

BOGDAN NECULAES received B.S. and M.S. degrees in Physics from “Al. I. Cuza University” (Iasi, Romania), and M.S. and PhD degrees in Nuclear Engineering and Radiological Sciences from the University of Michigan. Dr. Neculaes’ research at University of Michigan focused on magnetron/crossed field device physics towards innovative concepts including magnetic priming, cathode priming, and multiple-cathode based magnetrons.

Currently, Dr. Neculaes is a principal scientist GE Research (GER) in Niskayuna, NY - the research and development arm of General Electric - leading several research portfolios: X-ray generation, interventional radiology, cyclotron/PET accelerator physics, electron beam additive machine technology and bioelectrics. He coordinated one of the largest X-ray source programs at GER in the recent decades that delivered the first in the world distributed X-ray source for inverse geometry computed tomography. He also directed the first successful X-ray source demonstrations with carbon nanotube cold electron emitters at GER, a significant breakthrough for GE, after more than 100 years of using thermionic electron emitters in X-ray sources. Dr. Neculaes has initiated and chaired the bioelectromagnetics initiative at GER, a multidisciplinary research platform focused on creating novel electromagnetic means for manipulation of biological samples. His teams demonstrated new means for cell permeabilization using infrared lasers to enable exogenous molecule delivery, novel gene delivery methods *in vitro* using magnetic nanoparticles and magnetic fields, and innovative ex-vivo platelet activation techniques with pulse electric fields for autologous wound healing applications in clinical workflows. Dr. Neculaes’ research team has delivered key enabling technologies for the best in the world electron beam additive machines, that disrupt current manufacturing protocols in aerospace and medical implant industries.