ERC President visit to Slovenia - Programme
Faculty of Mechanical Engineering, University of Ljubljana
28 Novembre, Aškerčeva cesta 6, Ljubljana, Conference room IV/4

Experience of successful applicant

Matevž Dular

University of Ljubljana

Experience of unsuccessful applicant

Matevž Dular

University of Ljubljana

THE FIRST TRY

Step 1 Evaluation Report

CONFIDENTIAL

Call reference	ERC-2012-StG
Activity	ERC Starting Grant
Funding scheme	ERC Starting Grant
Panel name	PE8-Products and processes engineering
Proposal No.	306668
Acronym	ACCEPT
Panel decision on Career Stage	Starter
Applicant Name	Matevz Dular
Title	Accurate Cavitation Erosion Prediction

PANEL SCORE AND RANKING RANGE

Final panel score : B (is of high quality but not sufficient to pass to Step 2 of the evaluation)	**Ranking range *:** 55%-64%

1. Principal Investigator

PI has made a significant record within cavitation erosion. PI publications as first author is also significant, even though a majority is with his supervisor. PI independent creative thinking, based on the first author without supervisor, is rather low (4). PI has through international co operation and give lectures at different universities. But how such a grant can significantly contribute to PI establishment is not fully clear since PI still is attached to the same faculty as his supervisor. PI has performed both his Diploma and PhD work at Darmstadt University, but got the degrees at Ljubljana University, indicating that much of his work is based on independent creative thinking.

PI & THE TEAM

Prof. Matevž Dular

- 15 years of research experience (> 4 years abroad)
- PI of projects with > 2M€
- Unique research background (from single bubble to random clusters, for hydrodynamic and acoustic cavitation)

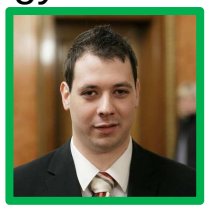
Current “cavitation” team

Experiments

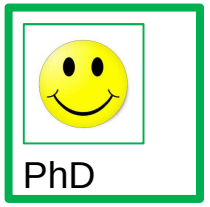


Simulations


Biology



Additions to CABUM team

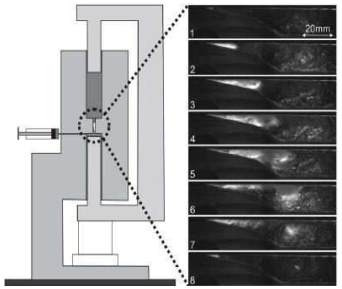


Background & Key Moment

Cavitation:

15000 K
1 GPa

One can exploit it…

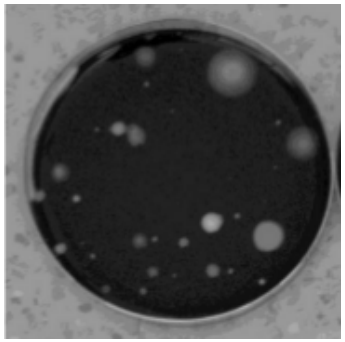


"Historical milestone, extremely high potential impact & potentially game-changing technology for virus inactivation"

Dular et al., 2017, Water Research (IF = 7.7)

(Editor and Reviewers)

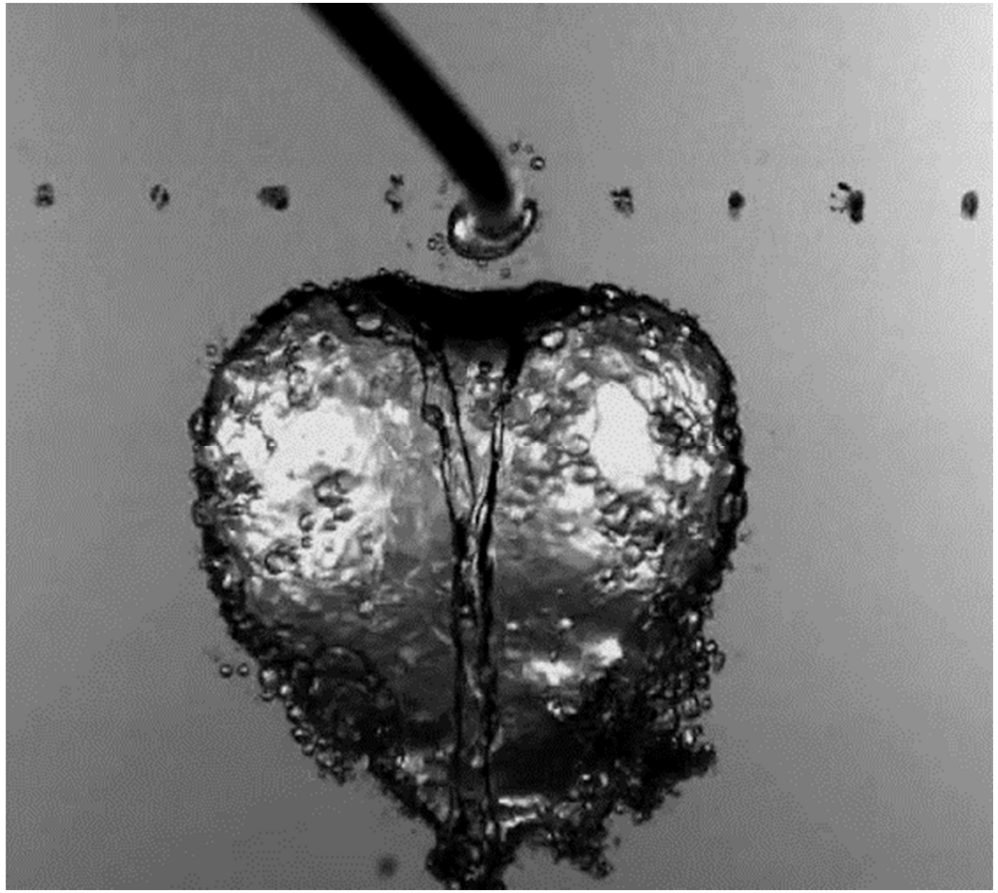
But…



I have shown that the **gentlest of all cavitation** types is the most aggressive towards bacteria.

Dular et al., 2017, Ultrasonics Sonochemistry (IF = 7.9)

An investigation of the mechanisms at the interaction between cavitation bubbles and contaminants



One of the many possible mechanisms of cavitation action against the contaminant: a bubble collapses in the form of a microjet.

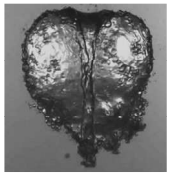
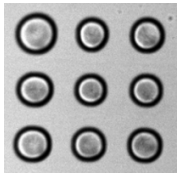
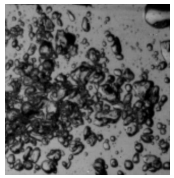
Matevž Dular

University of Ljubljana

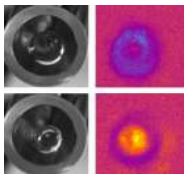
MULTILEVEL & PARALLEL APPROACH

Complexity scales → Single Bubble | Organised Cluster | Random Cluster

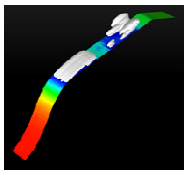
Work Packages

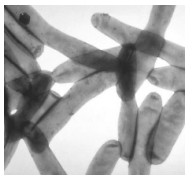
WP1
Engineering
Measurements

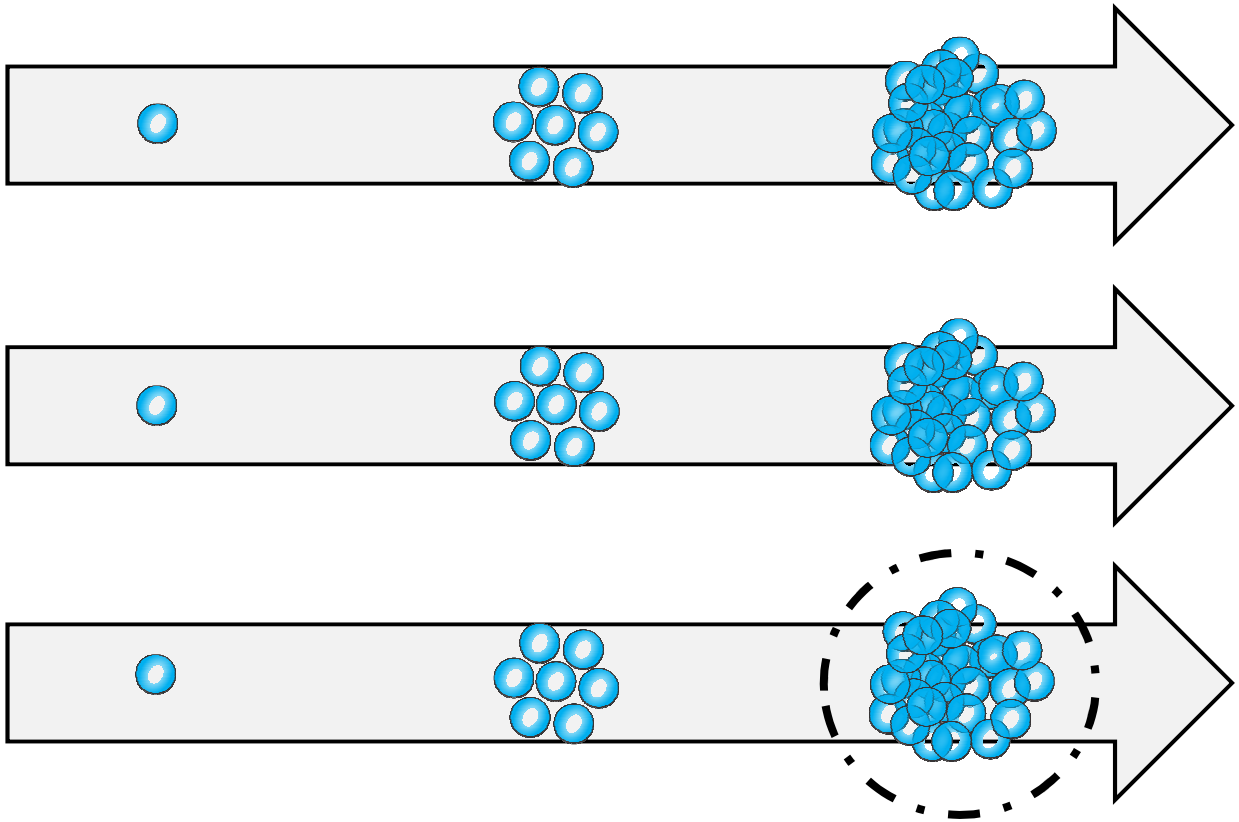


WP 2
CFD
Simulations



WP3
Biological
Measurements

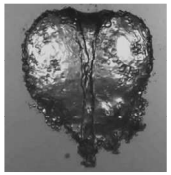
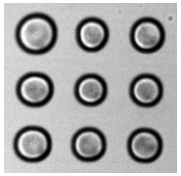
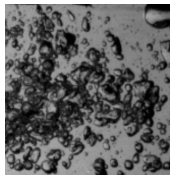




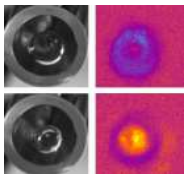
Multilevel & Parallel Approach

Complexity scales → Single Bubble | Organised Cluster | Random Cluster

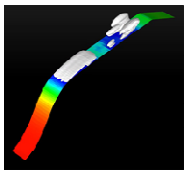
Work Packages

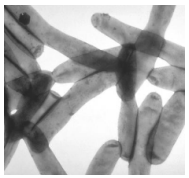
WP1
Engineering
Measurements

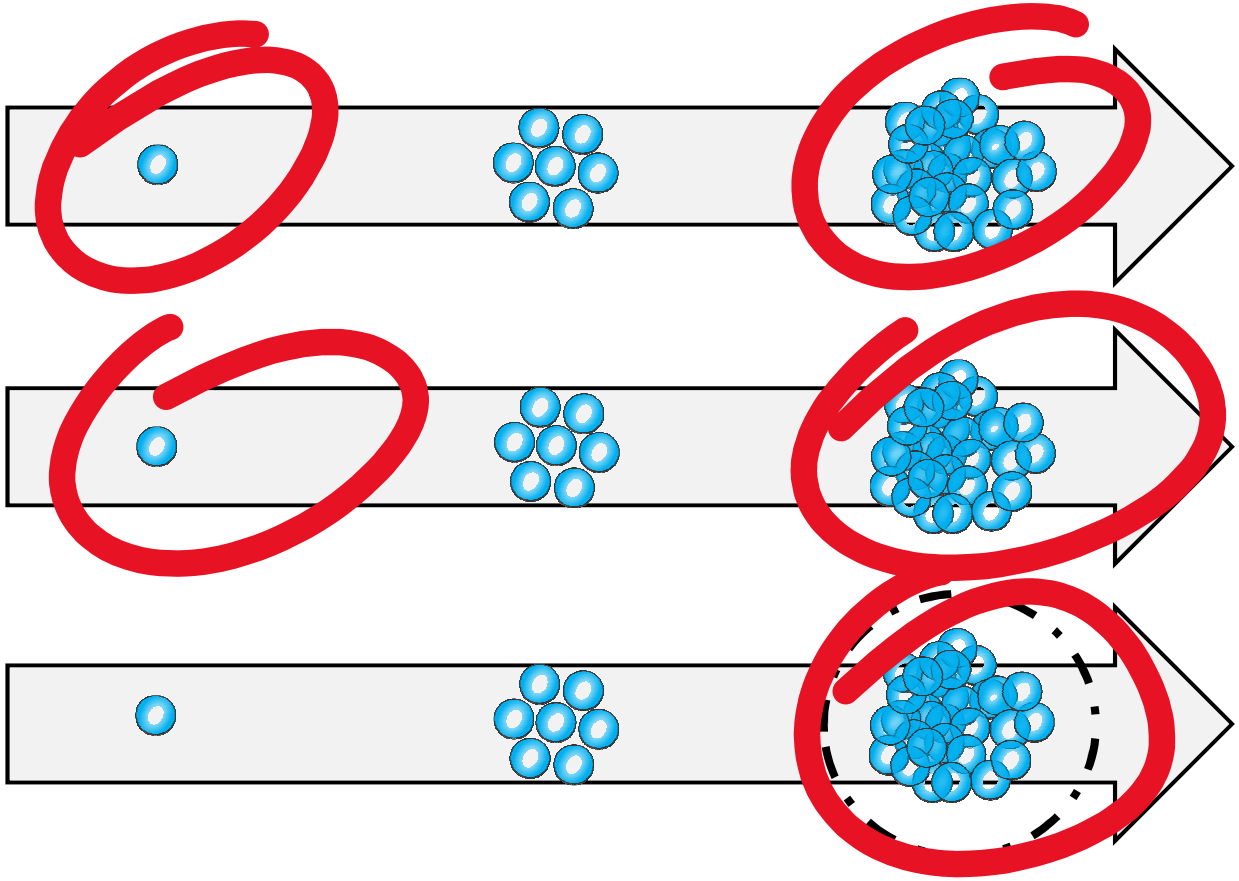


WP 2
CFD
Simulations



WP3
Biological
Measurements





GOAL

SOTA approach

How to be Succesfull: Background

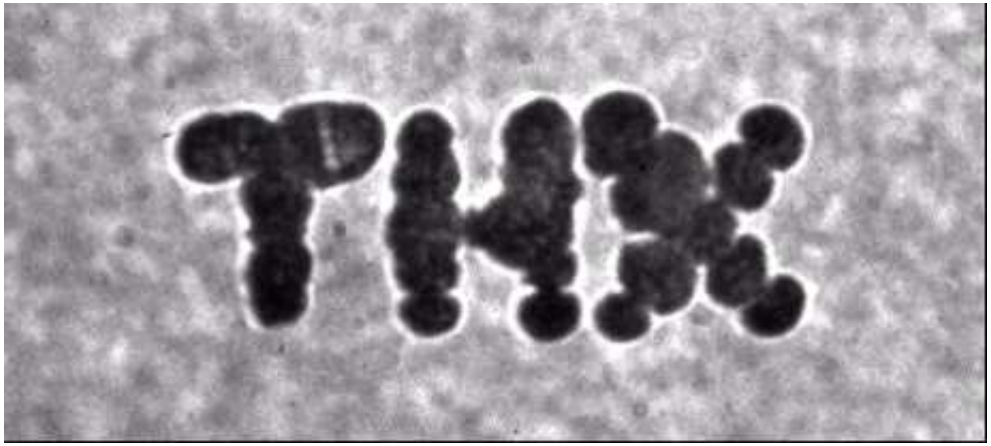
- Change the research group a couple of times
- Work on your CV
- Use Social Media (RG, ORCID, Google Scholar)

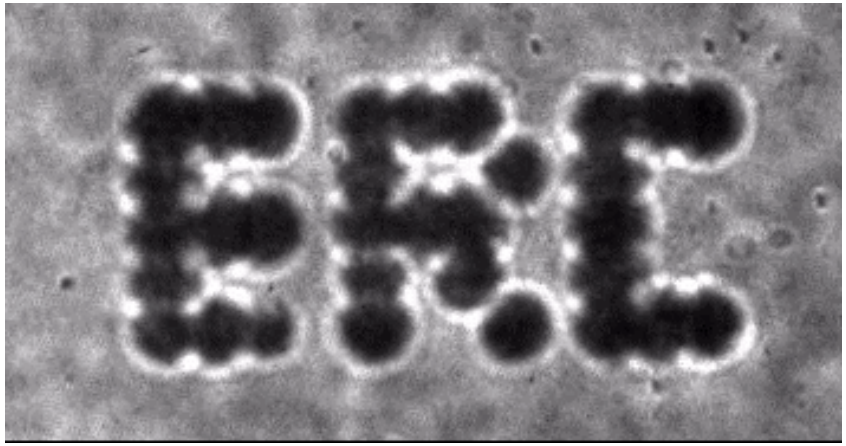
- @ Advisers: Give young people full freedom
- @ Post-Docs: Freedom comes with full responsibility

BACKGROUND

- Do not propose incremental research
- One needs a good idea
- Start really early
- Put your ego away
- Work with project writing experts
- Go to every possible training
- Let your colleagues tear you apart
- Try → Fail → Learn → Try again → Succeed (maybe)

- Expect to invest a ridiculous amount of time into this





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