

Jens O.M. Karlsson, PhD

Associate Professor of Mechanical Engineering | College of Engineering at Villanova University
Villanova, PA, US

Jens Karlsson, PhD, specializes in biothermal sciences, including cryobiology (cooling) and hyperthermic processes (heating).

Biography

Dr. Karlsson is a leading expert in the biothermal sciences. These include cryobiology (cooling) and hyperthermic processes (heating). Cryobiology investigates cryopreservation and cryosurgery. Cryopreservation is used in cell banking for many areas of biotechnology. It is also used for cell therapy (stem cells), in vitro fertilization, blood cell banking. Cryosurgery can be used to destroy certain cancerous cells. Hyperthermic processes include the treatment of burn injuries and fever. They also cover thermal ablation (removal), used in the treatment of cancers and in transdermal drug delivery.

Dr. Karlsson is a founding member of the Cellular & Molecular Bioengineering Research Group, and serves as Director of the College of Engineering Genomics Core Laboratory.

Industry Expertise

Research, Biotechnology, Education/Learning

Areas of Expertise

Bioengineering, Cryosurgery, Biophysical Mechanisms, Cryopreservation, Intracellular Ice Formation, Hyperthermic Processes

Education

Massachusetts Institute of Technology
PhD

Massachusetts Institute of Technology
SM

Massachusetts Institute of Technology
SB

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