



Public announcement of Collaborative Research, Phase 1

2023.05.25

Research Theme	Ultrafast directional x-ray detection using doped tantalum pentoxide 3D photonic crystals for improved scintillation		
Research Period	Jan. 1, 2021 - Dec. 31, 2022		
Researcher Information	Technion		Yehonadav Bekenstein Assistant Professor Faculty of Materials Science and Engineering
	Tokushima Univ.		Toshihiro Moriga Professor Graduate School of Technology, Industrial and Social Sciences, Division of Science and Technology
Publication List (Published Papers, conference, presentations, etc)	<ul style="list-style-type: none"> • OMASUI Harumi, NAKANISHI Akihiro, HAYAKAWA Rino, KAMIKI Ami, MURAI Kei-ichiro*, MORIGA Toshihiro, Synthesis of cerium-doped tantalum oxide and investigation of basic properties, The Ceramic Society of Japan Fall Meeting, 2T20 (2021) • Talk by Dr. Yehonadav Bekenstein, NAC 2022, public talk1, "how can nanomaterials help make a better world?" • Presentation by Tomoya Onoe at the 35th Fall Symposium of Ceramic Society of Japan entitled "Enhancement in emission intensity from GdTaO₄:Ln³⁺ (Ln=Eu and Tb) through SiO₂ photonic crystal" (Sep 2022). • Project 1 (presented in 2021 report) – "A self-assembled photonic scintillator with enhanced directional emission". (Manuscript in preparation) • Project 2 (presented in 2021 report)- "Directional and fast scintillation from LuO₂ / SiO₂ alternating layers co-doped Bi/Eu") manuscript under review (also published on arxiv) • Project on Hydrogen Production Enhanced by Oxynitride Photonic Crystals, "Visible Light Driven Photocatalytic Photonic Crystals" by T. Moriga and N. Hirayama, published in <i>Ceramics Japan</i>, Vol. 57 (5), 313-316 (2022) 		