



Correction to: Four-dimensional (4D) bioprinting: a systematic scoping review of stimuli-responsive constructs for applications in tissue engineering and drug delivery

Mohammad Moghaddasi¹ · Busra Oktay¹ · Ayse Betul Bingol¹ · Reyhan Yanikoglu¹ · Fatih Ciftci² · Cem Bulent Ustundag¹

© The Author(s), under exclusive licence to Springer Nature Switzerland AG 2025

Correction to: Progress in Additive Manufacturing (2025) 10:8985-9024
<https://doi.org/10.1007/s40964-025-01245-8>

The publication of this article unfortunately contained mistakes. There were several errors within the text. The corrected text is given below.

Citation–claim mismatch errors

In this section, we categorize errors where manuscript claims are inconsistent with the cited literature and specify the requested changes.

Error #1: The error is located at page 15, Fig 6-d footnote. The original sentence “Side and top view images show the scaffold’s temporary flat shape at 0 °C and its permanent

3D shape at 37 °C.” to be changed to “**Side and top view images show the scaffold’s temporary and permanent shapes.**”

Error #2: The error is located at page 15, paragraph 4, ref [76,77]. The original phrase “or electrospun PLLA-co-TMC/TPU and GelMA/PDA laminates.” to be changed to “**or PLLA-co-TMC/TPU and GelMA/gel laminates**”

Error #3: The error is located at page 19, paragraph 1. The original phrase “such as cyclic airflow, to direct the alignment of epithelial cells and fibroblasts within biomimetic airway scaffolds.” to be changed to “**such as cyclic airflow, to enhance cell viability and produce morphology closer to native respiratory tissue within biomimetic airway scaffolds.**”

Error #4: The error is located at page 25, paragraph 3. The original phrase “Polymers that react to temperature, such as PLA, GelMA, and PU nanoparticles,.” to be changed to “**Polymers that react to temperature, such as SOEA and GelMA/PU systems.**”

Error #5: The error is located at page 31, table 5, ref [107]. The original phrase “Drug delivery and scaffold disintegration via temperature or pH-based profiles.” to be removed and the phrase “Temperature-induced detachment of the cells” to be changed to “**minimally invasive tissue regeneration and cell therapy.**”

Error #6: The error is located on page 32, table 5, ref [111]. The original phrase “Biological degradation via metalloproteinase-sensitive motifs (metalloproteinase, K, and MMP-9 enzymes)” to be changed to “**Biological degradation via metalloproteinase-sensitive motifs (proteinase K and MMP-9 enzymes).**”

The original article can be found online at <https://doi.org/10.1007/s40964-025-01245-8>.

✉ Mohammad Moghaddasi
mohammad.mqdsi@gmail.com

✉ Cem Bulent Ustundag
cbustun@yildiz.edu.tr

Busra Oktay
busraoktay95@gmail.com

Ayşe Betül Bingöl
betulbngla@gmail.com

Reyhan Yanikoglu
reyhanyanikoglu@gmail.com

Fatih Ciftci
fciftci@fsm.edu.tr

¹ Department of Bioengineering, Yıldız Technical University, Istanbul, Turkey

² Department of Biomedical Engineering, Fatih Sultan Mehmet Vakıf University, Istanbul, Turkey

Error #7: The error is located on page 35, paragraph 2. The original phrase “but often lacked mechanical robustness as seen in mineralized hydrogel scaffolds” to be changed to **“but often lacked mechanical robustness”**

Textual and spelling errors

In this section, we categorize textual and spelling errors with requested corrections.

Error #1: The error is located on page 9, Paragraph 5, ref [60]. The original phrase “survival under oxidative stress by 76%” to be changed to **“survival under oxidative stress to 76%”**

Error #2: The error is located on page 19, Fig 7-e footnote. The word “Left” to be changed to **“Right”** and the word “Right” to be changed to **“Left”**.

Error #3: The error is located on page 25, paragraph 1, ref [99]. The original phrase “Acrylic copolymers” to be changed to **“Methacrylated copolymers”**.

Error #4: The error is located on page 26, table 4 heading. The original sentence “Summary of stimuli-responsive bioprinted constructs for drug delivery and disease-modeling/treatment, including stimulus–response relationships, fabrication and printing parameters, backbone materials used in the constructs, target tissues, and seeded cell type” to be changed to **“Summary of stimuli-responsive bioprinted constructs for drug delivery and disease-modeling/treatment, including stimulus–response relationships, fabrication and printing parameters,**

backbone materials used in the constructs”

Error #5: The error is located on page 30, table 5 heading. The original sentence “Summary of stimuli-responsive bioprinted constructs with general applications, including stimulus–response relationships, fabrication and printing parameters, backbone materials used in the constructs, target tissues, and seeded cell types” to be changed to **“Summary of stimuli-responsive bioprinted constructs with general applications, including stimulus–response relationships, fabrication and printing parameters, backbone materials used in the constructs.”**

Error #6: The error is located on page 33, table 5 abbreviations. “AA–MA Alginic acid methacrylate” to be changed to **“AA–MA Alginate methacrylate”** and “CS–MA/PEG-DMA Methacrylated chondroitin sulfate” to be changed to **“CS–MA/PEGDMA Methacrylated Chitosan”**

Numeric value & unit errors

In this section, we categorize value errors with requested corrections.

Error #1: The error is located on page 11, table 1, ref^[48]. The phrase **“Injection flow rate: 1 mL/min”** to be removed.

Error #2: The error is located on page 11, table 1, ref^[49]. The value **“Speed: 3000 mm/s”** to be changed to **“Speed: 3 mm/s”**.

Error #3: The error is located on page 11, table 1, ref^[49]. The phrase **“Printing T: 25 °C”** to be removed.

Error #4: The error is located on page 12, table 1, ref^[52]. The phrase **“Flow rate: 2.5 μL/s”** to be removed.

Error #5: The error is located on page 26, table 4, ref^[86]. The value **“Nozzle diameter: 200 μm”** to be removed.

Error #6: The error is located on page 27, table 4, ref^[90]. The value **“Layer height: 250 μm”** to be removed.

Error #7: The error is located on page 27, table 4, ref^[91]. The value “Temperature: Gelation temperature~0 °C, printing medium~65 °C” to be changed to **“Temperature: Gelation temperature~65 °C, printing medium~0 °C”**.

Error #8: The error is located on page 32, table 5, ref^[110]. The value **“Printing T: 200 °C”** to be removed.

Error #9: The error is located on page 33, table 5, ref^[115]. The value “Nozzle diameter: 20 G [soft hydrogel] 22 G [stiff hydrogel]” to be changed to **“Nozzle diameter: 22 G”**.

The original article has been corrected.

Publisher’s note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.