/ a level of the Assistant Professor since 2007 [non-practicing scientist in interventional cardiology and cardiovascular imaging]) including advanced cardiovascular imaging (interventional and noninvasive), vascular biology, and pathology, RTD of cardiovascular imaging software and medical devices (bioresorbable scaffolds and stents). He received his M.D. (Doctor of Medicine) cum laude in 2005 from Ural State Medical University (Yekaterinburg, Russia). After finishing his internal medicine internship in 2007 at the Ural Institute of Cardiology (Yekaterinburg, Russia), he started as a physician and translational researcher (bench research including animal models) in interventional cardiology and nanotechnology. The main research direction nowadays is an RTD of advanced cardiovascular imaging tools. Moreover, healthcare concerns and research gaps in the LGBTQIA+ population, including options of sexual orientation, gender identity, gender expression, and sex characteristics, remain one of the focuses promoting academic vision and clinical research in the field. He passed his C.Sc.-doctoral/ graduate degree course in cardiology (A.B.D.) at the Ural State Medical University in 2008-2011. Since 2007-2009, he has been working as a research fellow in some institutions in the Netherlands (UMC St Radboud, Nijmegen; UMCG, Groningen; Erasmus MC, Rotterdam). Since 2013, he has been fostering the development of advanced cardiovascular imaging technology and coronary devices in the Netherlands and Estonia, being involved in translational and clinical research, and keeping his position in daily clinical practice as a cardiac intensive care physician. He is an author of more than 60 articles and grant proposals for the European Commission and has received some national and international awards for his research work. Since 2018, he has been a FESC (a Treasurer of the ESC Council for Cardiology Practice with a mandate in 2022-2024), and from 2019 – a FACC and a FEACVI. The collaboration with the Russian institutions was suspended in March 2022 and terminated in September 2022 due to decisions of the European Commission and the anti-Russian sentiment-related developmental strategy.

#### Education/ training experience:

<i>Level of education</i>	<i>Experience</i>	<i>Institution and location</i>	<i>Degree</i>	<i>Years</i>	<i>Field of study</i>	<i>Comments</i>
University Course	University Course	Leiden University, The Hague, The Netherlands	<b>Certificate of Attendance</b>	2023-2024	<i>Intelligence Studies, Political Science</i>	The InCLUision program provides special courses
Post-graduate	Accreditation Course (continued medical education) without Certification	Regional Academy of Business Education, Tolyatti, RU	<b>Certificate of Attendance (no accreditation)</b>	<b>2022</b>	<i>Public Health</i>	The state accreditation exam is required to complete the accreditation program
Post-graduate	Accreditation	Ministry of Public Health of Russian Federation	<b>Accreditation in Cardiology</b>	<b>2022</b>	<i>Cardiology</i>	Board certified as a cardiologist in 2022 (valid until 2027)
Post-graduate	Accreditation Course (continued medical	Ural State Medical University (USMU), Yekaterinburg, Russia (Yek., RU) (www.usma.ru; FAIMER SCHOOL ID: F0001556); New	<b>Certificate in Cardiology</b>	<b>2017</b>	<i>Cardiology</i>	Board-certified as a cardiologist in 2017 (valid until 2022)

	education) with Certification	Hospital, Yek., RU (www.newhospital.ru)				
Doctoral-level courses (highest level)	Ph.D. (Candidate of Science) Fellowship	USMU), Yek., RU; Ural Institute of Cardiology (UIC), Yek., RU (www.cardio-burg.ru)	<b>Certificate of Attendance (no degree, no defense)</b>	2008-2011	Cardiology	Mentors (mentoren): Prof. Jan Gabinsky, M.D., Ph.D., D.Sc. (Ural Institute of Cardiology), and Prof. Vladimir Shur, Ph.D., D.Sc. (Modern Nanotechnologies, Ural Federal University); Ph.D. thesis " <i>Regression of atherosclerosis below Glagov threshold as a new target for the theranostic atheroprotective strategy of progressive coronary atherosclerosis: evolution of technologies from statin drugs and noninvasive imaging to bioresorbable scaffolds, nanoformulations and hi-tech intravascular imaging of coronary pool</i> " was not defended (A.B.D., 'all-but-dissertation' with GPA 5.00/5.00: the dissertation was vetted (thesis will be not published). <u>The exam in cardiology was successfully passed in 2010.</u>
Post-graduate	Clinical Internship with Certification	USMU, Yek., RU; UIC, Yek., RU	<b>Certificate in Internal Medicine</b>	2006-2007	Internal Medicine	Board-certified as a physician in internal medicine in 2007 (valid until 2012)
University degree	M.D. Scholarship with Diploma	USMU, Yek., RU	<b>M.D.</b>	1999-2005	General Medicine	GPA 4.92/5.00, 98.4% (Magna Cum Laude); ECFMG ID: 1-015-116-5 (ECFMG/ USMLE is not completed yet)

**The latest positions (check out the LinkedIn profile for details):**

2019 – 2021, since 2023, Founder, C.E.O., Independent researcher in interventional cardiovascular biomedicine (self-employed), De Haar Research Task Force (aka De Haar Research Foundation), Rotterdam, The Netherlands (NL)  
 2022 - 2024, a Treasurer of the ESC Council for Cardiology Practice with a mandate in 2022-2024  
 2022 – 2023, Founder, C.E.O., De Haar Research Foundation, Tallinn, Estonia  
 2018 – 2022, Attending Cardiologist-Intensivist at ICU (Intensive Care Unit), Department of Cardiology, Central City Hospital no. 7, Yek., Russia (RU)  
 2018 – 2019, Chief Research Officer (Director for Science and Clinical Practice), Attending Cardiologist, Department of Internal Medicine, Transfiguration Clinic, Yekaterinburg (Yek.), RU  
 2013 – 2017, Freelance Researcher in Translational Cardiology, Yek., RU  
 2013 – 2013, Interim Research Advisor, Ural Institute of Cardiology, Yek., RU  
 2012 – 2013, Freelance Medical Advisor, Center for Modern Nanotechnologies, Ural Federal University, Yek., RU  
 2011 – 2013, Research Fellow, Visiting Researcher in Interventional Cardiology, Erasmus MC, Rotterdam, NL  
 2010 – 2015, Lecturer, Ural Medical University, Yek., RU  
 2009 – 2010, Visiting Researcher in Translational Cardiology, Radboud UMC, Nijmegen, NL  
 2001 – 2011, Freelance Scientific Assistant to C.E.O., Clinician, Ural Institute of Cardiology, Yek., RU  
 2005 – 2009, C.E.O., Eurolux, Yek., RU  
 2008 – 2009, Therapist (General Practitioner), Ekaterinburg Koltsovo Airport, Yek., RU

**The primary research and clinical interests:**

- General and interventional cardiology
- Atherosclerosis, arterial remodeling, regression of atherosclerosis
- Intravascular (QCA, IVUS, OCT, NIRS, hybrid, functional) and noninvasive advanced cardiovascular imaging (TTE, MSCT/ CCTA, CMR, MPI, PET) of coronary arteries

- Coronary devices, bioresorbable scaffolds/ transient scaffolding
- Chronic coronary syndrome
- Healthcare concerns of the LGBTQIA+ population and related research, options of sexual orientation, gender identity, gender expression, and sex characteristics
- Cardiorenal syndrome and brain-heart-kidney axis
- Nanomedicine, biomedical engineering
- Translational cardiovascular biomedicine, models of atherosclerosis in animals
- Public health administration, clinical trials management
- Epidemiology of cardiovascular burden, risk factors, cardiovascular advocacy, and politics
- Health economics, outcomes, and management in cardiovascular sciences
- Philosophy of science (consciousness, whole brain emulation/ mind transfer, transhumanism, singularitarianism, biomedical advocacy, and ethics)
- Intelligence studies, public policy, health policy, political science
- Medical statistics, systematic reviews, meta-analyses
- COVID-19-associated conditions
- Sports cardiology

### Publications:

**H-index** = 10. The publication profile is available in PubMed (akharlamov@orcid), **ORCID** (0000-0003-4631-1261), **Web of Science ResearcherID** (I-3692-2015), and Scopus (56721449700). The editorial/ reviewer profile (Local editorial board member in EuroIntervention in 2011-2013, member of the International Editorial Board in European Heart Journal in 2013-2015, consulting editor in both Cardiovascular Diagnosis and Therapy in 2013-2017, and International Journal of Nanomedicine since 2013), member of the Editorial Board in World Journal of Cardiology (2018-2023), Oxford Medical Case Reports (an associate editor since 2019), BMC Cardiovascular Disorders (since 2020), and CardioPractice (former ESC CCP e-Journal, since 2022) are available in Publons/ Web of Science (publons.com/a/1136995/).

### Memberships:

European Society of Cardiology (since 2006; FESC since 2018, FEACVI since 2019, a Treasurer of the ESC Council for Cardiology Practice with a mandate in 2022-2024), American College of Cardiology (since 2009; FACC since 2019), American Heart Association (since 2009), International Society for Stem Cell Research (since 2009), International Society of Nephrology (since 2009), European Society for Nanomedicine (since 2011), The Society for Cardiovascular Angiography and Interventions (since 2017), World Sleep Society (since 2018), The British Society for Nanomedicine (since 2018), Royal College of Physicians (since 2019), International Society for Cardiovascular Translational Research (since 2019), American Association for the Advancement of Science (since 2019), Society of Cardiovascular Computed Tomography (since 2019).

### Key publications:

1. **Kharlamov A**, Sherriff N, Delles C, van der Harst P. Tackling cardiovascular healthcare disparities for LGBTQIA+ population: a call to action in the European Society of Cardiology. *Eur Heart J*. 2024 Jan 9;ehad882. doi: 10.1093/eurheartj/ehad882. Epub ahead of print. PMID: 38195053.
2. **Kharlamov A**, Lamberts M. Digital medicine: the next big leap advancing cardiovascular science. *BMC Cardiovasc Disord*. 2023 Jan 17;23(1):30. doi: 10.1186/s12872-022-02971-5. PMID: 36650433; PMCID: PMC9847174.
3. **Kharlamov A**. Can we reverse atherogenesis with the eradication of toxic LDL-C? A comparative pooled analysis of selected therapies in quest of the revolutionary approach. *Eur Heart J*. 2020; 41, Suppl 2: ehaa946.1454, doi:10.1093/ehjci/ehaa946.1454.
4. **Kharlamov A**. Can dropping LDL-C cause regression of atherosclerosis or should toxic LDL-C be eradicated? A pooled study of plaque burden reduction in lipid-lowering trials. *Atherosclerosis*. 2019, doi:10.1016/j.atherosclerosis.2019.06.304.
5. **Kharlamov A**. Plasmonic photothermal therapy of atherosclerosis and preparation of target lesion in patients with arterial remodeling: subanalysis of NANOM-FIM trial. *Atherosclerosis*. 2019, doi:10.1016/j.atherosclerosis.2019.06.100.
6. **Kharlamov A**. Target Lesion Preparation Improves Outcomes of Atheroprotective Plasmonic Photothermal Therapy with Noble Metal Nanoparticles. *Arteriosclerosis, Thrombosis, and Vascular Biology*. 2019;39:A744, wosuid: wos:000482037300543.
7. **Kharlamov AN**, Zubarev IV, Shishkina EV, Shur VY. Nanoparticles for treatment of atherosclerosis: Challenges of plasmonic photothermal therapy in translational studies. *Future Cardiol*. 2018;14(2). doi:10.2217/fca-2017-0051.
8. **Kharlamov A**. Translational exploration and clinical testing of silica-gold nanoparticles in development of multifunctional nanoplatform for theranostics of atherosclerosis. *Biomedical Applications of Functionalized*

- Nanomaterials: Concepts, Development and Clinical Translation, 2018 | Book, Part of doi:10.1016/B978-0-323-50878-0.00023-9.
9. **Kharlamov AN**, Feinstein JA, Cramer JA, Boothroyd JA, Shishkina EV, Shur V. Plasmonic photothermal therapy of atherosclerosis with nanoparticles: Long-term outcomes and safety in NANOM-FIM trial. *Future Cardiol.* 2017;13(4). doi:10.2217/fca-2017-0009
  10. **Kharlamov AN**. Undiscovered pathology of transient scaffolding tIremains a driver of failures in clinical trials. *World J Cardiol.* 2018 Oct 26;10(10):165-186. doi: 10.4330/wjc.v10.i10.165. PMID: 30386494; PMCID: PMC6205848.
  11. **Kharlamov AN**, Feinstein JA, Cramer JA, Boothroyd JA, Shishkina E V, Shur V. Plasmonic photothermal therapy of atherosclerosis with nanoparticles: long-term outcomes and safety in NANOM-FIM trial. *Future Cardiol.* June 2017:fca-2017-0009. doi:10.2217/fca-2017-0009
  12. **Kharlamov AN**. Why do we fail to achieve Glagovian atheroregression in lipid-lowering trials? *Interv Cardiol.* 2015;7(5):469-482. doi:10.2217/ica.15.37
  13. **Kharlamov AN**. Scaffold thrombosis: Exaggerated illusion, or when statistics rules. *Int J Cardiol.* 2016;209:206-209. doi:10.1016/j.ijcard.2016.02.054
  14. **Kharlamov AN**, Tyurnina AE, Veselova VS, et al. Plasmonics for treatment of atherosclerosis: Results of NANOM-FIM trial. *J Nanomedicine Nanotechnol.* 2013;4(1). doi:10.4172/2157-7439.1000160
  15. **Kharlamov AN**. Can we adapt histological injury score for optical coherence tomography of coronaries? *Int J Cardiol.* 2013;168(4):4322-4324. doi:10.1016/j.ijcard.2013.04.168
  16. Muramatsu T, Onuma Y, Zhang Y-J, et al. Progress in treatment by percutaneous coronary intervention: The stent of the future | Avances en el tratamiento mediante intervención coronaria percutánea: el stent del futuro. *Rev Esp Cardiol.* 2013;66(6):483-496. doi:10.1016/j.recesp.2012.12.009
  17. Muramatsu T, Onuma Y, Zhang Y-J, et al. Progress in treatment by percutaneous coronary intervention: the stent of the future. *Rev Esp Cardiol (Engl Ed).* 2013;66(6):483-496. doi:10.1016/j.rec.2012.12.009
  18. **Kharlamov AN**, Tyurnina AE, Veselova VS, Kovtun OP, Shur VY, Gabinsky JL. Silica-gold nanoparticles for atheroprotective management of plaques: Results of the NANOM-FIM trial. *Nanoscale.* 2015;7(17):8003-8015. doi:10.1039/c5nr01050k
  19. **Kharlamov AN**. Plasmonic photothermal therapy for atheroregression below Glagov threshold. *Future Cardiol.* 2013;9(3):405-425. doi:10.2217/fca.13.16
  20. **Kharlamov AN**. Bioresorbable scaffolds for atheroregression: Understanding of transient scaffolding. *Curr Cardiol Rev.* 2016;12(1):66-82.
  21. **Kharlamov AN**, Duckers HJ, Van Beusekom HMM, Smits PC, Perin EC, Serruys PW. Do we have a future with transcatheter adventitial delivery of stem cells? *Int J Cardiol.* 2013;165(2):217-221. doi:10.1016/j.ijcard.2012.11.063
  22. Lemos PA, Farooq V, Takimura CK, et al. Emerging technologies: Polymer-free phospholipid encapsulated sirolimus nanocarriers for the controlled release of drug from a stent-plus-balloon or a stand-alone balloon catheter. *EuroIntervention.* 2013;9(1):146-156. doi:10.4244/EIJV9I1A21
  23. **Kharlamov AN**. Phenomenon of elongated struts: Is optical coherence tomography accurate enough to analyze scaffold area? *Int J Cardiol.* 2013;168(4):4280-4284. doi:10.1016/j.ijcard.2013.04.201
  24. **Kharlamov AN**, Gabinsky JL. Plasmonic photothermic and stem cell therapy of atherosclerotic plaque as a novel nanotool for angioplasty and artery remodeling. *Rejuvenation Res.* 2012;15(2):222-230. doi:10.1089/rej.2011.1305
  25. Onuma Y, Muramatsu T, **Kharlamov A**, Serruys PW. Freeing the vessel from metallic cage: What can we achieve with bioresorbable vascular scaffolds? *Cardiovasc Interv Ther.* 2012;27(3):141-154. doi:10.1007/s12928-012-0101-8
  26. **Kharlamov AN**, Perrish AN, Gabinsky YL, Ronne K, Ivanova EY. Vitamin D in the treatment of cardiorenal syndrome in patients with chronic nephropathy. *Kardiologiya.* 2012;52(3):33-44.
  27. **Kharlamov AN**, Gabinsky JL. Noble metal nanoparticles for plasmonic photothermal therapy of atherosclerosis. In: *Technical Proceedings of the 2013 NSTI Nanotechnology Conference and Expo, NSTI-Nanotech 2013.* Vol 3. ; 2013:369-372.