

EG MAM 2015

Eurographics 2015 Workshop on Material Appearance Modeling: Issues and Acquisition

**Darmstadt, Germany
23 June 2015**

**Held in conjunction with
The 26th Eurographics Symposium on Rendering**

Workshop Co-Chairs

**Reinhard Klein, University of Bonn
Holly Rushmeier, Yale University**

Proceedings Production Editor

Dieter Fellner (TU Darmstadt & Fraunhofer IGD, Germany)

Sponsored by EUROGRAPHICS Association

Dieter W. Fellner, Werner Hansmann, Werner Purgathofer, François Sillion
Series Editors

This work is subject to copyright.

All rights reserved, whether the whole or part of the material is concerned, specifically those of translation, reprinting, re-use of illustrations, broadcasting, reproduction by photocopying machines or similar means, and storage in data banks.

Copyright ©2015 by the Eurographics Association
Postfach 2926, 38629 Goslar, Germany

Published by the Eurographics Association
–Postfach 2926, 38629 Goslar, Germany–
in cooperation with
Institute of Computer Graphics & Knowledge Visualization at Graz University of Technology
and
Fraunhofer IGD (Fraunhofer Institute for Computer Graphics Research), Darmstadt

ISBN 978-3-905674-83-5
ISSN 2309-5059

The electronic version of the proceedings is available from the Eurographics Digital Library at
<http://diglib.eg.org>

Table of Contents

Table of Contents	iii
Preface	iv
Author Index	v
Papers	
The Material Definition Language	1
<i>L. Kettner, M. Raab, D. Seibert, J. Jordan, and A. Keller</i>	
Proposal for an Appearance Exchange Format	5
<i>Gero Mueller and Francis Lamy</i>	
In Praise of an Alternative BRDF Parametrization	9
<i>P. Barla, L. Belcour, and R. Pacanowski</i>	
Linear Models for Material BTFs and Possible Applications	15
<i>D. den Brok, M. Weinmann, and R. Klein</i>	
Quality Assurance Based on Descriptive and Parsimonious Appearance Models	21
<i>J. B. Nielsen, E. R. Eiriksson, R. L. Kristensen, J. Wilm, J. R. Frisvad, K. Conradsen, and H. Aanæs</i>	
Geometric Accuracy Analysis of Stationary BTF Gonioreflectometers	25
<i>V. Havran</i>	
Identifying Diffraction Effects in Measured Reflectances	31
<i>N. Holzschuch and R. Pacanowski</i>	
A Short Survey on Optical Material Recognition	35
<i>M. Weinmann and R. Klein</i>	

Preface

This is the third edition of the workshop on Material Appearance Modeling. For the first time, the workshop was scheduled for a full day. The format included 30% to 50% of each session for discussion. There were over 50 participants, and a wide range of questions and comments were offered during each session.

There were four sessions for four broad topic areas. The first focussed on material descriptions for exchange. This included presentations from representatives of two industry sectors important to appearance modeling – the computing software/hardware industry for computing appearance, and physical appearance measurement industry that is tied to many traditional appearance applications. The second session considered mathematical formulations – both for bidirectional reflectance distribution functions (BRDFs) and for bidirectional texture functions (BTFs). The third session had presentations about physical measurements. Many non-traditional (for computer graphics) applications for material measurements were presented. An analysis of mechanical errors in BTF measurement systems was also given. The final session was about classification. The first paper gave observations on classifying optical effects in measured data. The final paper surveyed progress in recognizing materials.

Based on the success of this year's workshop, the 4th edition is planned with the same format in conjunction with EGSR 2016 in Dublin.

We gratefully acknowledge the support of the Fraunhofer IGD for the production of these proceedings. Holly Rushmeier's participation was partially supported by grant #1218515 from the US National Science Foundation.

Holly Rushmeier
Reinhard Klein
Workshop Co-Chairs

Author Index

Aanæs, H.	21	Kettner, L.	1
Barla, P.	9	Klein, R.	15, 35
Belcour, L.	9	Kristensen, R. L.	21
Brok, D. den	15	Lamy, Francis	5
Conradsen, K.	21	Mueller, Gero	5
Eiriksson, E. R.	21	Nielsen, J. B.	21
Frisvad, J. R.	21	Pacanowski, R.	9, 31
Havran, V.	25	Raab, M.	1
Holzschuch, N.	31	Seibert, D.	1
Jordan, J.	1	Weinmann, M.	15, 35
Keller, A.	1	Wilm, J.	21