UNIVERSITY OF ZAGREB
FACULTY OF ELECTRICAL ENGINEERING AND COMPUTING
MASTER THESIS COMMITTEE

Zagreb, 6 March 2017

MASTER THESIS ASSIGNMENT No. 1586

Student: **Dominik Barbarić (0036471136)**
Study: Electrical Engineering and Information Technology
Profile: Electronic and Computer Engineering

Title: **Distributed optical sensor system based on Raman nonlinear scattering**

Description:

An overview of distributed optical sensor systems should be given. Describe linear and nonlinear scattering effects present in optical fibers. Describe distributed optical fiber sensor systems for measuring temperature. Compare reflectometry measurement methods in the time and frequency domains. Describe limitations on the input power of optical pulse depending on the type of the measurement optical fiber. Develop a computer program for noise suppression in the detected scattered signal. Experimentally characterize the distributed optical sensing system for measuring temperature based on non-linear Raman effect.

Issue date: 10 March 2017
Submission date: 29 June 2017

Mentor:
Full Professor Zvonimir Šipuš, PhD

Committee Chair:
Full Professor Mladen Vučić, PhD

Committee Secretary:
Full Professor Dražen Jurišić, PhD