

Training and knowledge transfer

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CO₂ workshop INDEE, IIT Madras, March 2018



SUPERSMART IN A NUTSHELL

OVERVIEW



SUPERSMART IS A EU FUNDED HORIZON 2020 PROJECT

- DURATION: 36 MONTH,
- START: 1ST OF FEBRUARY 2016
- PROJECT PARTNERS:
 - SINTEF (COORDINATOR)
 - SHECCO
 - CNR
 - UMWELTBUNDESAMT (UBA)
 - KTH
 - TUBS
 - CIRCE
 - ENERGIJA DOO
 - IIR



SUPERSMART MAP





SUPERSMART WANTS TO HELP FOOD RETAILERS TO:

- **REDUCE THE ENERGY USE & ENVIRONMENTAL FOOTPRINT**
- **INCREASE THE ECONOMIC BENEFITS BY SAVING ENERGY, SERVICING & MAINTENANCE COSTS**
- **USE THE BEST MATURE TECHNOLOGY**
- **COMPLY WITH ALL REGULATIONS & ENVIRONMENTAL COMMITMENTS**

SUPERSMART OBJECTIVES



- **IDENTIFY MARKET BARRIERS**
- **REMOVE NON-TECHNOLOGICAL MARKET BARRIERS BY**
 - **EDUCATION & TRAINING OF SUPERMARKET OWNERS/CHAINS, MANUFACTURERS, INSTALLERS, CONSULTANTS ALL ACROSS EUROPE**
 - **CREATING AN ONLINE INFORMATION HUB ENABLING MULTIDISCIPLINARY COMMUNICATION & DISSEMINATION**
- **SUPPORTING THE INTRODUCTION OF A NEW EUROPEAN ECOLABEL FOR SUPERMARKETS**

SUPERSMART ACTIONS



SUPERSMART HAS THREE MAIN WORKING TASKS:

1. REMOVAL OF NON-TECHNOLOGICAL BARRIERS:

- **WORKSHOPS, SEMINARS, AWARENESS-RAISING**
- **TRAINING FOR SUPERMARKET STAKEHOLDERS FREE OF CHARGE**

2. SUPPORT FOR THE DEVELOPMENT OF AN EU ECOLABEL

- **DEVELOPMENT OF LABEL CRITERIA & PRODUCT GROUP PROPOSAL**
- **SUPERMARKET STAKEHOLDERS CAN PARTICIPATE, INFLUENCE AND COMMENT**

3. COMMUNICATION & DISSEMINATION



ENERGY EFFICIENT STATE-OF-THE-ART SUPERMARKETS

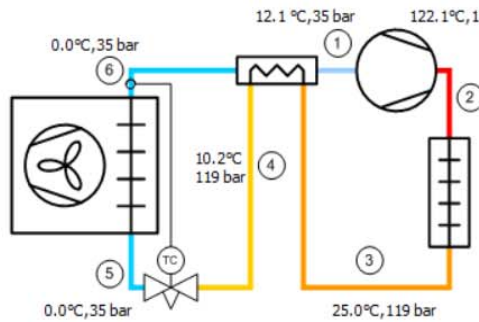
FOCUS ON

- ENERGY EFFICIENT STATE-OF –THE ART REFRIGERATION SYSTEM, INTEGRATION WITH AC, HEAT RECOVERY (SESSION 1 AND 3)

DOWNLOAD LATEST TECHNICAL REPORTS ON

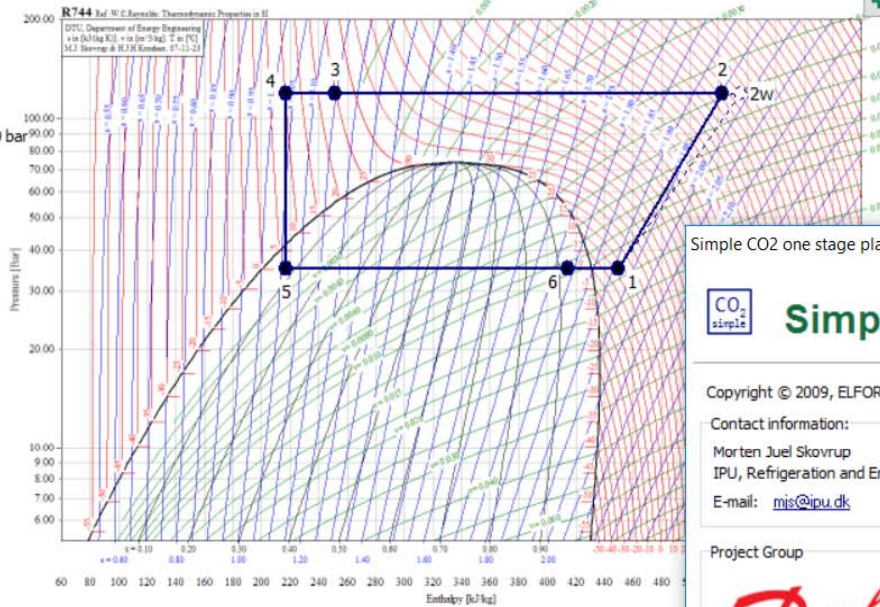
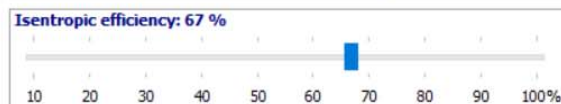
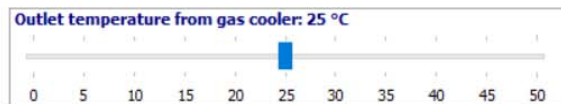
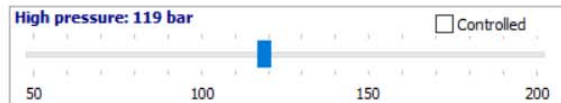
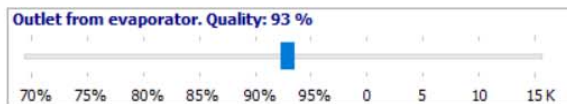
WWW.SUPERSMART-SUPERMARKET.INFO

Simple CO2 one stage plant



$Q_e = 197.92 \text{ kJ/kg}$
 $W = 85.88 \text{ kJ/kg}$
 $Q_c = 270.92 \text{ kJ/kg}$

$COP_c = 2.30$ $COP_h = 3.15$



DOWNLOAD for FREE!

Simple CO2 one stage plant



Simple One Stage CO2 Cycle

Version 2.40

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Project Group



OK

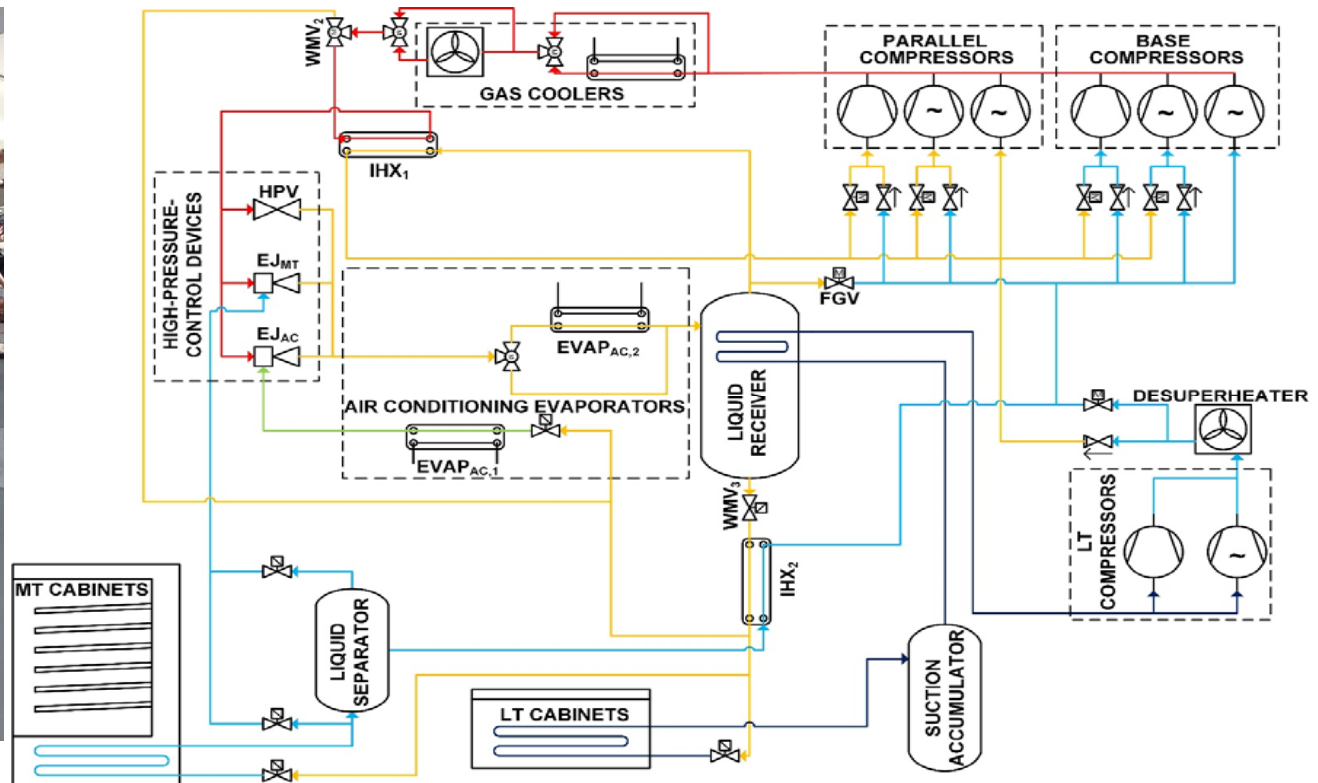


Implementation of training for contractors
Workshop at IIT Madras, March 2018

NTNU

R744 (CO₂) training sites

NTNU / SINTEF Trondheim Norway



Implementation of training for contractors
Workshop at IIT Madras, March 2018

R744 (CO₂) training sites

IIT Madras, Chennai India



Implementation of training for contractors
Workshop at IIT Madras, March 2018

NTNU



CO₂-TRAININGS

Introduction:

Trainings with theoretical contents and practical sessions on subcritical and transcritical CO₂ systems are carried out at individual dates for smaller groups.

Further informationen on request, see below.

Subject Areas:

Compressors for R744, system design, protection & control, commissioning, practical workshop.

Two modules are offered (2 days each): subcritical or transcritical applications.

Target Audience:

Planners and Service Specialists

Language:

English

Appointments:

19.-20.02.2018 // English // fully booked

08.-09.03.2018 // English // Trans-critical CO₂ Applications



- **What kind of training is needed?**

- **designers:** → universities
- **constructors / service:** → company level
- **operators:** → end-user level
- **else:**



Who can provide it:

Danfoss, OEM (Dorin, Bitzer, LUVE, thermofin, etc.) IIT Madras, IISc Bangalore, else...

Feedback from the audience ->