



PhD in Information Technology and Electrical Engineering
Università degli Studi di Napoli Federico II

PhD Student: Maria Alessandra Cutolo

Cycle: XXXVI

Training and Research Activities Report

Year: First

R.A. Cutolo

Tutor: Prof. Giovanni Breglio

Giovanni Breglio
tutor signature

Co-Tutor:

Date: October 21, 2020

Training and Research Activities Report

PhD in Information Technology and Electrical Engineering

Cycle:

Author:

1. Information:

- PhD student: Maria Alessandra Cutolo
- DR number:
- Date of birth: 22/03/95
- Master Science degree: Electronic Engineering University: Federico II
- Doctoral Cycle: XXXVI
- Scholarship type: *no scholarship*
- Tutor: Prof. G. Breglio

2. Study and training activities:

Activity	Type ¹	Hours	Credits	Dates	Organizer	Certificate ²
How to Boost your PhD	Course		3	15/4/2021	Dr. Antigone Marino	Y
Nanotechnologies for electrical Engineering	Course		6	02/3/2021	Prof. Forestiere	Y
“Telemedicina e-health e <<mobile health>> si può davvero usare il digitale nel percorso assistenziale?”	Seminar	three hours	0.6	26-11-2021	Dott.ssa Simonetta Scalvini	Y
Scientific Colloquia at SSM	Seminar	one hour and half	0.3	19-11-2021	Ing. Marco Coraggio	Y
Scientific Colloquia at SSM	Seminar	one hour and half	0.3	26-11-2021	Ing. Marco Coraggio	Y
Scientific Colloquia at SSM	Seminar	one hour and half	0.3	0.3-12-2021	Ing. Marco Coraggio	Y
Scientific Colloquia at SSM	Seminar	one hour and half	0.3	10-12-2020	Ing. Marco Coraggio	Y
Scientific Colloquia at SSM	Seminar	one hour and half	0.3	14-01-2021	Ing. Marco Coraggio	Y
Scientific Colloquia at SSM	Seminar	one hour and half	0.4	21-01-2021	Ing. Marco Coraggio	Y
Scientific Colloquia at SSM	Seminar	two hours	0.3	28-01-2021	Ing. Marco Coraggio	Y
Scientific Colloquia at SSM	Seminar	two hours	0.4	04-02-2021	Ing. Marco Coraggio	Y
Designing a Socially Assistive Robot for adaptive and personalized assistance to patients with dementia	Seminar	one hour	0.2	17-02-2021	Prof. Silvia Rossi	Y

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Scientific Colloquia at SSM	Seminar	one hour and half	0.3	18-02-2021	Ing. Marco Coraggio	Y
Scientific Colloquia at SSM	Seminar	one hour and half	0.3	04-03-2021	Ing. Marco Coraggio	Y
Scientific Colloquia at SSM	Seminar	two hours	0.4	11-03-2021	Ing. Marco Coraggio	Y
Scientific Colloquia at SSM	Seminar	one hour and half	0.3	18-03-2021	Ing. Marco Coraggio	Y
Scientific Colloquia at SSM	Seminar	one hour and half	0.3	25-03-2021	Ing. Marco Coraggio	Y
Ci-lam Phd School	Doctoral school	25 hours	5	12-07-2021 to 6-08-2021	Prof. Giovanni Breglio	Y
Circuiti e sistemi elettronici per applicazioni biomedicali	Course		9		Prof. Michele Riccio	Y

- 1) Courses, Seminar, Doctoral School, Research, Tutorship
- 2) Choose: Y or N

2.1. Study and training activities - credits earned

	Courses	Seminars	Research	Tutorship	Total
Bimonth 1	0	1.5	2	0	3.5
Bimonth 2	0	2.2	8	0	10.2
Bimonth 3	9	1.3	5	0	15.3
Bimonth 4	0	0	8	0	8
Bimonth 5	0	0	7	0	7
Bimonth 6	14	0	5	0	19
Total	18	5	35	0	63
Expected	30 - 70	10 - 30	80 - 140	0 - 4.8	

3. Research activity:

I studied “sers” substrates that they have a binary structure formed by a first layer of spheres on which it comes placed a second layer of smaller spheres. I did simulations by changing the diameter of the Spheres of the First Layer and the diameter of the Spheres of the Second. From the simulations, it was found that the double-layer structure did not present an effective improvement, in terms of performance, compared to the single-layer structure. The structure was also observed through AFM, to verify the assembly capacity. The process parameters still remain to be optimized.

4. Research products:

Authors: Maria Alessandra Cutolo, Antimo Migliaccio, Lucia Altucci, Antonello Cutolo, Andrea Cusano. **Title:** An Innovative High Frequency Hyperthermia Approach against SARS-Cov-2 and

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Related Virus: Feasibility Analysis. Archives of Clinical and Biomedical Research 5 (2021): 421-432.

Authors: Sofia Principe, Martino Giaquinto, Alberto Micco, Maria Alessandra Cutolo, Michele Riccio, Giovanni Breglio, Andrea Irace, Armando Ricciardi, Andrea Cusano. **Title:** Thermo-plasmonic lab-on-fiber optrodes, *Optics & Laser technology*, Volume 132, 2020, 106502, ISSN 0030-3992, <https://doi.org/10.1016/j.optlastec.2020.106502>.

Authors: Antonello Cutolo, Angelo Rosario Carotenuto, Maria Alessandra Cutolo, Arsenio Cutolo, Martino Giaquinto, Stefania Palumbo, Andrea Cusano, Massimiliano Fraldi. **Title:** Ultrasound waves in tumours via needle irradiation for precise medicine, **Journal:** *Scientific Reports*, **status:** under review

5. Conferences and seminars attended

- **TTMeetUP 2020 (Fondazione R&I)**
Title: Barcodes and QRcodes for a low cost wireless sensor for structural monitoring, medical and environmental.
Authors: Cutolo Antonello, Cusano Andrea, Iele Antonio, Bruno Francesco, Cutolo Maria Alessandra.
Presented a patent.
- **TTMeetUP 2020 (Fondazione R&I):**
Title: Thermo-plasmonic lab-on-fiber optrodes.
Authors: Sofia Principe, Martino Giaquinto, Alberto Micco, Maria Alessandra Cutolo, Michele Riccio, Giovanni Breglio, Andrea Irace, Armando Ricciardi, Andrea Cusano.
Poster.

6. Activity abroad:

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7. Tutorship

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