## Accepted Manuscript

Title: A simple and rapid fabrication method for biodegradable drug-encapsulating microrobots using laser micromachining, and characterization thereof

Authors: Jin-young Kim, Sanghun Jeon, Jieun Lee, Seungmin Lee, Jeonghun Lee, Byoung Ok Jeon, Jae Eun Jang, Hongsoo Choi



| PII:           | S0925-4005(18)30519-7                     |
|----------------|---|
| DOI:           | https://doi.org/10.1016/j.snb.2018.03.033 |
| Reference:     | SNB 24318                                 |
| To appear in:  | Sensors and Actuators B                   |
| Received date: | 7-8-2017                                  |
| Revised date:  | 14-2-2018                                 |
| Accepted date: | 9-3-2018                                  |

Please cite this article as: Jin-young Kim, Sanghun Jeon, Jieun Lee, Seungmin Lee, Jeonghun Lee, Byoung Ok Jeon, Jae Eun Jang, Hongsoo Choi, A simple and rapid fabrication method for biodegradable drug-encapsulating microrobots using laser micromachining, and characterization thereof, Sensors and Actuators B: Chemical https://doi.org/10.1016/j.snb.2018.03.033

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

## ACCEPTED MANUSCRIPT

Manuscript for Sensors and Actuators B: Chemical

Article type: Research paper

Title: A simple and rapid fabrication method for biodegradable drug-encapsulating microrobots using laser micromachining, and characterization thereof

Jin-young Kim<sup>ab</sup>\*, Sanghun Jeon<sup>a</sup>, Jieun Lee<sup>a</sup>, Seungmin Lee<sup>a</sup>, Jeonghun Lee<sup>a</sup>, Byoung Ok Jeon<sup>c</sup>, Jae Eun Jang<sup>c</sup> and Hongsoo Choi<sup>ab</sup>\*

<sup>a</sup>Robotics Engineering Department, Daegu Gyeongbuk Institute of Science and Technology (DGIST), 42988, Daegu, South Korea

<sup>b</sup>DGIST-ETH Microrobotics Research Center, Daegu Gyeongbuk Institute of Science and Technology (DGIST), 42988, Daegu, South Korea

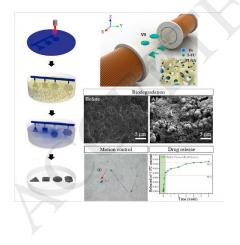
<sup>c</sup>Information & Conmunication Engineering Department, Daegu Gyeongbuk Institute of Science and Technology (DGIST), 42988, Daegu, South Korea

\*Corresponding authors.

E-mail: jy.kim@dgist.ac.kr; mems@dgist.ac.kr Note: Jin-young Kim and Sanghun Jeon equally contributed to this work.

## **Graphical abstract**

The magnetically actuated biodegradable microrobot that encapsulates a drug from the outset is demonstrated for targeted drug treatment. A novel, simple fabrication is suggested to make such microrobots by using UV-laser micro-machining and PLGA/Fe/5-FU materials. The fabricated microrobots are precisely controlled in the fluid by external magnetic fields. Drug release from the microrobot during biodegradation is investigated in an aqueous solution.



Download English Version:

## https://daneshyari.com/en/article/7139790

Download Persian Version:

https://daneshyari.com/article/7139790

Daneshyari.com