

Division of Mechanical Science and Engineering	Research field	Heat Transfer Engineering	Lab. ID MS35
Laboratory web site	<a href="https://mech-eng.w3.kanazawa-u.ac.jp/teraoka/">https://mech-eng.w3.kanazawa-u.ac.jp/teraoka/</a>		
Research subjects			
<p>In a wide range of fields such as air conditioning, material manufacturing and processing, an food, there is a demand for technology that promotes, suppresses, controls, and stores heat transfer. Our laboratory aims to contribute to global environment and energy problems by tackling problems related to such heat transfer phenomena. Concrete research is mainly related to solid-liquid phase change phenomena such as "suppression of frost layer growth by controlling ice crystals" and "growth of TBAB hydrate crystals". In addition, as a joint research with a company, we are also conducting research on heat transfer that is close to practical use.</p>			
Master/Doctor course: Education policy, curriculum, typical activity in the laboratory			
<p>First, subjects will set a research theme through discussion with advisor. Our research is mainly related to heat transfer engineering and thermodynamics, but we also incorporate knowledge from other fields as necessary. We have a weekly research progress report meeting, and occasionally exchange information on research results with researchers and students from other universities in related fields. Through these activities, students will be able to acquire research results and the ability to make presentations at conferences at least once a year.</p>			
Daily life in the laboratory, etc.			
There are no particular restrictions on life in our laboratory. It is left to the autonomy of students.			
Message or comments by the laboratory faculty staffs			
Proactive research means acquiring known knowledge and then considering new concepts to the level of being able to share them with others. While having such an experience, I would like to share the joy of research together.			
Recent Master theses in these 3 years (+ more if appropriate)			
year.month	Thesis title (including English translation of Japanese thesis title)		
2021.3	Crystal growth of type A of TBAB hydrate solidifying on a cooling surface		
2021.3	Instantaneous orientation change of ice crystal growing in supercooling aqueous solution immediately after reaching a solid surface		
2020.3	Crystal state of ice solidifying on periodically moving belt		
2019.3	Performance evaluation of freeze-concentration process by using a metal foil belt in NaCl aqueous solution		
2019.3	Change of ice crystal shape during directional solidification along a wall		
2018.3	The effect of crystal states of plate ice on freeze-concentration during the process of ice continuous making system		
2018.3	A new control method of a meander rod against flow in channel with sensing flow direction		
2017.3	Effect of Growth Velocity on Changing Rate of Crystal Orientation of Ice Crystal Growing along Solid Surface		
2016.3	Effect of ice crystal anisotropy on efficiency of freeze concentration		
2015.3	Thermal contact resistance between sliding surfaces of ice-maker using metallic belt		
2014.3	Crystal orientation changing during solidification of supercooled water in acrylic rectangular microtube		
2014.3	Freezing concentration by an ice-maker using metallic belt		
Recent Doctoral theses in these 3 years (+ more if appropriate)			
year.month	Thesis title (including English translation of Japanese thesis title)		
Laboratory mail address	Yoshikazu Teraoka <teraoka *at* se.kanazawa-u.ac.jp>		