

# Tesi di laurea sperimentali

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Referente: *prof.ssa Nelsi Zaccheroni*

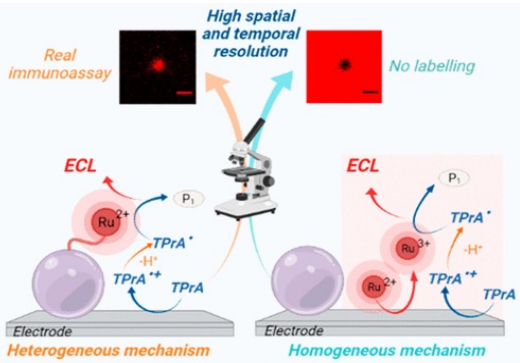
*nelsi.zaccheroni@unibo.it*

## Argomenti di tesi disponibili

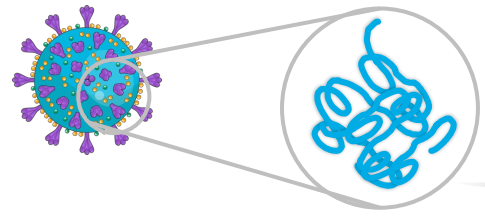
1. Rilevazione di **agenti infettivi** tramite *ElettoChemiLuminescenza* (ECL)
2. Uso di composti basati su *TermoChemiLuminescenza* (TCL) per la rilevazione di **biomarcatori** relazionati al **cancro alla prostata**
3. Sviluppo di nuove piattaforme nanotecnologiche basate su *liposomi* per studio fondamentale e sviluppo di nuovi **sistemi di trasporto** tra cellule

# ECLIPSE: ElectroChemiluminescence (ECL)-based Infectious Pathogens bio-Sensing

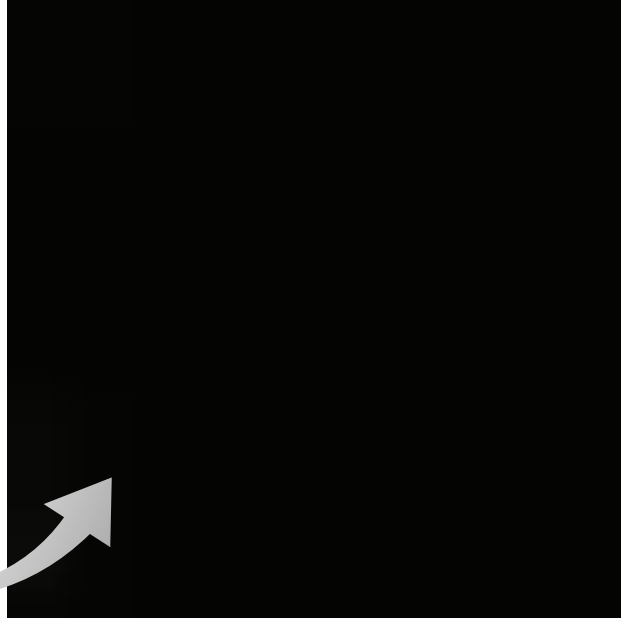
## ElectroChemiluminescence principle



Anal. Chem. 2022, 94, 1, 336–348

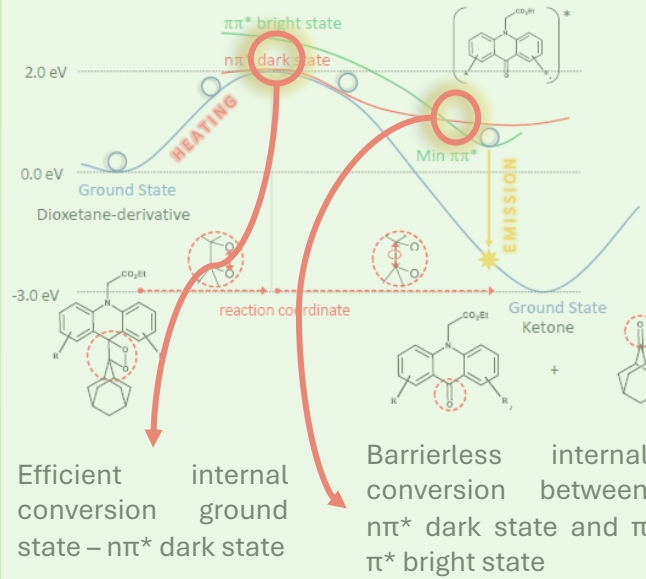


Pathogenic nucleic acid detection through a fast, cheap, portable and simple platform

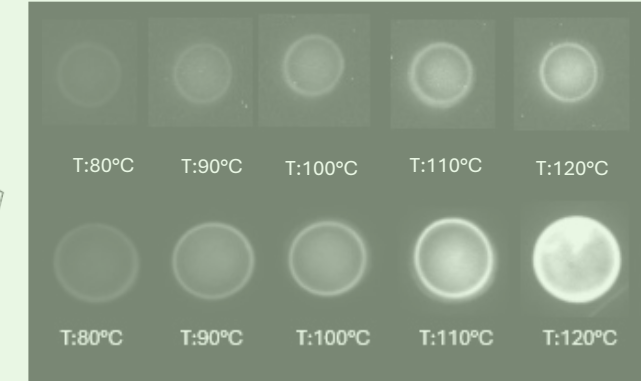


# ThermoPros: Thermochemiluminescence (TCL)-based nanoprobe for multiplex Prostate cancer biomarkers in personalized medicine

## ThermoChemiluminescence principle



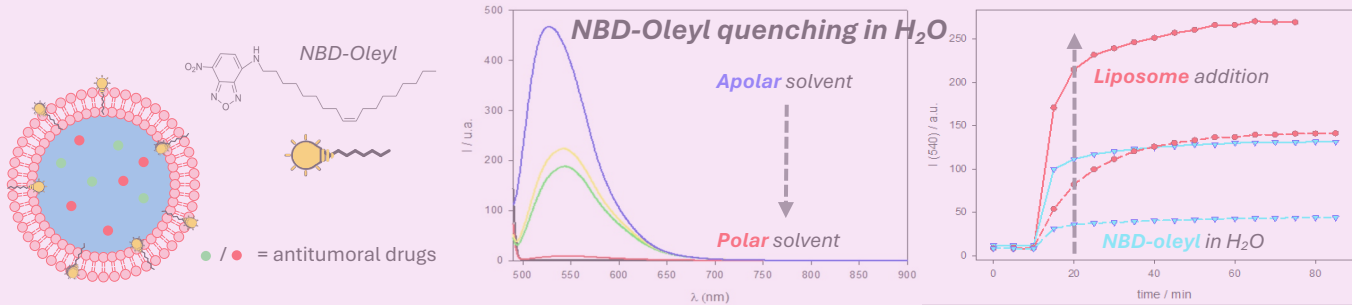
Detection of main prostate cancer biomarkers to make up for the actual prostate-specific antigen screening in serum (limited sensitivity and high false-positive incidence)



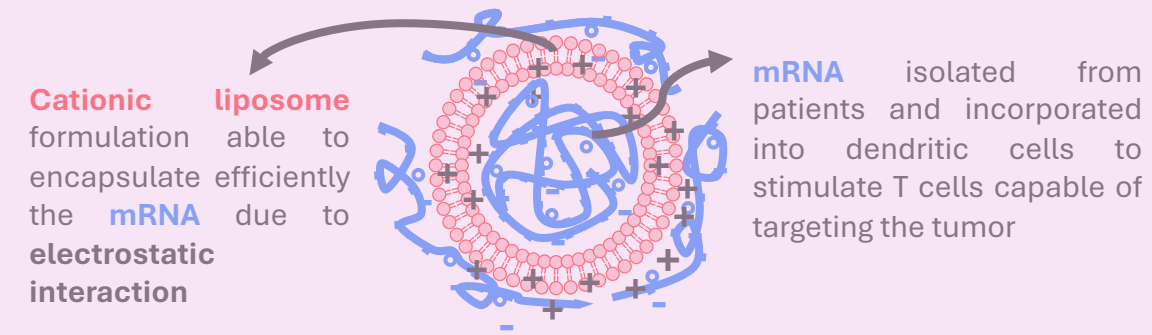
I. Conti, D. Calabria, A. Roda, G. Moroni, A. Gioiello, M. Garavelli. *The fate of excited state of TCL acridine-based 1,2-dioxetane derivatives: Singlet or Triplet? A theoretical approach to evaluate the effect of substituents on their luminescence properties.* 2021

# PEGASO: Nanotechnology-based Platforms for the improvement of therapeutic strategies in soft tissue sarcoma and melanoma lesions

Development of a **polymeric device** for the mechanical support of the soft tissue of a patient after a surgical procedure (e.g., removal of soft tissue sarcoma and melanoma) + *in situ* release of **antitumoral drug via liposomes** for the prevention of tumor mass relapse

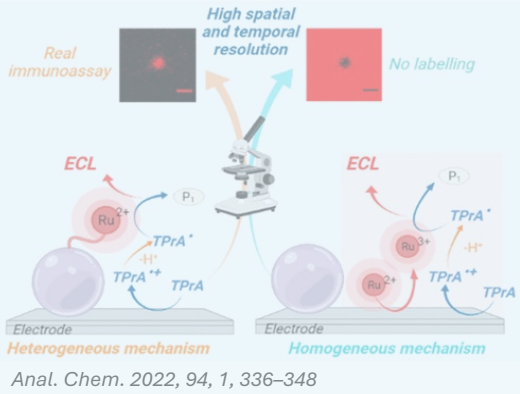


Development of a cationic liposome able to encapsulate tumoral mRNA → aim of obtaining a **liposome-mRNA vaccine**

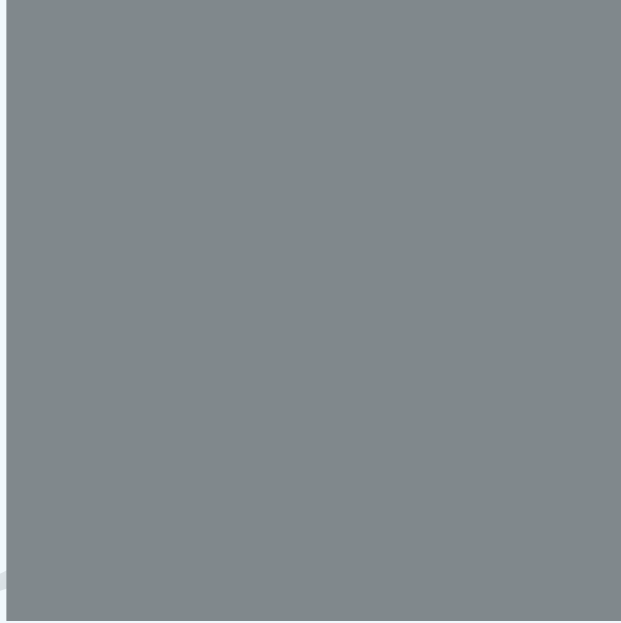


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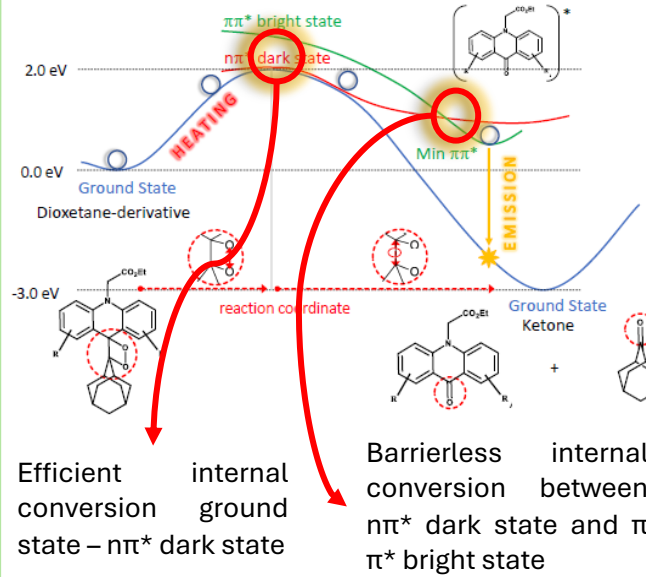


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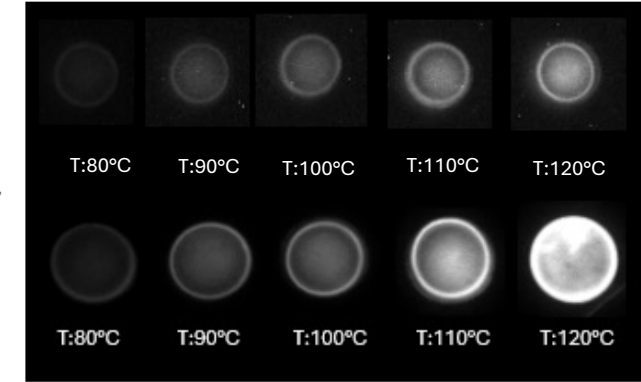


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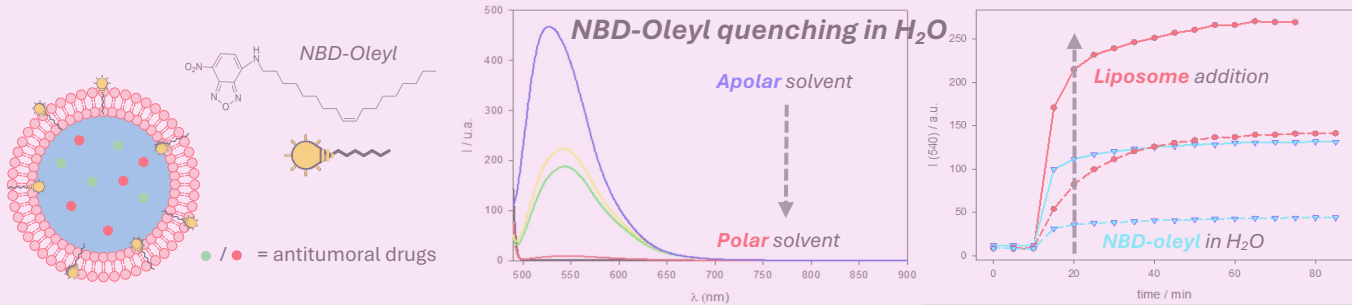
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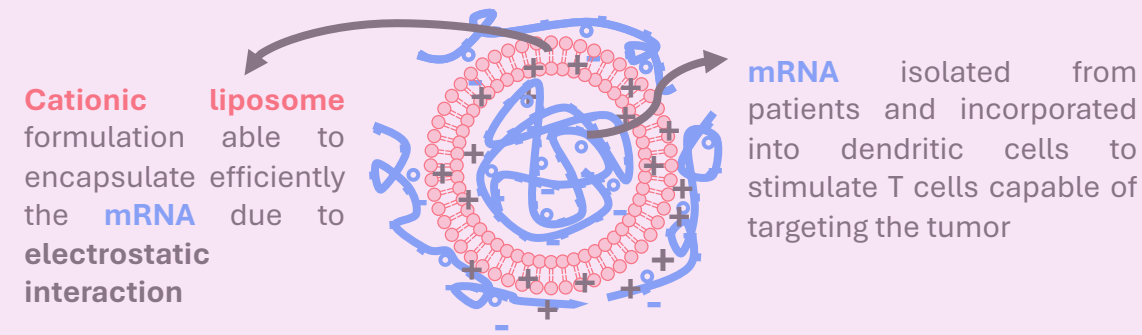
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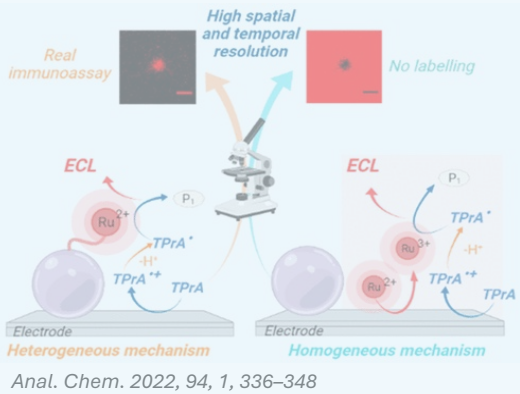


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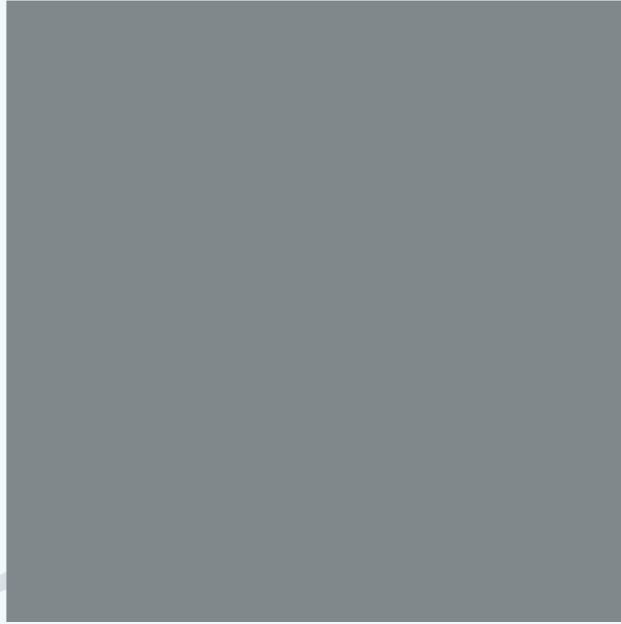


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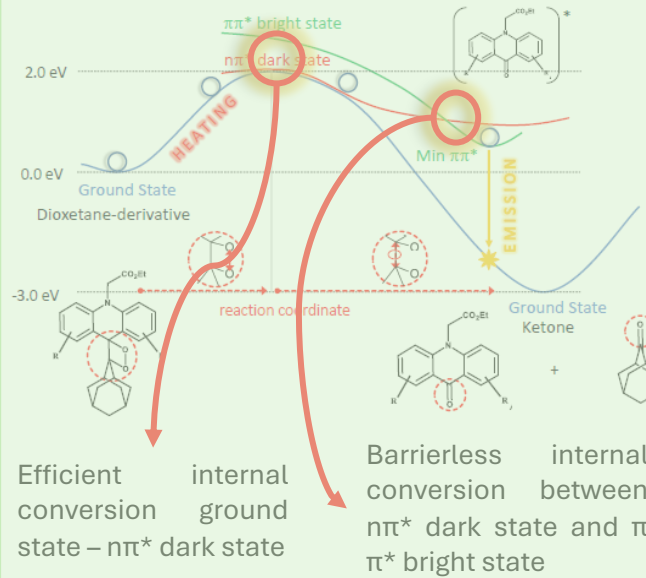


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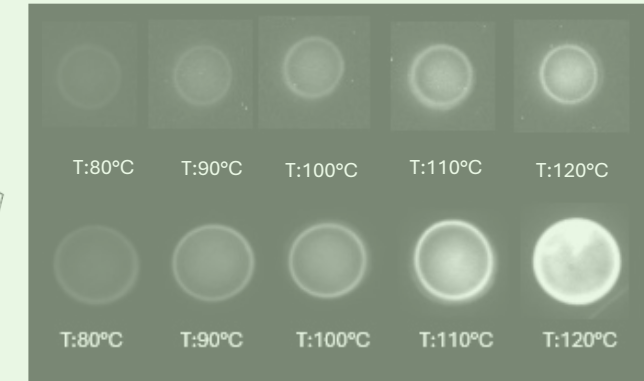


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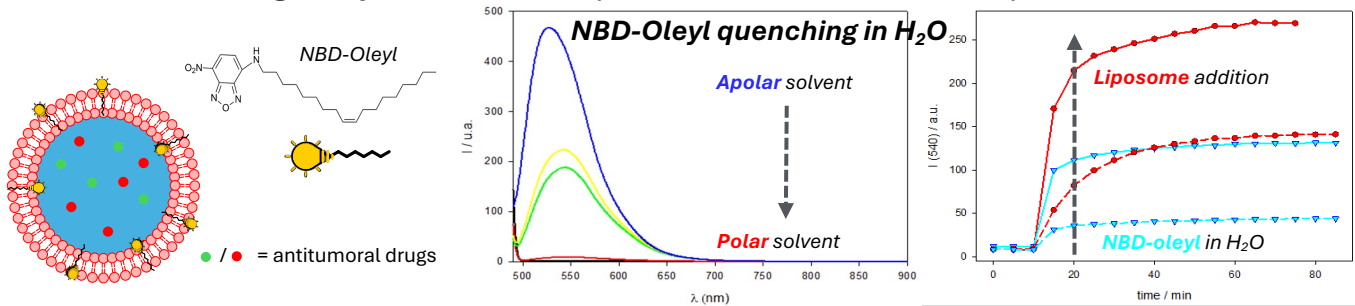
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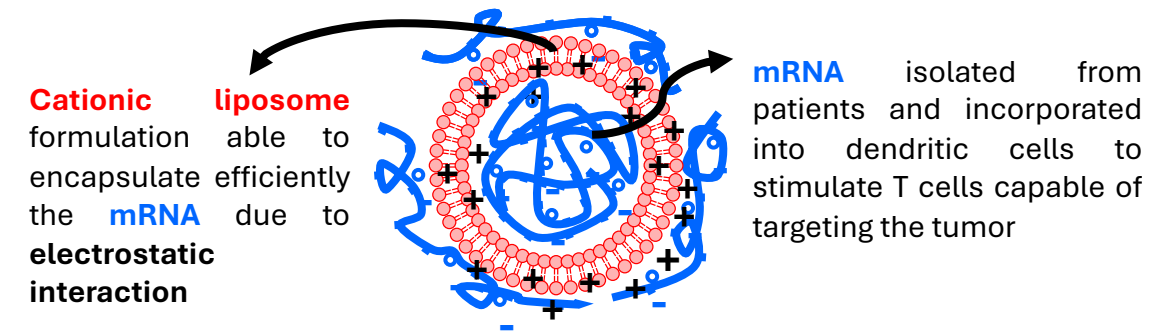
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# Luminescent Nanomaterials and Sensors for Health and Environment



Prof. Luca  
Prodi



Prof. Enrico  
Rampazzo



Prof. Nelsi  
Zaccheroni



Prof. Damiano  
Genovese



Dr. Silvia  
Nuti



Dr. Matteo  
Cingolani



Maria Vittoria  
Balli



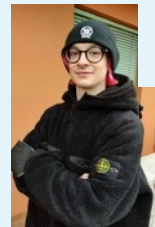
Dr. Chiara  
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Francesca  
Ferraresi

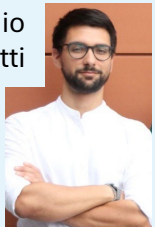


Francesco  
Casnati



Filippo  
Ingargiola

Eugenio  
Giovannetti



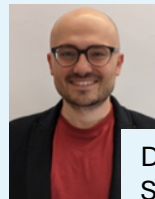
Dr. Yemataw  
Addis Alemu



Madhurima  
Jana



Dr. Tania  
Pecoraro



Dr. H.  
Samet Varol

## Informazioni utili

- il gruppo di ricerca è formato da **quattro professori** che condividono i progetti illustrati (<https://site.unibo.it/nanoparticles-for-therasnostic/en>)
- la prof.ssa Zaccheroni è qui indicata come referente di tutti i progetti di tesi, ma potrà essere **relatore oppure correlatore** delle stesse, a seconda del progetto considerato
- le tesi proposte saranno **UNICAMENTE di tipo sperimentale**
- attualmente i laboratori di ricerca del gruppo si trovano **in via Selmi** e verranno trasferiti al Navile entro la fine dell'estate: in caso di tesi che richiedano l'inizio del tirocinio prima di **settembre**, è **obbligatorio** contattare preventivamente la prof.ssa Zaccheroni per accordarsi in anticipo, dato che potrebbero verificarsi dei problemi logistici durante il trasloco dei laboratori