

Development of Assessment Techniques for Next Generation Refrigerant with Low GWP Values *

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To prevent further deterioration of global warming and ozone layer depletion, CFCs (Chlorofluorocarbons), HCFCs (Hydrochlorofluorocarbons), and HFCs (Hydrofluorocarbons) have also been subject to refrigerant regulation in Kigali Amendments. The development of the next-generation refrigerants to replace the regulated refrigerants becomes an urgent task. NEXT-RP (Research Center for Next Generation Refrigerant Properties) is an academically neutral research institute established in I²CNER, Kyushu University, to search for low GWP (Global Warming Potential) refrigerants with safe, non-toxic, non-flammable, and environmentally acceptable. At present, NEXT-RP is collaborating with 17 universities and national laboratories in 5 countries to evaluate new refrigerants (Fig. 1). Our main target for new refrigerant is in HFOs (Hydrofluoroolefins) having a carbon-carbon double bond. Although there are still many remaining issues in terms of stability and flammability, there is a movement to search for a new refrigerant from refrigerant mixtures to solve the weakness. I am going to talk about our NEDO project related to the assessment of next-generation refrigerants and recent results for my experiments.

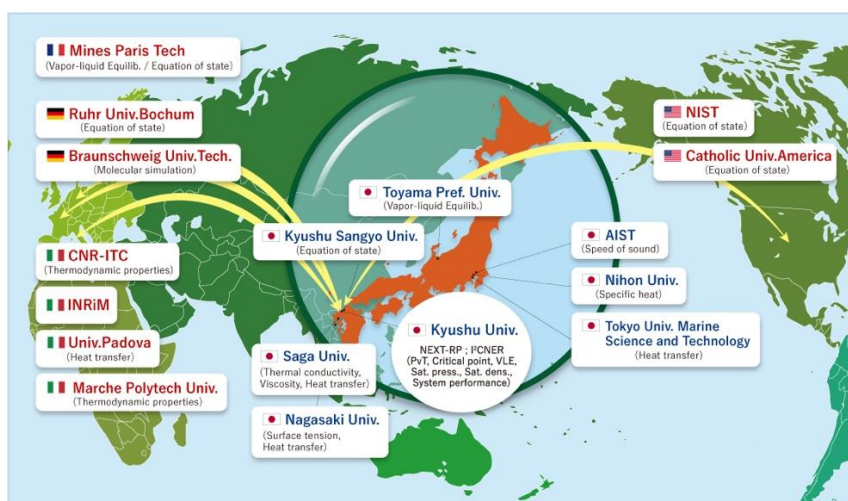


Fig. 1 International collaboration of NEXT-RP, I²CNER. (as of now)

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