

**Dr. Maria Baboi**  
**100 Davidson Hall, Iowa State University**  
**Ames, IA 50011**  
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## **EDUCATION**

- PhD. – 2007                      Agricultural and Biosystems Engineering, Iowa State University  
Thesis: “*Ultrasonic welding of aluminum: A practical study in consistency, part marking and control modes*”.
- MS – 2005                        Industrial Technology, Iowa State University  
Thesis: “*Improvement of the mechanical properties of soy protein isolate based plastics*”.
- MS -2000                        Material Science and Engineering, Polytechnic Institute – Bucharest, Romania
- BS -1999                        Material Science and Engineering, Polytechnic Institute – Bucharest, Romania

## **AREAS of SPECIALIZATION**

Research Scientist with extensive experience in various areas related to product development, processing and characterization of biorenewable and biodegradable plastic materials, ultrasonic welding, metallurgy, and industrialization.

Also, considerable experience in design of experiments, data analysis, material requisition, project scheduling and administration, equipment instrumentation, process modeling, manuscript and proposal preparation, and presentation. Experience in personnel supervision, management and scheduling.

## **PROFESSIONAL EXPERIENCE**

RESEARCH SCIENTIST - II 2006-Present  
*Department of Agricultural and Biosystems Engineering*  
*Iowa State University                      Ames, IA*

- Conducted research in the areas of processing and product development for optimization of extrusion, injection molding, compression molding, thermoforming, blown film of bio-renewable, environmentally friendly bio-polymers and material characterization.
- Participated in search committees interviewing candidates for part-time/temporary job openings.
- Managed several projects and supervised personnel.
- Prepared technical proposals.
- Taught laboratory courses, such as TSM 240, designed and prepared experiments, analyzed results, interacted with students and faculty in groups and in a one-on-one environment.

RESEARCH SCIENTIST - I

2005-2006

*Department of Agricultural and Biosystems Engineering  
Iowa State University Ames, IA*

- Extensive domestic travel for experimental work in the area of aluminum ultrasonic welding.
- Prepared and presented technical papers at conferences and worksites.
- Conducted experiments including machine setup, tooling alignment, parameter evaluation, operating tensile (stress) testing, machine and data analysis.
- Interacted with corporate sponsors (Emerson Electric) to effectively determine the design of experiments and overall project management.
- Supervised personnel.

RESEARCH ASSISTANT

2002-2005

*Department of Agricultural and Biosystems Engineering  
Iowa State University Ames, IA*

- Responsibilities included tooling, setup and optimization of polymer processing equipment (mixing, extrusion, compression and injection molding) and product development of bio-renewable polymers.

INSTRUCTOR

2003-2004

*Department of Agricultural and Biosystems Engineering  
Iowa State University Ames, IA*

- Taught courses, such as ITEC 120 covering polymer science and industrial processes used in the manufacturing of non-metallic materials
- Developed course syllabus, lectures, class notes, homework, exams and graded students

**PUBLICATIONS**

**Vlad (Baboi) M.**, Jane J., Mungara P., Grewell D. (2005), *Mechanical properties of soy protein isolate/soy hydrolysate plastics*, ***Global Plastics and Environmental Conference***, Society of Plastics Engineering, Atlanta, GA.

**Vlad (Baboi) M.**, Harmon G., Grewell D., Benatar A. (2006), *Weldability of Bio-Renewable Ultrasonic Exfoliated Nanocomposites*, ***64<sup>th</sup> Annual Technical Conference for the Society of Plastic Engineers Proceedings***, Society of Plastics Engineering, Brookfield, CT.

**Vlad (Baboi) M.**, Jane J., Mungara P., Grewell D. (2006), *Mechanical properties of soy protein isolate/soy hydrolysate plastics*, ***64<sup>th</sup> Annual Technical Conference for the Society of Plastic Engineers Proceedings***, Society of Plastics Engineering, Brookfield, CT.

**Vlad (Baboi) M.**, Grewell, D., Kessler M., Srinivasan G. (2006), *Enhancing Plastic from Naturally Occurring Proteins*, ***SPG Media Group PLC***, Brunel House, London W2 1LA, UK.

**Vlad, (Baboi) M.**, Srinivasan G., Grewell D. (2007), *Improvement of the mechanical properties of soy protein isolate based plastics*, **65th Annual Technical Conference for the Society of Plastic Engineers Proceedings**, Society of Plastic Engineers, Brookfield, CT

**Vlad (Baboi) M.**, (2007), *Ultrasonic welding of aluminum: A practical study in consistency, part marking and control modes*, **PhD thesis, Iowa State University**, 128 pp.

**Baboi, M.**, Srinivasan G., Jane, J.-L., Grewell, D. (2007), *Improvement of the mechanical properties of soy protein isolate based plastics through formulation and processing*, **International Polymer Processing** 22(5), 489-496.

**Baboi M.**, Srinivasan G., Grewell D. (2008), *Feasibility Study of The Use Of DDGS Plastic Composite*, **66th Annual Technical Conference for the Society of Plastic Engineers Proceedings**, Society of Plastic Engineering, Milwaukee, WI.

**Baboi M.**, Grewell, D., Srinivasan G., Kessler M., Graves W., Helgeson M. (2008), *Plant Based Plastics and Applications*, Iowa State University, **Bioplastics/Biocomposites Workshop**, Ames.

**Baboi M.**, Grewell D., Srinivasan G., Kessler M., Graves W., Helgeson M. (2008), *Plant Based Plastics and Applications*, ICIPC (Research Institute for Plastics and Rubber) **International Colloquium**, February 27 - 29, Medellin, Colombia.

**Baboi M.**, Grewell, D., Srinivasan G., Kessler M., Graves W., Helgeson M. (2008), *Plant Based Plastics and Applications*, **SAMPE 2008 Fall Technical Conference**, September 8-11, Memphis, TN. (peer reviewed).

**Baboi M.**, Grewell, D., Srinivasan G. (2009), *Investigation of Processability of Protein Based Plastics and Composites*, **Presentation at 25th Annual Meeting of The Polymer Processing Society**, Goa, India.

**Baboi M.**, Grewell D. (2009), *Effect of buffer sheets on the shear strength of ultrasonic welded aluminum joints*, **Welding Journal** 88, 86-s – 91-s.

## **OTHER**

Multilingual; proficient in English, Romanian, experienced in French, German, Italian, Spanish.

## **HONORS**

### **PARTNER IN EDUCATION**

International Friendship Foundation

Recipient of Outstanding Teaching Skills Award

### **FIRST PRIZE**

Student Scientific Dissertations

Polytechnic Institute – Bucharest, Romania